

A COMPARATIVE STUDY OF PERCEIVED
STRESS AMONG UNDERGRADUATE
STUDENTS

By

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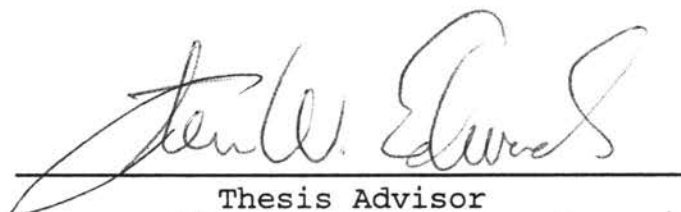
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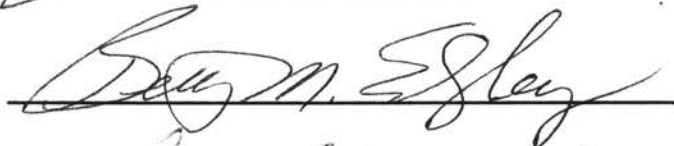
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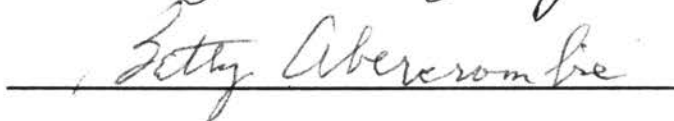
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CHAPTER I

INTRODUCTION

Stress is defined as a state of extreme difficulty, pressure, or strain (Costello, 1993, p 1343). Although there are many different definitions of stress, experts agree that it is a perception, real or imagined, that is interpreted as a threat (Seward, 1997, p 11). It is often described as the inability to cope with demands placed on a person. Some aspects of stress usually include feelings of being overwhelmed, impatience, panic, anger, frustration, helplessness, anxiety, as well as boredom (Seward, 1997, p 11). Advances in technology have given us laborsaving devices, so that there might be more time for leisure, but instead people are working even more to buy these labor-saving devices (Brightbill, 1960). Circumstances that were supposed to reduce stress have done actually the opposite and have created even more demands on peoples' free time (Brooks/Cole, 1996). Stress-related degenerative diseases, such as cardiovascular disease, high blood pressure, and digestive disorders are increasing in prevalence (Brooks/Cole, 1996). According to the American Institute

of Stress, 75% to 90% of all visits to physicians involve stress-related complaints (Hales, 2000, p 25).

According to Soren Kierkegaard (1844/1957) stress or anxiety is a part of being. Being free to choose is what Kierkegaard believed caused anxiety, and he described it as burdensome. The central concept of existential philosophy is freedom. Freedom is awareness of the possibilities faced in life that each one creates and develops which includes the existence of choices. (Edwards, 1999). Hans Selye conceptualized stress as good stress (eustress) or negative stress (distress). Distress is characterized by anxiety, fear, worry, or agitation with the core psychological experience being negative, painful, or something to be avoided (Rice, 1992). Eustress is characterized by pleasurable, satisfying experiences such as a wedding ceremony, anticipation of competing, or performing in the theatre. Eustress heightens awareness, increases mental alertness, and often leads to superior cognitive and behavioral performance. Selye thought eustress should be sought out and used as an ally for personal and professional growth.

Evidence gathered over the last decade reveals that psychological stress changes the immune system. Psychoneuroimmunology research shows that various forms of

chronic stress, such as marital problems, work-related stress, and grieving have suppressive effects on various immune system parameters (Barthrop et al., 1977; Jemmott and Locke, 1984; Ursin et al., 1984; Glaser et al., 1985; O'Leary, 1990; Olf, 1999). These suppressive effects lead to fewer circulating B cells, T cells, and decreased natural killer cell activity (NKCA) (Olf, 1999).

Impairment in the immune system may lead to increased susceptibility to infections, such as colds, herpes, and HIV and may worsen existing disease processes such as cancer (Rosen et al., 1984; Kiecolt-Glaser and Glaser, 1995; Olf, 1999). Depression may also be conceived as a part of chronic stress. Stressful life experiences play an important role in the etiology of expressed depression (Olf, 1999).

In contrast to the depressive effects on the immune system as seen with chronic stress, acute stress, such as that evoked during an examination, or experimentally induced stress seem to have an activating effect on the immune system (Olf, 1999).

Psychological characteristics predetermine the endocrine and immune responses to acute and chronic stress. Personal resources have been shown to alter the endocrine as well as the immune system (Mason, 1968; Lazarus and

Folkman, 1984; Levine and Ursin, 1991; Ursin and Olf, 1993; Olf, 1999).

Psychological stress arises from a discrepancy between two perceptions: perception of the requirements of a change and perception of resources to handle it (Edwards, 1999, p 182). An individual's own defensive coping strategy may affect the way that a situation is perceived (Olf, 1999). Life experience is defined as a series of events and changes and stress typically begins when the changes become too overwhelming.

One important life change is leaving high school to attend college or go to work. One study indicated that transition from high school or work to college is an exceedingly complex phenomenon (Terenzini, et al., 1994). In particular, transition to college is very stressful for most students. (Mathis & Lecci, 1999). Undergraduate students experience a wide variety of pressures during their early years in college (Roscoe, 1987). For many students, the transition high school to college means moving away from home for the first time to a completely new environment as well as shouldering the responsibility for being on their own. Many students leave behind support systems that they developed in high school and are suddenly burdened with having to make new friends in college

(Kalsner, 1991). Romantic and family relationships often change as a part of the transition to college. Students are in a completely new social setting which can be a major causative factor for stress (Lazarus & Folkman, 1984; Edwards, 1999).

Many students, even with solid high school academic preparation, do not realize that the standards for academic success in college are more demanding than those in high school (Kalsner, 1991). The amount of homework required and length and complexity of tests is different when compared to what students had experienced in high school. Parents' expectations as well as the students' own pressure to earn good grades and to earn a degree are very high (Hirsch & Ellis, 1996; Ross, Niebling, Heckert, 1999).

The distress experienced by many students, especially those considered high-risk, is overwhelming and may result in withdrawal from school by the junior year (Russell & Petrie, 1992). Many factors other than adjustment and academic pressures can cause stress; it is important to look at students' perceived stress and to what extent various situations are stressful. This could have implication for how college-age students learn to cope with stress throughout life. Ultimately the success of their

coping skills may impact the outlook for their long term health.

Numerous instruments have been created by researchers to measure stress and help determine its effect on health and mood. One instrument in particular is the Social Readjustment Rating Scale which represents an attempt to study life changes that bring about stress (Gadzella, et al, 1991). A few instruments have been created to measure the stress experienced by college freshmen as they adjust to college life but few are available for other the other classifications of undergraduate college students.

STATEMENT OF THE PROBLEM

The problem of this study was to determine if there were any differences among types of universities regarding factors that undergraduate students perceive to cause stress, as well as the level of stress perceived by students. A second problem in this study was to investigate if gender was a determinant for the factors or levels of perceived stress among undergraduate students. A third problem was to determine if the factors of perceived stress and levels of stress among undergraduate students were different among the four undergraduate classes.

NEED FOR THE STUDY

The transition from high school to college causes many college students to experience stress. Moving away from home and leaving behind family and friends can leave students feeling lost and lonely and without a support system, especially on a large campus. Differences in academic requirements from high school to college can also be overwhelming. Students' may lack the self-efficacy to handle the different requirements and the transition and, therefore, they end up leaving school. Current research shows that less than 15% of student attrition is due to academic dismissal. Students mostly leave college because of personal, financial, and social problems (Kalsner, 1991). The results of this study may help university administrators and educators understand more about the factors that students feel cause them stress and, therefore, decrease the stress for students and prevent college student attrition.

SIGNIFICANCE OF THE STUDY

The information from this study could provide insight to college administrators and professors regarding what students perceive to be stressful in their college experience. Student orientation programs could be enhanced to help students with stressors identified by the results

of this study. Possible curriculum development and reevaluation of student orientation programs could help students learn about stress management and positive coping skills which could prepare them for life after college.

HYPOTHESES

The following null hypotheses were examined:

Ho1

There would be no significant difference in perceived stress scores among undergraduate students by type of university.

Ho2

There would be no significant difference in perceived stress scores among undergraduate students by gender.

Ho3

There would be no significant difference in perceived stress scores among undergraduate students by classification in school.

DELIMITATIONS

This study had the following delimitations:

1. Subjects from three different universities were administered the College Undergraduate Experience Scale (CUES).
2. Subjects in this study were 359 undergraduate students, from a Research II University (School A),

295 undergraduate students from a Comprehensive I University (School B), and 237 undergraduate students from a Liberal Arts II university (School C).

3. To have a true representation of all grade levels, students was selected from a variety of freshmen, sophomore, junior and senior level courses.

LIMITATIONS TO STUDY

The research was limited by the following:

1. Students could have been experiencing an unusually stressful day so their perceived stress scores would be higher than they might be otherwise.
2. The instrument is a self report inventory.
3. Subjects in this study were not randomly sampled.
4. There was no attempt to account for variability due to age.

ASSUMPTIONS

The following assumptions were made:

1. Subjects were traditional college students because data collection took place during typical workday hours.
2. Subjects made an honest effort in answering the questions on the instrument.
3. Students accurately represented their respective classes.

