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Student Stress: An Analysis of Stress Levels Associated with Higher Education in the Social Sciences

Darcy A. Keady
Utah State University

STUDENT STRESS: AN ANALYSIS OF STRESS LEVELS ASSOCIATED WITH

HIGHER EDUCATION IN THE SOCIAL SCIENCES

by

Darcy A. Keady

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ABSTRACT

Student Stress: An Analysis of Stress Levels Associated

with Higher Education in the Social Sciences

by

Darcy A. Keady, Master of Science

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Major Professor: Randall M. Jones
Department: Family and Human Development

A university sample of 238 undergraduate and graduate students between the ages
of 19 and 58 completed the Student Stress Measure. Specifically, upper-division
undergraduate students and clinical/nonclinical graduate students in social science
programs (FHD, Social Work, Sociology, Psychology) were measured for stress level
differences due to their particular academic requirements.

Results indicate that, overall, graduate students are more stressed than
undergraduate students. Of the graduate students, Sociology students were most stressed
in terms of Lifestyle stress scores. The comparison of clinical and non-clinical graduate
students shows that there is no difference in stress levels. The Psychology and MFT
graduate student comparison indicates that Psychology students are more stressed than
MFT students on the Lifestyle Scale only. Fourteen program requirements are related
positively to stress levels. The Academic Stressors Scale was the only stress measure
that yielded statistical significance for gender, employment status, and marital status.
Age correlated negatively with the Events Scale.

Confounding factors, such as sample size, are addressed. Suggestions for future research are provided.

(81 pages)

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CHAPTER I

INTRODUCTION

> A student, apparently distraught about the poor evaluation he had received on his master's thesis, walked into the Engineering Building at San Diego State University on Thursday afternoon and shot three faculty members to death before surrendering to police, authorities said. (Perry & Malnic, 1996, p. A1)

Relatively little research has been conducted on the assessment and identification of stressors specific to educational settings and their impact on students (Cahir & Morris, 1991). In addition, there has not been a thorough attempt to examine whether there are specific program stresses in graduate education, which, if identified, might be reduced by changes in program policies and protocol.

Some pressure in academic programs clearly enhances productivity and learning (Greenberg, 1992). However, too much stress is likely to detract from learning (Heins, Fahey, & Leiden, 1984). There are also thresholds for stress that could be detrimental to adequate psychological and physical functioning (Brantley & Jones, 1993).

Students are likely to encounter a variety of hassles and stressors that are relatively uncommon to non-students (Crandall, Priesler, & Aussprung, 1992.). Some of those stressors are homework, tests, studying for tests, writing term papers, and class participation. Additionally, dramatic changes take place when a young person enters college. For the first time in many students' lives, they must assume responsibilities they never had to before. Time must be set aside for shopping, cooking, cleaning, laundry, and a myriad of other routine chores. Further, students must be self-motivated to keep up with classwork and studies, which must fit between all of their other activities (Greenberg, 1996). Schoolwork seems excessive, and it seems that not enough time is

available to accomplish it (Greenberg, 1996). The fear of flunking is always present (Greenberg, 1996).

However, in addition to daily activities of college life, college students experience changes in their living arrangements, friends, and overall environment. Younger college students are also confronted with several important tasks during their college life. These tasks include development of competence, management of emotions, development of new interpersonal relationships, and development of integrity, identity, and autonomy (Greenberg, 1996).

Older college students may experience multiple roles such as employee, student, and family member, which may cause overload. Not only are many older college students working, but many have family responsibilities as well. It is difficult to balance all the roles and responsibilities an older college student encounters (Greenberg, 1996). In addition to family, job, and schoolwork responsibilities, the older student who supports a family struggles with the financial investment required to complete an education.

The degree of personal adjustment required to meet internal and external demands influences student health, performance, and productivity (Polson, Piercy, & Nida, 1996). In addition, poor student adjustment may negatively affect faculty-student interactions.

Physiological or psychological responses to stress, if chronic or frequently occurring, can result in illness or disease (Greenberg, 1992). Many students complain of headaches and exhaustion (Greenberg, 1996). Other students experience negative cognitions which affect how rational they may act and feel (Saunders & Balinsky, 1993).

Burnout, which is a depletion of an individual's energetic resources, manifests itself when students overextend themselves for a period of time (Garden, 1991). Students contend with emotional and physical exhaustion throughout their time in college. Typically, graduate students express a great deal of concern about the fatigue they experience throughout their professional training (Polson & Nida, 1998).

Graduate programs that contain classroom work and research (i.e., thesis, dissertation) with a clinical training component create perhaps more potential stress than traditional graduate programs (Polson & Nida, 1998). Information is needed so faculty in clinical training programs may become more aware of the needs of their students as they cope with the stressors of training while simultaneously managing the demands of a graduate student lifestyle (Polson et al, 1996).