4. Subjects were able to read and understand the questions on the instrument.

DEFINITIONS

Attrition - a gradual reduction or decrease in number.
(Costello, 1993).

Hypertension - abnormally high blood pressure

Liberal Arts University II - Institutions that are primarily undergraduate colleges that are less selective and award more than half of their degrees in liberal arts fields (Carnegie Foundation, 1987).

Comprehensive University I - Institutions that offer baccalaureate programs and, with few exceptions, graduate education through the masters degree. More than half of their baccalaureate degrees are awarded in two or more occupational or professional disciplines such as engineering or business administration (Carnegie Foundation, 1987).

Research Universities II - Institutions offer a full range of baccalaureate programs, are committed to graduate education through the doctorate degree, and give high priority to research. They receive annually between \$12.5million and \$33.5 million in federal support for research and development and award at least 50 Ph.D. degrees each year.

CHAPTER II

REVIEW OF THE LITERATURE

This review of the literature outlines definitive aspects of stress and its effects. The first section includes theories of causation, physiological effects, and psychological effects. The second section concerns college students and stress. It includes a discussion of theories that specifically relate to students and the college experience as well as the effects of stress on students. This section also includes literature regarding stress and gender as well as year in school. The last section presents information about different types of schools, specifically the types utilized in this study.

STRESS

There are numerous descriptions of the term stress, its causation, and effects. There are many internal and extraneous variables involved in what is believed to cause stress. There can be physical stressors that involve insult to the tissues of the organism and psychological stressors which induce anticipation of threat or harm (Strange et al, 2000). Stress was first identified in animals as a

nonspecific response to a demand. It is also defined as an alteration in the body's hormonal and neuronal secretions caused by the central nervous system in response to a perceived threat (Mason, JW, 1975; Migliori, et al, 1987; Strange, et al, 2000). Often the term pressure or strain is heard when people talk about stress. Pressure and strain are descriptions used in engineering to describe forces and how they effect change (King, Stanley, and Burrows, 1987). These terms can also be used in describing stress and strain in humans. Studies have revealed that when well-established personal and social values are disrupted, a stress reaction occurs and the type of reaction depends on the characteristics of the individuals. (Lazarus, 1966).

Theories Related to Stress

Historically stress theories have ranged from biological factors to predisposing factors. The most noted biological theory was Hans Selye's General Adaptation Syndrome. Theories about pre-disposing factors include a person's genetic history, temperament, and subjectivity to psychological stress.

General Adaptation Syndrome

Hans Selye developed the specific term *stress* from his experiments with animals wherein he investigated animals'

responses to "noxious" or unpleasant stimuli.

Physiological changes in the animals included enlarged adrenals, shrunken spleens, and ulcerated digestive systems. Selye found that when he exposed the animals to a wide range of unpleasant situations it resulted in disequilibrium in the system (Lazarus, 1966) and a constellation of physiological responses took place. He termed the responses General Adaptation Syndrome (GAS). Selye posited that bodies strive to maintain a stable state known as homeostasis and physiological survival (Lazarus, 1966).

Factors that cause stress may be physical or psychological. Physical stressors may be illness, accidents, injuries, heat, cold, and noise while psychological factors include life events such as the death of a loved one, a divorce, or job pressures. Both types cause the same physiological responses (Robbins, Powers, Burgess, 1999). Positive stressors, such as getting married, birth of a baby, and job promotions may also stimulate physiological responses. According to Hans Selye, the difference between the two is distress, caused by unpleasant stressors and eustress caused by positive stressors, both of which may cause the same stress response in the body (Donatelle, Snow, and Wilcox, 1999).

Change Theory

Kurt Lewin's change theory posits a three-step process; unfreezing, moving toward a new level, and refreezing. Just as Selye presents that our bodies try to maintain homeostasis, Lewin also postulates that the human mind wants to maintain equilibrium. In the unfreezing step there is movement from a steady state to an unstable state that is open to change. This change in the equilibrium (disequilibrium) is referred to as breaking the habit. Unfreezing moves one into the second stage of movement toward a new goal of equilibrium. The discomfort and dissatisfaction from unfreezing can stimulate movement. The last level in change is refreezing where people are comfortable with change and are able to achieve a new level of equilibrium (McGovern, and Rodgers, 1986).

Cognitive Transactional Model

Richard Lazarus developed one of the most prominent cognitive transactional theories of stress (Rice, 1992, p 21). His theory captures personality theory, attitude research, social research, health research, and behavioral medicine. Lazarus postulated that stress and health influence each other. Stress may have an impact on health and health may change one's resistance or coping ability (Rice, 1992, p 21). The central point to the Cognitive

Transactional Theory is that it is neither an environmental stimulus, the characteristic of a person, nor a response, but a relationship between demands and the power to deal without destructive costs (Coyne & Holroyd, 1982, p 108; Rice, 1992, p 21). Lazarus posits that cognitive appraisal is personal because emotional and motivational states differ across time, which may affect the appraisal process (Rice, 1992, p21).

Other cognitive researchers examine stress mechanisms and the different ways our brain processes information. People perceive, label, and store experiences and the brain retrieves and uses this information. One's perception of events or situations determines his/her reaction to objective events.

Subjective factors can play a much larger role than objective factors in the experience of stress. One person may perceive an objective event in a positive way but, to another, it may be a negative event (Murphy, 1996). In other words one person may interpret an event as stressful while another person does not. Another factor to consider is the changes in a person's mood or state. On one occasion a person may be relaxed and rested and at another time the same person may be tired and tense. Across time emotional and motivational states can differ which

indicates that the appraisal process is very individualistic.

Stress and Physiological Effects

Stress and Immune Function

The immune system works to provide protection from invading microorganisms such as bacteria, viruses, fungi, and parasites. These organisms, known as antigens, are viewed by the immune system as foreign. A slight decline in immune function may increase susceptibility to microbial invasion (Jacobson, Aldana, Goetzl, Vardell, Adams & Pietra, 1996). When a threat arises, immune cells network to protect the body (Insel and Roth, 2000). The immune response has two different parts, cellular immunity; cells that directly combat antigens and humoral immunity; products of immune cells, such as antibodies, that combat antigens. Lymphocytes are the key cells that control the immune response. It is important for these cells to have the ability to reproduce rapidly when faced with an antigen (Cohen and Herbert, 1996). Natural Killer cells (NK) are important in that they can detect altered cells, e.g. virally infected or pre-cancerous cells, and kill them. Recent studies have redefined their role as primarily preventing the spread of tumors to secondary sites (Herberman, 1991; Edelman and Kidman, 1997).

Psychoneuroimmunology (PNI) is the study of the central nervous system and immune system's inter-relationship. Evidence for the connection between the central nervous system and the immune system comes from animal studies (Cohen and Herbert, 1996), although scientists recognize that the emphases are different when studying humans. In humans the associations are between psychological traits or states and immunity. Biological and behavioral pathways are responsible for the relationship in humans, and the examination of whether or not psychologically induced changes in immunity are accountable for changes in susceptibility to immune system-mediated disease (Cohen and Herbert, 1996).

Cohen and Herbet (1996) speculated that in the face of stressful events or negative emotional states, behavior changes and coping responses might influence immunity. Stressful life events are commonly believed to alter immunity and, hence, susceptibility to immune system-mediated disease. In a 12-week study by Stone et al (1994), various amounts of secretory Immunoglobulin A (sIgA) antibody were measured. Subjects reporting more desirable events also had greater (sIgA) antibody production and those reporting more undesirable events which were related to less production of (sIgA).

Graham et al (1986) collected measures of life stress from 94 family members before and during a six-month period. A diary on subjects' respiratory symptoms was collected daily. When compared to the low-stress groups, the high-stress groups experienced more episodes of illness as well as more days with the symptoms of respiratory illness. From these studies and others it appears that both stressful life events and psychological stress (perceptions and negative affect) are associated with increased susceptibility to upper respiratory infections (Cohen and Herbert, 1996).

Stress and Chronic Diseases

Both physical and mental stress can cause significant elevations in blood pressure. Responses to stress can cause a transient elevation of blood pressure which is likely due to increased sympathetic-adrenal medullary activities (Rosch, 1994). Some authorities believe that the increased sympathetic tone that is demonstrated in most hypertensives could result in hypertension, which is a risk factor for many forms of cardiovascular disease. Rosch (1994) indicated that stress may be shown to aggravate almost all of the different contributors to hypertension such as salt sensitive hypertension, obesity, caffeine consumption, cigarette smoking, and excessive alcohol

intake. Personality variables such as low self-esteem, feelings of hostility, and isolation may interact with stress, which also affects the emotions, e.g. anger and depression. These reactions to stress cause catecholamines, adrenaline-like chemicals, to be released which can damage the cardiovascular system (Robbins, Powers, Burgess, 1999).

Some studies have found an association between stressful life events and cancer onset and progression, others reveal no correlation (Edelman and Kidman, 1997). A number of studies on human breast cancer have shown a significant correlation between psychosocial stressors and reduced efficacy of cancer therapies (Lichman, Taylor, & Wood, 1985; Waxler-Morrison, Hislop, Mears, & Kan, 1991; Strange et al, 2000) and other studies have shown that reducing the effects of life stressors with social support may extend survival time and reduce the side effects of chemotherapy (Chiueh, & McCarty, 1981; Grossarth-Maticek, & Eysenck; 1989; Spiegel, Bloom, Kraemer, & Gottheil, 1989; Strange et al, 2000). Although there is a common belief that stress or other psychological factors play a role in the onset of cancer or the progression of cancer, the relationship between stress and cancer is still unclear. Interpretation of cancer data from studies with humans may

be complicated because of reliance of self-reports and some may not yet have been diagnosed with cancer. In the future animal models may provide a way to investigate the relationship between tumor growth and stress (Sklar, & Anisman, 1981; Strange et al, 2000).

Stress may still be involved with the formation of peptic ulcers even though the helicobacter pylori bacterium was discovered in many people with ulcers (Levenstein, Ackerman, Kiecolt-Glaser, Dubois, 1999). Other digestive problems such as stomach aches, gastritis, diarrhea and constipation are associated with stress and it may also aggravate problems such as irritable bowel syndrome and ulcers (Insel and Roth, 2000).

PSYCHOLOGICAL STRESS

Stress not only affects our physical well being but also our psychological health. Some life events are considered to be psychological stressors, and they may be either pleasant or unpleasant. The stress response helps people handle the variability of these stressors, but the human behaving system may become overloaded by a string of stressful events or situations. An overload of stress may contribute to depression, anxiety, phobias, and addictive behaviors (Robbins, Powers and Burgess, 1999). Negative behavior reactions to an overload of stress include eating

disorders, excessive alcohol use, irritability, insomnia, and nervous habits such as nail biting (Robbins, Powers and Burgess, 1999). Even when accounting for personality traits, coping styles, and other variables such as age and sex, anxiety-related behavioral changes may develop with repeated stress. Zelena, et al's study, (1999) indicated that repeated stress, even in the rats that showed no signs of chronic stress, may cause subtle behavioral changes. This may be a hidden factor that can have long-term consequences on the development on anxiety-type behaviors (Zelena, et al, 1999).

Historically research has focused more on life event stress and its effects of depression, but more recently researchers have investigated chronic stress and its damage to health which can result from event stress. Also a number of studies have examined work stress. Stressors include chronic marital difficulties, depression, and heavy workloads which affect home life (Weinberg, & Creed, 2000). Researchers have examined the secondary consequences of life event stress and their effects on major depression. Secondary consequences include loss of a job and its accompanying financial burdens (Kessler et al, 1987; Kessler, 1997) and social isolation as an outcome of divorce (Umberson et al, 1992; Kessler, 1997).

Stress and the Workplace

The American Institute of Stress (2000) reported that 43% of all adults suffer from stress related health problems. In the workplace the reported feelings of high stress more than doubled from 1985 to 1990 (American Institute of Stress, 2000). Job related stressors may be produced by an array of psychosocial and organizational factors such as workload (overload and underload), role ambiguity, autonomy, underutilization of skills, and participation in decision making (Murphy, L., 1996) Relocation due to job changes or advancement may be uprooting in terms of established work contacts, social contacts, and family relationships (Benson et al, 2000). Strange, et al's (2000) studies using rodents indicated that moving a rodent to a new cage may cause significant alterations in plasma stress hormone levels as great as other physical stressors that were applied (Strange et al, 2000). Transition may affect the whole family. Research indicates that relocation is a stressful life event, especially for children (Allan & Anderson, 1986). Erikson's (1950) theory states that permanence in an environment is important for the facilitation of self-concept development and when children experience relocation in their environment it puts them at a psychological

disadvantage. Relocating requires adjusting to a new school and its academic requirements, making new friends, and leaving old friends and what were familiar surroundings. Allan and Anderson (1986) conducted a study examining elementary school children's perceptions of crises in their lives. Moving was frequently mentioned as an event that tends to activate hurt feelings about leaving family, grandparents, friends, pets, and their house. Studies show that mobile adolescents seem to have a more difficult time developing intimate relationships and sharing with their peers (Humke, Schaefer, 1995).

Marriage and Family

Transitions in marital status may also evoke eustress and distress. The anticipation of a pending wedding may be stressful but usually in the positive sense. Marital disruption by dissolution of a marriage, death of a spouse, depression in a spouse, or the cognitive impairment of a spouse is associated with higher risks for psychological distress (Aseltine & Kessler, 1993; Bloom et al 1978; Moritz et al 1989; Taylor, Repetti, & Seeman, 1997). The time leading up to the actual divorce can be a more critical event than the final process. With divorce come many adjustments in finances, responsibilities of the children, and social support (Hope, Rodgers, & Power,

1999). Other factors associated with distress and marital relationships are conflict, unwelcome advice, and caregiving demands. Lack of expected support by family and friends is also associated with depression and distress (Brown & Harris, 1989; Taylor, Repetti & Seeman, 1997).

With a growing elderly population, the parental role is changing for those who take care of their children but who are also caregivers for their parents. Even though providing care to parents may result in psychological and interpersonal rewards, it may also be demanding in terms of role conflict. Spitze, Logan, Joseph, and Lee (1994) reported a positive correlation between hours helping biological parents and psychological distress for both men and women (Spitze, Logan, Joseph, and Lee, 1994; Voydanoff, & Donnelly, (1999).

College Student Stress

Development of identity is a life-long process that can reach a crisis point in adolescence as one faces many inner changes that may affect future commitments such as friendships, dating, and decisions regarding sex (Crain, 1992).

There are numerous adjustments that individuals face as they graduate from high school and enter the young adulthood phase of life. As adolescents enter college,

they are faced with new freedoms and more strenuous academic demands than they are accustomed to and may feel that they have inadequate academic preparation (Ginsberg, 1980). The new freedoms and demands may be too overwhelming and stressful which may result in some students leaving school.

MODELS OF STRESS

Social Disruption and Anxiety Model

The general idea of this model is that an individual exists in a certain context and life events create changes within that context that lead to increased anxiety. Academic institutions undergo periods of rapid change which may create chronic instability (Wolff, 1953; Fisher, 1994). The cultural changes may create pressures and people may not have the skills to reduce the anxiety caused by these rapid changes (Fisher, 1994).

Role Status and Consistency Model

This model is similar to Lewin's theory of change. Totman (1979) believes that social factors have a protective influence on one's health (Fisher, 1994). Status inconsistency may cause one to be susceptible to illness. Totman posits that every individual is equipped with a set of rules and, to exist, the rules allow resistance to change. Social change, such as losses or

marital disharmony, can bring a breakdown of these rules (Totman, R., 1979; Fisher, 1994). For example a person who loses a spouse, in addition to grieving for a lost loved one, may also lose an aspect of his/her identity and may have to evolve into a new status in a community (Fisher, 1994).

The Control Model

Fisher's (1986) control model proposes that life events create not only change but a reduction in the amount of control over different aspects of a new lifestyle (Fisher, 1994). Change introduces novelty as well as creating discrepancy which in turn may decrease the level of control one may have in relation to a environment (Fisher, 1986; 1994). Even though change may be transient, a person can feel a loss of control of a new environment (Fisher, 1994).

Separation Anxiety

Fisher (1994) offered a theory based on research by Bowlby (1973) that involved separating an infant from its mother. The separation resulted in the infant displaying anxious searching behavior that also experienced frequent bouts of anger and distress. Similar attachment may be present in adults (Weiss, 1982; Fisher, 1994). Factors that have to be considered in adults that may be like that

of infants are relationships with parents, friends, and siblings. The role of individuals in other people's lives has to be taken into account. Feelings of incompetence, panic, and distress may result even if the loss of support is temporary (Bowlby, 1973; Fisher, 1994).

TRANSITION TO COLLEGE

Madison (1969) reports that many young adults choose to further their education after high school rather than go into the workforce. Non college bound young adults immediately face the challenge of trying to fit into our complex society. Conversely, the college student enters immediately through a distinctive social system (Madison, 1969). College students face several major issues, such as competence, connections, and transitions simultaneously (Conley, 1996). They are confronted with the developmental challenge of individuation, that is, separating from family of origin so as to assume adult roles and responsibilities (Crespi and Generali, 1995), such as making future and career choices, developing intimacy, becoming autonomous, and solidifying identity (Chickering, 1974). Students have a variety of backgrounds and begin making decisions about friends, attitudes about sex, and occupational goals (Crain, 1992). For many it is a chance to move away from home and experience freedoms for the first time. Students

envision being away from parental control and opportunities to participate in interesting activities (Pancer, Hunsberger, Pratt, & Alisat, 2000). There may be experiences of homesickness as students adapt to new cultural climates, such as new environments, faces, and routines (Fisher, 1994). Students that have high expectations of college may become stressed when faced with the challenges and rigorous demands of college life (Pancer, Hunsberger & Pratt, & Alisat, 2000). The choices and adjustments for some students may be perplexing and stressful. Studies suggest that stress may cause biological changes that lead to overeating (Greeno & Wing, 1994). This may account for weight gains experienced by students during their first year of school as a part of the adjustment of being on their own. The adaptation and change (Chiroboga and Dean, 1978; Dohrenwend, 1973; Schlossberg, 1978; Mauer, 1982) for some students may be challenging and a time for personal growth. Others may become overwhelmed and experience depression and maladjustment (Cutrona, 1982; Hammen, 1980; Lokitz & Sprandel, 1976; Wintre & Yaffe, 2000). During the first few months students may experience unhappiness, frustration, being lost, depression, disappointment, irritability, and confusion. Feelings of disorientation and confusion are universal among students.