Purpose of the Study

Every program of study is stressful to some degree. The purpose of this study was to determine whether stress levels differ across "similar" undergraduate and graduate fields of study. Identification of specific academic stressors was illuminated as well.

Hypotheses

Ho1: There is no difference between undergraduate and graduate student stress levels.

Ho2: There is no variation in stress levels across graduate programs.

Ho3: There is no difference between non-clinical and clinical graduate student stress levels.

Ho4: There are no differences in stress levels between students in separate clinical programs (i.e., MFT, Psychology).

Ho5: There is no relation between program requirements and student stress levels.

Ho6: There is no association of gender, employment status, or marital status with student stress levels.

Ho7: There is no relation between age and student stress levels.

CHAPTER II

REVIEW OF LITERATURE

Whether one studies student stress or some other area related to stress, stress has many properties that are similar across human situations. Stress may or may not be detrimental. Some stress is needed for motivation and can be useful to individuals who have responsibilities and/or deadlines to meet. However, there are thresholds for stress that, once crossed, can be detrimental to adequate psychological and physical functioning (Brantley & Jones, 1993). For example, "change" is a normal and inexorable feature of every level of social life, but for some people, the quality of change is potentially damaging (Pearlin, 1989). Populations in a developmental transition, such as teenagers leaving home for the first time to attend college, are thought to be especially vulnerable to occurrences and effects of stress (Towbes & Cohen, 1996). Research has shown that the adverse effects of stress are detrimental to society, both in terms of individual suffering and in relation to the economic burden of medical expenses, absenteeism, and occupational, faculty, or student injuries (Abouserie, 1994). Stress is a challenging process (Pearlin, Menaghan, Lieberman, & Mullan, 1981) and researchers are striving to identify and define stress in order to help sufferers better manage its effects (Vlisides, Eddy, & Mozie, 1994).

Definitions of Stress

It seems as if everyone knows what stress is, but there are varying definitions of stress. For the most part, researchers agree that stress is a transactional process between person and environment (Crandall et al., 1992) that includes stressors, stress mediators, and stress outcomes (Pearlin, 1989). Stress is also understood as the result of an imbalance between demands and the adaptive capacities of the mind and body

(Abouserie, 1994). A stressed individual has physical, mental, and/or emotional reactions resulting from the subject's response to environmental tensions, conflicts, and tensions, conflicts, and pressures (Abouserie, 1994). Some common stress reactions include fatique, negative thoughts, and anxiety (Hinds & Burroughs, 1997).

Because of its importance in both physical and psychological health, a tremendous amount of research has focused on the issues surrounding the concept of stress (Crandall et al., 1992) and characteristics of stress in certain contexts. Stressors can be thought of as events, problems, or pressures that potentially produce stress (Abouserie, 1994). Similarly, they are defined as events or conditions that demand adjustments beyond the normal wear and tear of daily living (Gadzella, 1994).

Stressors, when combined with other stressors or prolonged, can become chronic. Chronic stress is conceptualized as the accumulation of ongoing strains (Towbes & Cohen, 1996) or enduring problems or conflicts (Pearlin, 1989). Many people experience chronic stress in terms of role overload, interrole conflict, and role captivity (Pearlin, 1989). Role overload means that demands on energy and stamina exceed the individual's capacities. Interrole conflict refers to the incompatible demands of multiple roles, especially roles of family and work. Role captivity refers to reluctantly participating in an essential role such as taking on extra responsibilities as a spouse of a college student. Stressors generally occur in clusters and therefore become significant (Pearlin, 1989). If stress continues, the body's resources for fighting stress may be depleted and the individual enters the exhausted stage (Gadzella, 1994).

Exhaustion or emotional exhaustion is noted in the literature as the last stage of the stress cycle. Seyle (1956) discussed the three stages of stress as being (a) the alarm reaction (b) the resistance phase, and (c) exhaustion. These stages are the body's attempt to restore equilibrium (Selye, 1956). Overextension of the self manifests as a severe loss of energy that cannot be renewed (Garden, 1991). This condition of overextension, along

with psychological and emotional distress or strain, is known as "burnout" (Garden, 1991).

Some of the possible consequences of burnout are productivity problems, reduction in motivation and effectiveness, and in some instances a "sense of failure" (Saunders & Balinsky, 1993). Burnout is treated like stress (Garden, 1991) and the same prescriptions for stress are recommended to alleviate the symptoms of "burnout." Stress and burnout are used interchangeably in our society; technically, however, burnout is an outcome of prolonged stress.

There are similar definitions of stress, all relating to stressors, stress moderators (e.g., exercise, sleep, healthy foods, family support, recreation, etc.), and stress outcomes. When stressors persist and moderators fail, an individual will experience burnout. The consequences of burnout are manifest in problems with productivity and motivation.

Stress symptoms manifest themselves emotionally, behaviorally, cognitively, and physically (Vlisides et al., 1994). Table 1 contains the various symptoms and reactions associated with stress.