Even students who appear to be poised, happy, and in control of themselves experience doubt and despair (Lindgren, 1969). Students who may be at the top academically, athletically, and socially in high school may face, for the first time, being second best when attending college with many students of the same caliber (Geraghty, 1997).

International students may have added stressors along with adjustments to college (Ginter & Glauser, 1997; Mori, 2000). These students may have cultural adjustments, such as the implications of being a non-American and racial/ethnic minority (Helms & Richardson, 1997; Alberta & Rodriguez, 2000). International students may experience difficulties with language, academic differences, interpersonal relationships, financial, and intrapersonal problems (Mori, 2000).

Academic Transition

Academic underpreparadness has existed since the mid-1800's. (Tomlinson, 1989, Kalsner, 1991). Students who are deficient academically are not just attending open enrollment schools, but Ivy League colleges, small liberal arts schools, junior colleges and technical schools (Moore & Carpenter, 1985; Kalsner, 1991). A large proportion of the undergraduate population differs from the profile of

the college student who successfully meets minimum academic admission requirements. Students who are at high risk, i.e. deficient in college preparatory curriculum, SAT, and ACT scores, are at a greater risk to be unsuccessful academically (Ryland, Riordan, & Brack, 1994).

International students are at risk because of differences between the International and American education systems. (Thomas & Althen, 1989; Mori, 2000). Asian, Middle Eastern, and African students are trained to sit quietly through lecture classes while taking notes to memorize for exams that usually happen once or twice a year (Thomas & Althen, 1989; Mori, 2000). The American educational system (Thomas & Althen, 1989; Mori, 2000) involves independent library research, essays and term papers, pop quizzes, and participation in class discussions.

It appears that most studies with college students indicate correlation between student stress and both academics and grades. Kohn & Frazer (1986) found that final grades, excessive homework, term papers, studying for exams, and examinations were the most significant stressors students encountered. When preparing for midterm or final exams students' schedules exacerbate the problem with the flip-flop of their days and nights (Stress Adds Up, 1999). Kaufman, Mensink & Day (1998) postulated that academic

stressors compare favorably with performance and evaluation concerns that athletes and other types of performers experience. Many first year students may become overwhelmed with the academic conditions that are different from their high school requirements. College academic standards involves constant evaluation throughout school. Students may experience anxiety, some even severe, before exams or when major assignments are due. In addition to test anxiety, other potential sources of stress are excessive homework and unclear assignments (Kohn & Frazer, 1986; Ross, Niebling, & Heckert, 1999). Many students may feel pressure for academic success from sources within and outside the school experience. The pressure may be from within the student's own perfectionism, but also perceptions from family and friends (Arthur & Hayward, 1997). Those students who commute or maintain jobs while in school are faced with less time to complete long assignments and study for exams.

Some students view education as a challenge and the stress that accompanies the college experience may bring a sense of competence and an increased capacity to learn. However, for those who see it as a threat it can cause feelings of helplessness (Neal, Spendlove, & Clark, 1985).

Murphy & Archer, (1996) replicated at the same university the Archer and Lamnin study done in 1985, which investigated the change in stressors on college university campuses. Results revealed similar patterns of stressors for both studies. The top personal stressors identified by students were intimate relationships, finances, and parental conflicts and the top academic stressors were tests/finals, grades/competition, professors/class environment, and time demands (Murphy & Archer, 1996).

Gray, and Rottman (1988) investigated student stress at University of Nebraska. Results indicated an increase in stress regarding high parental expectation and decreased grades.

UCLA's Higher Education Research Institute began the Freshmen Survey (CIRP) in 1966 (Carpenter, 2000). The 1999 survey indicated that a record number of college freshmen, 30.2%, responded with frequent feelings of being "overwhelmed with all they had to do", which is slightly higher than the previous year of 29.6% but significantly higher than the 16.0% in 1985 (Sax, Astin, Korn, & Mahoney, 1999).

Even though the college experience may be causal in stress there are circumstances that students may be coping with that are different from they typical college

undergraduate (Roscoe, 1987). There are a considerable number of students facing major life crises prior to or during college. One study reported 84% of the student sample had experienced at least one major life trauma, such as the death of a significant other, an accident, or a life threatening experience (Lauterbach & Vrana, 1991; Cole, 1985; Frazer & Schauben, 1994). Roscoe (1987) cited experiences from some students such as decisions about abortion, death of a pet, criminal arrests, and being sexually assaulted.

Psychosocial Adjustments

Traditional college-aged students go through transition from adolescence to adulthood (Katz, 1975; Aycock, 1989). They face many developmental issues, such as individuation from home, peer influence, sexual development, identity establishment, and occupational choices (Katz, 1975; Aycock, 1989). The process of integration into the social and academic systems of a higher education institution has been paralleled with Van Gennep's (1960) "rites of passage" that includes a three stage process; separation, transition, and incorporation (Terenzini, et al, 1993). Populations that are going through developmental transitions are thought to be

especially vulnerable to the effects of stress (Cohen et al, 1987; Towbes & Cohen, 1996).

Students are meeting new changes constantly. They must balance competing demands from academic performance while responding to life changes that prompted enrollment in a college program (Arthur & Hierbert, 1996; Schlossberg, Lynch & Chickering, 1989; Arthur & Hayward, 1997). The students are in a new environment and have new living quarters and they experience dietary changes due to planning their own meals. Also many lose the daily contact they had with family and friends and they then have to make many independent decisions. These changes may become overwhelming and often result in students seeking counseling for adjustment difficulties (Stress Adds Up, 1999) because of high self-expectations and role overload (Geraghty, 1997). Counseling centers on college campuses see as many as 20% of students in sessions compared to half as many only five years previously (Geraghty, 1997).

Individuation is the process whereby an individual becomes increasingly separated or differentiated from his or her family of origin (Bray, Williamson, & Malone, 1984b; Fraser, & Tucker, 1997). The disconnection must happen so adolescents may form personal life goals with some degree of confidence and independence (Kidwell, Fischer, Dunham, &

Baranowski, 1983; Fraser & Tucker, 1997). Some students are not capable of solving their own problems because parents promote dependence on the family. Harvey, et al (1991) found significant negative relationships between personal authority and psychological distress in college students. This fusion with the family makes it difficult for students to develop problem-solving skills and the ability to make independent choices because of preoccupation with parents' preferences (Fraser & Tucker). A study done by Wintre & Yaffe (2000) indicated that authoritative parenting style appears to have an indirect positive effect on students adjusting to school. Authoritative parenting style is demanding but responsive to children. There is reciprocal communication which creates an independent sense of self (Wintre & Yaffe, 2000).

Many international students perceive that an education from American schools may help them with professional opportunities in their own countries (Altbach, Kelly & Lulat, 1985; Sandhu, 1994). Those students who migrate to America for their education suffer severe emotional pain with a profound sense of loss. According to Hayes & Lin, 1994; Sandhu (1994) the initial visit to the United States is the single most painful experience for international

students. Many students suffer high levels of anxiety that accompany feelings of alienation, nostalgia, depression, and a sense of helplessness. Their support system is lost and they typically do not develop one with teachers and administrators because their relationships are typically of contractual and hierarchical in nature (Roland, 1994; Pedersen, 1991; Sandhu, 1994). In addition to encountering different experiences, research demonstrates that students of diverse racial and ethnic backgrounds have different perceptions regarding various aspects of campus life. Although institutions have diverse student bodies, research suggests that students do not experience the same campus environment, many experiencing lack of support as well as an unwelcome academic climate (Loo & Rolison, 1986; McClelland & Auster, 1990; Pascarella, Edison, Nora, Hagedorn, & Terenzini, 1996; Schwitzer, Griffin, Ancis, & Thomas, 1999; Stone & Archer, 1990; Suen, 1983; Ancis, Sedlacek, & Mohr, 2000). Groups composed solely of African American or Asian American students are viewed as racial segregationists (Loo & Rolison, 1986, p 72; Ancis, Sedlacek, & Mohr, 2000) while students of color perceive it as valuable social support (Ancis, Sedlacek, & Mohr, 2000). Ancis, Sedlacek, & Mohr (2000) reported African American students perceptions of significantly more racial-ethnic

conflict on campus; pressure to conform to stereotypes; and less equitable treatment by faculty, staff, and teaching assistants; and exposure to racially insensitive comments (D'Augelli & Hershberger, 1993; Ehrlich, 1990; Neville, Heppner, & Wang, 1997) on predominately white campuses.

Student Attrition

Roughly half of student attrition takes place in the first year with 17% not returning after the first semester (Kalsner, 1991) and 25% not returning for their sophomore year (Foltz, 1987). High attrition rates during the freshman year suggest that many students may not be giving themselves a chance to adjust. If students do not have the commitment to school, the stress of adjustment may be enough to discourage them from sticking it out (Tinto, 1987; Kalsner, 1991). Alexander Astin has studied college students for numerous years. Astin revealed that the most frequent reasons students leave school are boredom with courses, financial difficulties, dissatisfaction with requirements or regulations, and change in career goals (Astin, 1975).

Colleges are composed of academic and social communities, each having their own unique characteristics (Tinto, 1985). There are times that there is incongruency

between the needs, interests, and skills of individuals and the university communities (Tinto, 1985).

Tinto (1975) posits that studies of student attrition need to first examine the characteristics of individuals, such as prior educational experience, future goals in education, and their persistence in college. Another factor to consider is interaction within the college setting, such as developing friends for social support as well as the characteristics of institutions, such size and type of school. College students were given the "What Works in Student Retention" survey (Tinto, 1987; Pascarella & Terenzini, 1977; Kalsner, 1991), and institutions reported caring attitudes from faculty and staff was ranked as most important positive factor that contributes to students staying in school and an increase in academic integration (Tinto, 1975). Professors may help with students' transition if conversations are not just limited to academic work, but also include social, intellectual, and career issues (Tinto, 1987; Pascarella & Terenzini, 1977; Kalsner, 1991).

Research done by Pascarella & Terenzini, (1991) shows a strong indication that if students become involved in any way in their new college community and make a successful transition from high school and work to college,

educational growth and persistence are significantly increased. (Terenzini, et al, 1994).

Kalsner (1991) mentions Rootman's College-Fit Theory and Tinto's Path Analysis Model that coincide with student attrition. The college-fit model posits that student's come to college with certain background characteristics and commitments that influence how well they fit into the academic and social environment of the institution. Tinto (1975) states that the better a student integrates into the individual and social college systems the more they will persist to finish. The path analysis model identifies four variables that may impact whether a student has a successful integration into college and whether they develop persistence: 1) Family background, individual attributes, and precollege experiences; 2) Initial commitment to the goal of college completion and the institution; 3) Academic performance and intellectual development, as well as interactions with social peer groups and faculty; and 4) Subsequent goals and commitment.

GENDER AND STRESS

Social structure provides the framework for much of our society's stereotypical beliefs (Eagly & Steffan, 1984). Observations of men and women in daily life may reflect many perceptions of the stereotypic beliefs that

women are more communal and less agentic than men (Eagly & Steffan, 1984) in their social roles in society. Studies based on Implicit Personality Theory revealed trait clusters that described women as soft, (e.g. submissive, naïve wavering, squeamish) and males more toward hard trait clusters, (e.g. critical, stern, dominating, shrewd, discriminating) on the potency scale (Ashmore & Del Boca, 1979).

Research on gender and stress has evolved mainly from attempts to explain differences between women and men in psychological distress (Aneshensel & Pearlin, 1987). Women have shown consistently to have certain psychological disorders, particularly depression and anxiety, more than men (Belle, 1980; Comstock & Helsing, 1976; Frerichs, Aneshensel, & Clark, 1981; Myers, Weissman, Tischler, Orvaschel, Gruenberg, Burke, & Regier, 1984; Robins, Helzer, Weissman, Orvaschel, Gruenberg, Burke & Regier, 1984; Weissman & Klerman, 1977; Aneshensel & Pearlin, 1987). According to Aneshensel & Pearlin (1987), the basic understanding that stressors are not random occurrences but are likely to be tied to the group's position in the organization of the society at large and in particular the constellations of social roles occupied by women. Women are perceived more likely as holding lower status and

authority than men (Eagly & Steffen, 1984). Histories of gender roles differ in ways that may influence the stress-provoking nature of current experiences (Aneshensel & Pearlin, 1987).

The 1999 CIRP Freshman Survey indicates differences in gender and stress. Women's level of stress was nearly twice as large as men with 38.8% of women feeling overwhelmed compared to 20% of men (Sax, Astin, Korn, & Mahoney, 1999). Also women are more concerned about adequate financial resources to complete college. Alexander Astin posits it is one of the ironies of the women's movement, that is, as women experience more stress as they take on more responsibilities and commitments (Weiss, 1999). The study suggests that women spend time on goal-oriented and potentially stress-producing activities, such as studying, volunteer work, tending to housework, while men mostly participate in activities that are recreational, e.g., exercising, playing sports, and partying, which may be a possible stress release (Sax, Astin, Korn, & Mahoney, 1999). Women express less confidence in their abilities even though their performance is often better than men ("Female College Students," 2000). Bernstein and Carmel (1991) performed a longitudinal study in an Israeli medical school that cited some specific

gender differences. Males' stress increased over time with regard to academic demands consistent with increased workload, while females were stressed over possible future difficulties in the profession (Bernstein & Carmel, 1991). Even though the number of women in medical school and the profession have increased, traditional sex role socialization is still causal in stress among females (Hilberman et al., 1975; Davidson, 1978; Bernstein & Carmel, 1991). In today's society, women that work may have higher levels of stress particularly in the categories of work and financial difficulties (Jacobson, Aldana, Goetzl, Vardell, Adams, & Pietra, 1996), which may be attributed to the fact that women have only 65% of the earning power of men in most categories regardless of years of employment and tenure on the job.

Chartrand, Camp & McFadden(1992) studied a comparison of gender and race in the areas of self-efficacy, career decision, academic adjustment, and satisfaction with major. Men expressed more concern about discomfort in social situations, adjustment to campus, reading skills, and anxiety about AIDS. Women were more concerned than men about controlling weight. White men showed the highest need for peer pressure to drink followed by Black women.

Previous studies reported women having higher levels of depression than men. A study by Hartley and Kolenc (1988) conceptualized a more specific area referred to as mild depression and they studied its relationship to stress. The results indicated that men tended toward mild depression more than women (Hartley & Kolenc, 1988).

A number of studies have shown differences in gender and illness. Cohen, et al, (1991) found a difference in illness by gender but posits that the difference was probably not due to an actual inequality in number of illnesses, but to the number of illnesses reported. Sex role research has indicated that, despite their greater longevity, women report far more physical illness than men (Davidson-Katz, 1991). This gender differential may result from the socialization of males, which teaches them that sickness is an admission of weakness and not masculine (Davidson-Katz, 1991).

YEAR IN SCHOOL AND STRESS

Stress may change as students progress through school. Gray & Rottman's study (1988) revealed that as academic class standing and age increased, less stress was reported for living away from home and for academic pressures. But, finding a job or career was considered to be of more concern as students progressed through school.

Towbes and Cohen (1996) created the College Chronic Life Stress Survey which focused on the frequency that college students' reported chronic stress. In regards to chronic stress they found that first-year students scored higher than other students (Ross, Niebling, & Heckert, 1999).

As students progress to their second year they may lose the strong social support networks provided to freshmen such as special programs, advising, and dormitory counselors extra attention. Sophomores may not have developed the coping mechanisms used by older students to deal with college stress (Allen & Hiebert, 1991). Therefore, just when their college tasks are becoming more demanding, sophomores have fewer resources for managing stress and anxiety.

TYPES OF SCHOOLS

The Carnegie Foundation has grouped American colleges and universities on the basis of the institutions' missions and educational functions (Carnegie Foundation, 1987). Changes in classifications may be necessary due to continued changes in higher education and increased student enrollment but Carneige Classification (1987) holds to the basic classification definitions.

Liberal Arts School

Liberal Arts schools are primarily undergraduate colleges that are organized and managed as a collegial system. The leadership emphasizes collective responsibilities and shared power and status differences are de-emphasized (Birnbaum, 1988). They lean more toward student orientation (Astin & Change, 1995). Most of the student population attend full time, are traditional age, and are required to live in residence halls unless they live in town with parents or relatives. Some students are third generation attendees.

Comprehensive School

Comprehensive Universities offer baccalaureate programs, awarding one-third of all bachelors' degrees in the country (Astin & Change, 1995) and, with few exceptions, graduate education through the master's degree (Carnegie Foundation, 1987). The administration is more diffused and decentralized. It may be more fragmented with special interest groups that compete for influence and resources. A quarter of the students live in residence halls and apartments, half commute, and the rest rent older houses in the community (Birnbaum, 1988).

Research School

Research Universities offer a full range of baccalaureate programs, are committed to graduate education

through the doctorate degree, and give high priority to research (Carnegie Foundation, 1987). They receive annually many millions of dollars in federal support for research and development and award at least 50 Ph.D. degrees each year. Birnbaum (1988) describes this type as an organized anarchy where teachers decide if, when, and what they want to teach as well as students deciding if, when, and what to learn. Teaching loads are low and more oriented toward research (Astin & Change, 1995), with much of the undergraduate classes being taught by teaching assistants or in large lectures. Scholarly productivity is the key to promotion, tenure, and advancement. In-state students that are in the top half of their high school class are admitted, but there are rigorous performance expectations which may lead to high attrition rates in the freshmen year (Birnbaum, 1988). Students live how and where they choose and are not closely monitored. This may cause students to be more vulnerable to social isolation and feelings of anonymity (Whitman, Spendlove, & Clark, 1984; Kalsner, 1991). Many subcultures are formed, such as athletes, radicals, partygoers, and student government politicians as well as religious and ethnic groups. According to Carnegie Commission on Higher Education what can accompany a large institution can be a loss of personal

attention to students, greater administrative complexity, and less personal interaction with faculty. (Whitman et al, 1984; Kalsner, 1991).

Institutional size interacts with institutional objectives (Chickering, 1969; 1974). Small colleges usually have clear salient objectives with coherent purpose and practice. Larger schools, even with explicit institutional purposes, develop small units with distinctive atmospheres (Chickering, 1969; 1974).

SUMMARY

It is clear from the literature that stress affects our physiological and psychological health. It has been correlated with chronic disease and depression. The stress response in the human body acts as a protection to keep the body in homeostasis. Stress may be experienced in different forms, both positive and negative, and is usually dependent on the individual's personality and cultural background as to how it affects them. Theories postulate as to what causes stress but the common fundamental aspect is change. As life events unfold one may experience numerous changes throughout the course of their lifetime. Developing into young adulthood may mean leaving home for the first time to make choices and decisions on one's own. Attending college is a time of transition into this

particular part of life and it may be a very stressful experience. Depending on the developmental background and academic preparation of students, college may or may not be a stressful time. Some students may not be able to handle so many changes at once and may drop out of school.

Because students are developmentally different and come from various backgrounds the type of academic institution one chooses may need to be considered closely when a person begins the search for the college experience.

CHAPTER III

METHODOLOGY

Subjects

The subjects solicited for this research study were 891 undergraduate students enrolled in the 2000 spring semester at three universities in the state of Oklahoma. The subjects included freshmen, sophomore, junior, and senior students year at school (A), a research institution (n=359), school (B), a comprehensive institution (n=295), and school (C), a liberal arts institution (n=237).

INSTRUMENT SELECTION

The instrument chosen for this study, College Undergraduate Experience Scale (CUES) was developed from a stress survey created in the spring of 1999 and administered to HHP 2603 Total Wellness classes to gain insight to college student's perceived stress. Students were polled for situations that they experienced in college which they perceived to cause stress. The top 15 situations were developed into a small survey that was utilized for the 1999 study. Six statements on the College Undergraduate Experience Scale (CUES) were extrapolated from the College Life Stress Inventory and the remaining items were developed by the researcher and after

consultation with another university researcher. The instrument was designed to assess three areas: stressors related to academic areas, social situations, and environment factors of academic institution. Items were rated on a 5-point Likert scale using the following anchors: 1 = "no stress", 2 = "very little stress", 3 = "somewhat stressful", 4 = very stressful, and 5 = extreme stress. The goal of the College Undergraduate Experience Scale was to assess a significant number of the experiences that pertain to academic life that could affect contemporary college students.

PRELIMINARY PROCEDURES

Instrument Reliability

A pilot test was done to determine the reliability of the College Undergraduate Experience Scale (CUES). Students enrolled in five sections HHP 2603 - Total Wellness were administered the College Undergraduate Experience Scale (n = 117). Two sections of the course (n = 43) were also selected for a pre-test and post-test administration. The test was administered twice with the sessions separated by one week. The internal consistency reliability the pre-test was $\alpha = .8668$ and for the post-test it was $\alpha = .8799$. The test-retest reliability was $\alpha = .8668$.

Data Collection Preparation

Phone calls were made to cooperating professors at Oklahoma State University requesting permission to use a portion of regularly scheduled class time to administer the survey. With the help of the registrar at Southern Nazarene University, classes were selected and professors were phoned for permission to administer the survey. The chair of the Department of Kinesiology and Health Studies at the University of Central Oklahoma made the arrangements with professors for data collection in classes at the their university.

OPERATIONAL PROCEDURES

The researcher with assistance from three students administered the College Undergraduate Experience Survey (CUES) (see Appendix E) in seven classes from School (A); Agricultural Economics, Agricultural Education, Plant Science and Finance. Data was collected on Monday, Thursday and Friday, the week of May 1, 2000.

On Tuesday, May 2nd, 2000 the College Undergraduate Experience Scale (see Appendix E) was administered to nine classes at School (B). Classes used for data collection were Wellness and Positive Lifestyle, Physical Education Activity, Sports Lab, Consumer Health, and Adapted Physical Education.

The College Undergraduate Experience Scale (CUES) (see Appendix E) was administered to ten classes at School (C) Monday, Wednesday, and Thursday the week of May 8th. Classes utilized for data collection were Lifetime Wellness, Botany, Sociology, Biblical Literature, English Literature and Business Administration and Marketing.

The researcher or her agent gave the subjects a detailed verbal briefing outlining the scope of the study and informed them that their participation was voluntary and not required. Participants at School (C) were given an Informed Consent Statement. (See Appendix D). The participants were assured of confidentiality, that the choices on the instrument were their own perceptions, and the final results would be reported on a group basis. Students were asked to return the completed survey to the assigned box by the professor's desk.

STATISTICAL ANALYSIS

Responses to each question on the instrument were analyzed using 2 X 3 X 4 analyses of variance (ANOVAs) with gender at two levels (male and female), school at three levels (the three universities), and school classification at four levels (freshman, sophomore, junior, and senior). Each dependent variable was analyzed for significant main

effects. For school and year in school, main effects and, when a significant F-ratio was present, Tukey's HSD was used for mean comparisons. All statistical tests were performed at the 0.05 level of significance.

CHAPTER IV

RESULTS AND DISCUSSION

The purpose of this investigation was to determine if there were differences in perceived stress among college undergraduate students. Using the College Undergraduate Experience Scale (CUES), comparisons were made regarding type of school, gender, and school classification.

Each question on the instrument was analyzed using a 2 X 3 X 4 analysis of variance (ANOVA) with gender at two levels (male and female), school at three levels (the three universities), and school classification at four levels (freshman, sophomore, junior, and senior). Each dependent variable was analyzed for significant main effects. For type of school and school classification, main effects and, when a significant F-ratio was present, Tukey's HSD was used for mean comparisons.

The following demographic characteristics are presented in Table 1: age, gender, and school classification.

4 X 2 X 3 ANOVA Results - Main Effect of School

Table 2 presents the significant ANOVA results for the main effect of school. For each dependent variable, the

Table 1

Age, class, and gender demographic information.

Variable	School		
	(A)	(B)	(C)
AGE			
\bar{X}	21.4	23.3	20.6
s	3.18	6.12	3.00
Class			
Fr. (n)	49	79	53
So. (n)	76	54	89
Jr. (n)	118	60	62
Sr. (n)	93	84	27
Other (n)	13	12	3
Gender			
M (n)	196	95	123
F (n)	154	197	110

three school means are shown along with the significant F-ratio from the ANOVA for that main effect.

Results and Discussion for Hypothesis 1

Hypothesis one stated that there would be no significant difference in perceived stress scores among undergraduate students by type of university. Since 23 out of 30 dependent variables revealed significant differences among the schools, this hypothesis was rejected.

Table 2

*Means and significant F-ratios for the main effect of school.

	(A)	(B)	(C)	F-ratio
Q1	3.150 ^{a,b}	3.115 ^a	3.295 ^b	5.810
Q2	3.685 ^a	3.410	3.797 ^a	9.841
Q3	3.922 ^a	3.624 ^b	3.797 ^{a,b}	11.267
Q4	3.319 ^a	3.463 ^a	3.705	8.078
Q5	2.513 ^a	2.424 ^a	2.814	8.878
Q10	1.745 ^a	1.383	1.595 ^a	16.392
Q11	2.721 ^{a,b}	2.403 ^a	2.844 ^b	9.358
Q14	2.039 ^a	1.953 ^a	2.295	5.866
Q15	1.796 ^a	1.590	1.857 ^a	7.129
Q16	2.087 ^{a,b}	2.081 ^a	2.342 ^b	6.764
Q17	1.694 ^{a,b}	1.549 ^a	1.878 ^b	9.528
Q18	2.017	2.417 ^a	2.371 ^a	10.248
Q19	1.592 ^a	1.593 ^a	1.287	10.215
Q20	1.813 ^a	2.037	1.496 ^a	14.309
Q22	1.846	1.549 ^a	1.443 ^a	16.597
Q23	2.234	1.976	1.674	23.513
Q24	2.245 ^a	2.044 ^a	2.030 ^a	4.246
Q25	3.053	2.169	1.589	76.045
Q26	2.466	1.919 ^a	1.844 ^a	26.504
Q27	1.875	1.701 ^a	1.608 ^a	6.574
Q28	1.841	1.536	2.603	62.176
Q29	1.872	1.661	2.388	30.087
Q30	3.398 ^a	3.403 ^a	2.919	8.289

*Pairs of means with like superscripts are not significantly different using Tukey HSD Test ($p > .05$).

School (C) had higher stress scores on 11 out of the

23 significant dependent variables. The items for which there were higher perceived stress scores were: amount of homework, grades/g.p.a., writing a major term paper, parents' expectations, adjustment to new place and people, dating, and peer pressures. These stressors represent two issues: academic and social. Two other significant stressors were rules and regulations and lack of privacy. School (C) is a private liberal arts institution that is organized in a collegial system. There are many extracurricular activities available for students which may account for increased academic stress, especially if students are not careful in time management. School (C) is a private institution and could mean a significantly higher cost for an education, which may be causal in students experiencing pressure from parents to be successful academically. The majority of students at (C) are from a four state educational region comprised of different church districts, so many students have a religious background. This could influence their stress regarding dating and peer pressure issues as well as adjustment to new places and people. Many students are from other states and, therefore, are quite a distance from their homes and families. Because School (C) has a religious affiliation there many rules and regulations that students must adhere

to; one of which requires living in campus housing. This may explain the higher stress scores for rules and regulations as well as lack of privacy.

School (A) is a large research institution and, consequently, the largest in this particular study. As mentioned earlier, OSU has graduate assistants that teach a number of classes and tenure-track faculty have research requirements to fulfill. The size and type of school may account for the fact that students at (B) scored highest in perceived stress. The eight significant items were: final exams week, time commitment to Greek fraternity, sorority, club, or other organization; size of classes, instructor friendliness, confrontation with professor(s), understanding international instructors, convenient office hours of professors, and staff friendliness. It is understandable that Schools (A) and (C) were the most different of the three schools. The collegial institutions are noted for having a family atmosphere among administrators, faculty, staff, and students. The large institution may not afford the same familial atmosphere. Students from (A) were significantly different than students from (C) and (B) for perceived stress and understanding international instructors. It may be that students at (A) encounter more international instructors

and graduate teaching assistants than the other two schools. Both (A) and (B) were different than (C) for stress and finding your way around campus which is likely due to the larger campuses.

School (B) is a large comprehensive university that is comprised mostly of commuting students who may still live at home or attend school while working full-time jobs. There were only three areas that (B) students showed more stress than the other two schools' students: registration process, commuting to campus, and parking. Again, the higher stress scores may be due to lack of convenience from not living on campus as well as the time constraints from commuting and employment.

Overall it appears that School (B) students are the least stressed of all of the students at the three schools. Out of the 30 items on the instrument, (B) students were more stressed than (A) students on only two items and seven more than (C) students. Also it appears that (C) students were the most stressed of all of the students at the three institutions. The results indicated that the three schools were significantly different in students' perceived stress scores with distinctive areas that stood out for each school.

The findings may be of importance to students as they

are planning their future education. Higher education institutions are different in their administration and atmosphere. Some are more student oriented than others, but some schools, even though they may not be as student oriented, may allow students more independence and decision making. High school counselors and faculty may need to be actively involved in helping students research the different types of schools and what they have to offer. From this study it could be suggested that while still in high school, students may want to learn more about decision making in life skills and a variety of real life situations. By the time students reach their senior year in high school many have fulfilled the requirements for graduation and do not have full days of coursework. It may be of benefit for high schools to bring representatives, such as professors, students, as well as recruiters from different schools to give orientation seminars for high school students.

College administrators may need to review the objectives of their student orientation programs and consider restructuring them somewhat, especially on the larger campuses, to include more mentoring programs. Liberal arts schools, most of which are private institutions, are more student oriented and have extensive

student orientation programs.

4 X 2 X 3 ANOVA Results - Main Effect of Gender

Table 3 presents the significant ANOVA results for the main effect of gender. For each dependent variable, the two gender means are shown along with the significant F-ratio from the ANOVA for that main effect.

Table 3

Means and significant F-ratios for the main effect of gender.

	male	female	F-ratio
Q1	3.1184	3.2408	4.856
Q2	3.4855	3.6768	8.184
Q3	3.6368	3.9261	17.266
Q4	3.3801	3.5512	4.550
Q7	3.1594	3.4013	10.869
Q16	1.9928	2.2978	16.632
Q17	1.5435	1.8330	13.799
Q18	2.1425	2.3406	5.633
Q28	2.0531	1.8395	12.988

Results and Discussion of Hypothesis 2

Hypothesis two stated that there would be no significant difference in perceived stress scores among undergraduate students by gender. Since 9 out of 30 dependent variables revealed significant differences between males and females, this hypothesis was rejected.

The results revealed that out of the 9 significant dependent variables females were more stressed on 8 of the variables. The questions were: amount of homework, grades/G.P.A., final exams week, writing a major term paper, financial difficulties, adjustment to new place and people, homesickness, registration process, and rules and regulations of campus. The only question on the instrument for which males were more stressed than females was question 28, rules and regulations of campus. Both males and females were significantly stressed with academic items and financial difficulties, but neither were as stressed regarding adjustment to new place and people, homesickness, registration process, and rules and regulations. Still, females indicated they were more stressed regarding homesickness and adjustment to new place and people. Numerous studies have reported college females being more stressed with academic pressures and adjusting to school environment but there is no agreement among scholars as to why. Further studies need to be done to investigate this phenomenon further.

4 X 2 X 3 ANOVA - Main Effect of Class

Table 4 presents the significant ANOVA results for the main effect of class. For each dependent variable, the

four classification means are shown along with the significant F-ratio from the ANOVA for that main effect.

Table 4

*Means and significant F-ratios for the main effect of class.

	Freshman	Sophomore	Junior	Senior	F-ratio
Q7	3.1271 ^{a,b,c}	3.1918 ^{a,c}	3.1958 ^{b,c}	3.5490	4.763
Q17	1.8729 ^a	1.8402 ^{a,b}	1.6125 ^{b,c}	1.5588 ^c	5.500
Q18	2.5635	2.2283 ^{a,b}	2.1417 ^{a,c}	2.1373 ^{b,c}	7.563
Q19	1.6740 ^a	1.3653 ^b	1.4542 ^{b,c}	1.6127 ^{a,c}	6.609
Q20	1.6575 ^{a,b}	1.6835 ^{a,c}	1.8292 ^{b,c,d}	1.9951 ^d	4.412
Q25	2.0331 ^a	2.3349 ^{a,b,c}	2.4542 ^{b,d}	2.5882 ^{c,d}	6.209
Q28	2.0331 ^{a,b,c}	2.0868 ^{a,d}	1.9333 ^{b,d,e}	1.7647 ^{c,e}	3.881
Q29	2.0994 ^{a,b}	2.1050 ^a	1.8292 ^{b,c}	1.7794 ^c	4.698
Q30	3.4278 ^{a,b,c}	3.1142 ^{a,d}	3.0917 ^{b,d}	3.4951 ^c	4.844

*Pairs of means with like superscripts are not significantly different using Tukey HSD Test ($p > .05$).

Results and Discussion of Hypothesis 3

Hypothesis three stated that there would be no significant difference in perceived stress scores among undergraduate students by school classification. Since 9 out of 30 dependent variables revealed significant

differences among the four classification, this hypothesis was rejected.

This study investigated whether stress changes as students go through college. Nine of the dependent variables showed significant differences regarding school classification. Question 7 regarding financial difficulties revealed a progressive increase in stress scores with each classification. Many freshmen students are on their own for the first time, are just beginning to learn about financial responsibility, and have less worry. Managing finances may become more difficult each year. The possibility of dating and developing relationships as well as the cost for textbooks and materials may increase stress at the higher level classes. For added stress, seniors are faced with job attainment as well as the changes and expenses of relocation after graduation.

For classification, there were regressive differences in stress scores for homesickness and registration process. This is considered to be typical as students adjust to the college environment.

There was also a progression of increased stress for understanding international instructors and commuting to campus. As students progress through school they gradually take higher levels of courses wherein the

possibility of having international instructors might make difficult material even more difficult to understand. The progressive stress scores for commuting may be due to students being weary of driving to school especially by the time they reach their senior year. The cost of commuting may be more burdensome in the later undergraduate years as well.

Regarding rules and regulations of campus and lack of privacy, the sophomores were significantly different than juniors and seniors, but the biggest difference was reported between freshmen and seniors. This may be due to freshmen being required to live in campus housing at OSU and, along with required housing at SNU, the freshmen also have curfew. The sophomores were actually the most stressed on both of these variables. There is a need for further investigation to find a rationale for these results.

Freshmen and seniors had the highest stress scores for parking, and seniors were different than both sophomores and juniors. There are numerous parking violations that students encounter while in school. This may also be due to freshmen adjusting to campus environment and seniors tiring of the campus environment.

Most of the findings indicated freshmen and seniors to have the highest perceived stress scores. This may be due to freshmen and seniors experiencing a life changing process during their first and last year of school.

CHAPTER V

SUMMARY, FINDINGS, CONCLUSIONS, AND RECOMMENDATIONS

Summary

The purpose of this study was to determine if there were any differences in college undergraduate students' perceived stress based on the type of school they attend, their gender, and school classification. A total of 891 undergraduate students were administered the College Undergraduate Experience Scale (CUES) during the first two weeks of May, 2000. The CUES was formulated with a Likert scale rating of perceived stress with 1 being no stress and 5 being extreme stress. The students were asked to reflect on the whole semester as they rated their perceived stressors.

Findings

The findings of this study may add to the existing body of knowledge of stress and college students. Differences were noted between the genders and among the classifications but the findings regarding type of school are of particular importance.

H₀₁: There would be no significant difference in perceived stress scores among undergraduate students

by type of university.

Using a 4 X 2 X 3 analysis of variance (ANOVA), significant differences were found among schools, therefore the null hypothesis was rejected.

Ho2: There would be no significant difference in perceived Stress scores among undergraduate students by gender. There were significant differences between the genders, therefore the null hypothesis was rejected.

Ho3: There would be no significant difference in perceived Stress scores among undergraduate students by classification in school. There were significant differences among the four undergraduate classes, therefore the null hypothesis was rejected.

The Tukey's HSD test was used for all mean comparisons. Overall the School (B) had the fewest number of significant stressors when compared with Schools (A) and (C), while (C) had the highest number of stressors.

For gender, overall females were more stressed than males which coincides with other studies and literature. There were statistically significant differences found for perceived stress among the four undergraduate student classes. Freshmen and seniors appeared to be the most stressed.

Conclusions

Within the limitations of this study, it can be concluded that schools may need to reevaluate orientation programs as well as require stress management courses that included information regarding gender differences. Also parents may want to investigate all aspects of colleges and universities before decisions are made as to where their children will attend school.

Recommendations

The following recommendations are made regarding future studies with college students and stress.

1. Replicating this study could be done with community colleges and junior colleges.
2. A subsequent study might focus on the differences in the way students choose to cope with stress. Even though there have been other studies which included college students and the ways in which they cope with stress, it does not appear that a comparison has been made among students at differing types of schools.
3. Further studies could investigate any correlation between student stress and how many times students were sick and/or visited a doctor or the student health clinic.
4. Since student attrition is an important issue for college administrators, it may be important to investigate perceived stress and the students' decision to drop out of school.
5. Further study of student stress could be done by comparing perceived stress at different points in a semester as well as across semesters to determine if changes occur within students.

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APPENDIX A

OKLAHOMA STATE UNIVERSITY
INSTITUTIONAL REVIEW BOARD APPROVAL

Oklahoma State University
Institutional Review Board

Protocol Expires: 5/1/01

Date: Monday, May 01, 2000

IRB Application No: ED00264

Proposal Title: A COMPARATIVE STUDY OF PERCEIVED STRESS AMONG UNDERGRADUATES

Principal
Investigator(s):

Susan Robinson
916 S. Pine
Stillwater, OK 74074

Steven Edwards
432 Willard
Stillwater, OK 74078

Reviewed and
Processed as: Exempt

Approval Status Recommended by Reviewer(s): Approved

Signature:

Carol Olson

Carol Olson, Director of University Research Compliance

5/2/00

Date

Approvals are valid for one calendar year, after which time a request for continuation must be submitted. Any modifications to the research project approved by the IRB must be submitted for approval with the advisor's signature. The IRB office MUST be notified in writing when a project is complete. Approved projects are subject to monitoring by the IRB. Expedited and exempt projects may be reviewed by the full Institutional Review Board.

APPENDIX B

SOUTHERN NAZARENE UNIVERSITY
INSTITUTIONAL REVIEW BOARD APPROVAL

Southern Nazarene University

CHARACTER | CULTURE | CHRIST

July 25, 2000

Susie Robinson
1417 S.W. 77th Terrace
Oklahoma City, OK 73159

RE: Research Submission #00-5-1

Dear Ms. Robinson,

The Institutional Review Board (IRB) reviewed your research request on May 1, 2000. The IRB has approved your research submission. Your submission is approved as presented to the IRB. Any changes made to this project must again be presented to the IRB for approval prior to performing research.

Please note that the IRB must be notified in writing once the research is complete. You may contact the IRB at (405) 491-6360 with any questions or visit our web site at www.snu.edu. Good luck with your research project.

Sincerely,



Marcy H. Hamiter
IRB Member

MARKING **100** YEARS
1899-1999

INSTITUTIONAL REVIEW BOARD

6729 Northwest 39th Expressway Bethany, Oklahoma 73008 405-491-6360 Fax: 405-491-6375
www.snu.edu

APPENDIX C

UNIVERSITY OF CENTRAL OKLAHOMA
APPROVAL FORM



UNIVERSITY OF
CENTRAL
OKLAHOMA

84

Office of Sponsored Research & Grants

04/20/00

Dr. Steven W. Edwards
Applied Health and Educational Psychology
Willard Hall 432
Oklahoma State University
Stillwater, OK 74078

Dear Dr. Edwards:

The Institutional Review Board has reviewed your proposal "A Comparative Study of Perceived Stress Among Undergraduate Students." pursuant to the University's exempt review procedures. It has been determined that this research would not constitute a risk to the participants beyond those of normal, everyday life, except in the area of privacy. Privacy has been adequately protected by the confidentiality procedures of the project. Therefore, the use of human subjects has been approved.

The approval is for a period of twelve months from this date. Should any of the research protocol change you will need to resubmit an application to the IRB for further review before proceeding.

When the project terminates please submit a brief report describing the use of human subjects and the results. Beyond twelve months a progress report and a request for re-approval must be submitted.

A copy of your application and this letter will remain on file with the OSG&R IRB. Please contact Dr. Radke (974-3493) if you have any questions. Please accept my best wishes for the success of your project.

Sincerely yours,

William J. Radke, Ph.D.
Assistant Dean of Research

Cc Susan Robinson, M.A.

APPENDIX D
INFORMED CONSENT STATEMENT

INFORMED CONSENT STATEMENT

I hereby authorize or direct Ms. Susie Robinson or associates of her choosing to perform the following procedure:

Administer a paper and pencil instrument which assesses selected Opinions of stress in college life. The instrument takes approximately 10 minutes to complete and I understand that some of the questions might address personal matters. No names will be associated with the responses and no other identifying information will be required other than the subject's: gender, age, residency and classification in school. Although there are no known risks associated with answering the questions on the instrument, I understand that I may withdraw my participation without penalty at any time. It is hoped that this research will help in the understanding of stress in college life.

This is done as a part of an ongoing investigation entitled "Comparative Study of Undergraduate Student Stress." The purpose of this research is to investigate the determinants of stress in the lives of college students. I understand that my participation is voluntary, that there is no penalty for refusal to participate, and that I am free to withdraw my consent and participation in this project at any time without penalty.

I may contact Ms. Sharon Bacher at telephone number (405) 744-5700 should I wish further information about the research. I may also contact her at University Research Services, 203 Whitehurst Hall, Oklahoma State University, Stillwater, OK 74078. I may also contact the investigator, Ms. Susie Robinson, at (405) 744-5507 or at 103 Colvin Center, Oklahoma State University, Stillwater, OK 74078

APPENDIX E

COLLEGE UNDERGRADUATE EXPERIENCE SCALE

College Undergraduate Experience Scale

Your participation in this study is voluntary and you may decline to participate by simply not answering the questions. If you decline, return the blank questionnaire and answer sheet to the instructor.

Directions: Listed below are experiences from many parts of collegiate life that you may have faced this school year. For each statement indicate your perceived level of stress by darkening the appropriate place on the answer sheet. DO NOT MARK ON THIS PAGE.

① = no stress ② = very little stress ③ = somewhat stressful ④ = very stressful ⑤ = extreme stress

- ① ② ③ ④ ⑤ 1. Amount of homework
- ① ② ③ ④ ⑤ 2. Grades/G.P.A.
- ① ② ③ ④ ⑤ 3. Final exams week
- ① ② ③ ④ ⑤ 4. Writing a major term paper
- ① ② ③ ④ ⑤ 5. Declaring a major or career choice
- ① ② ③ ④ ⑤ 6. Time management
- ① ② ③ ④ ⑤ 7. Financial difficulties
- ① ② ③ ④ ⑤ 8. Lack of sleep
- ① ② ③ ④ ⑤ 9. Being chosen by fraternity, sorority, or club
- ① ② ③ ④ ⑤ 10. Time commitment to Greek fraternity, sorority, club, or other organization
- ① ② ③ ④ ⑤ 11. Expectations from parents
- ① ② ③ ④ ⑤ 12. Difficulties with roommate
- ① ② ③ ④ ⑤ 13. Breaking up with boyfriend/girlfriend
- ① ② ③ ④ ⑤ 14. Dating
- ① ② ③ ④ ⑤ 15. Peer pressures
- ① ② ③ ④ ⑤ 16. Adjustment to new place and people
- ① ② ③ ④ ⑤ 17. Homesickness
- ① ② ③ ④ ⑤ 18. Registration process
- ① ② ③ ④ ⑤ 19. Finding your way around campus
- ① ② ③ ④ ⑤ 20. Commuting to campus
- ① ② ③ ④ ⑤ 21. Getting in preferred classes
- ① ② ③ ④ ⑤ 22. Size of classes
- ① ② ③ ④ ⑤ 23. Instructor friendliness
- ① ② ③ ④ ⑤ 24. Confrontation with professor(s)
- ① ② ③ ④ ⑤ 25. Understanding international instructors
- ① ② ③ ④ ⑤ 26. Convenient office hours for professors
- ① ② ③ ④ ⑤ 27. Friendliness of staff
- ① ② ③ ④ ⑤ 28. Rules and regulations of campus
- ① ② ③ ④ ⑤ 29. Lack of privacy
- ① ② ③ ④ ⑤ 30. Parking
- 31. Age: Place age in SEC. space on form and darken the dots
- 32. Gender: 1 = Male 2 = Female
- 33. Live with parents? 1 = Yes 2 = No
- 34. Year in School: 1 = Fr. 2 = So. 3 = Jr. 4 = Sr. 5 = Other

VITA

Susan Elaine Robinson

Candidate for the Degree of

Doctor of Education

Thesis: A COMPARATIVE STUDY OF PERCEIVED STRESS AMONG
UNDERGRADUATE STUDENTS

Major Field: Applied Educational Studies

Biographical:

Education: Graduated from Capitol Hill High School, Oklahoma City, Oklahoma in May 1973; received Bachelor of Arts degree in Fitness and Wellness Management from Southern Nazarene University, Bethany, Oklahoma in May 1994; received Master of Arts degree in Education from Southern Nazarene University, Bethany, Oklahoma in May 1996. Completed the requirements for Doctor of Education degree in Applied Educational Studies at Oklahoma State University, Stillwater, Oklahoma in December, 2000.

Experience: Office Manager, School of Music, Southern Nazarene University, Bethany, Oklahoma, December 1988 May 1997; Adjunct faculty, Southern Nazarene University, Bethany, Oklahoma, 1992 - 1999; Graduate Teaching Assistant, Oklahoma State University, Stillwater, Oklahoma, 1997 - 2000.

Professional Organizations: American Alliance for Health, Physical Education, Recreation, and Dance; Association for the Advancement of Applied Sports Psychology; National Wellness Association.