Table 1

Physical, Emotional, Cognitive, and Behavioral Outcomes of Stress

PHYSICAL	Depression	Poor abstract thinking
Fatigue	Apprehension	Nightmares
Nausea	Feeling overwhelmed	
Muscle tremors	Intense anger	BEHAVIORAL
Headaches	Irritability	Changes in activities
Grinding/clenching teeth	Aggravation	Withdrawal
Weakness		Emotional outbursts
	COGNITIVE	Suspiciousness
EMOTIONAL	Blame others	Communication change
Anxiety	Confusion	Increased/decreased appetite
Guilt	Poor attention	Increased drug/alcohol use
Grief	Poor decision-making	Inability to rest
Denial	Increased/decreased alertness	Body complaints
Fear	Poor concentration	Pacing
Sense of uncertainty	Memory problems	Hyper-alert
Loss of emotional control	Poor problem solving	

Emotional symptoms of stress include anxiety, guilt, grief, denial, fear, a sense of uncertainty, and a loss of emotional control. Depression, apprehension, a feeling of being overwhelmed, intense anger, irritability, and aggravation are also included as emotional stress symptoms.

Behavioral symptoms of stress manifest as changes in activity, withdrawal, emotional outbursts, suspiciousness, change in usual communication abilities, and loss or increase of appetite. In addition, the beginning of an increase of alcohol consumption or other harmful substances, the inability to rest, nonspecific body complaints, pacing, and being hyper-alert to the environment are also behavioral symptoms.

Cognitive symptoms of stress appear as placing the blame of errors on others, confusion, poor attention, and poor decision-making abilities. Heightened or lowered alertness, poor concentration, memory problems, poor problem-solving ability, poor abstract thinking, and nightmares are included as well.

Physical symptoms of stress include fatigue, nausea, muscle tremors, twitches, and headaches. It also includes visual difficulties, grinding or clenching of one's teeth, and weakness (Vlisides et al., 1994).

Physical reactions to stress are similar regardless of the variety of stressors that may occur. The body's stress response is the same for biological, physiological, sociological, and philosophical stressors (Greenberg, 1992). The body responds to stress by increasing heart rate, blood pressure, and muscle tension, increasing the production of glucose and serum cholesterol, and decreasing protein stores, digestive processes, and T-Lymphocytes (Greenberg, 1992). There is substantial evidence that stressful life events and perceived stress are associated with changes in immune functioning (Cohen, Tyrrell, & Smith, 1991). Physiological responses to stress, if chronic, can result in illness or disease (Greenberg, 1992). Stress can exacerbate or imitate the onset of illness such as tiredness or tension headache (Brantley & Jones, 1993). Headaches are the most

prevalent of the stress-related symptoms and daily minor stress as well as major life events may be associated with exacerbation (Brantley & Jones, 1993).

<center>Daily Hassles and Life Events</center>

A distinction in the literature is made between daily hassles and life events as sources of stress. "Hassles" refer to the irritating, frustrating, distressing demands and troubled relationships that one encounters daily (Dohrenwend & Shrout, 1985). These chronic strains are reported more than life events as major sources of stress (Towbes & Cohen, 1996).

Life events as stressors are discrete and occur within a relatively brief time interval, such as a few months to a year (Dohrenwend & Shrout, 1985). Holmes and Rahe (1967) are most noted in the literature for their Social Readjustment Rating Scale which measures the number of recent life events experienced by an individual. The more life events that occur, purportedly the more potentially stressed an individual will be. However, it is now common practice to distinguish events by their qualities, such as their desirability and their normative character. Research needs to establish that events in fact are events and not indicators of chronic hardship. Stress may vary on events due to people's social and economic statuses such as age, life stage, gender, race, ethnicity, occupational status, and economic class. Because event inventories allow us to see only a segment of one's life and not their history, researchers sometimes ignore the more extended life circumstances of which the event may be a part (Pearlin, 1989).

In summary, it is more likely that events and chronic strains converge to produce stress (Pearlin et al., 1981). Sometimes events lead to chronic strain or chronic strains lead to events (Pearlin, 1989). Either way, it is important to look at both context and perception when examining an individual's stress level.

Theories of Stress and the Stress Process

Stress has been conceptualized by several models that are similar in describing the stress process. The stress process has typically been examined in terms of stressors, stress mediators, and stress outcomes (Pearlin, 1989). One of the more well-known stress models is the ABCX model (Hill, 1949). Simply stated, A represents the stressor(s), stimulus, or event. B equals an individual's resources to cope with the stressor. C stands for the individual's definition or perception of the event. And X represents the outcome of ABC, or the crisis. Stress occurs when resources are weak or absent, and perceptions of the event are negative.

The double ABCX model (McCubbin & Patterson, 1983) differs from Hill's model in that stressors and strains are discussed in terms of building or piling up over time. The individual or family must readapt to the stressors and strains by using or renewing resources and reorganizing perceptions of the stressors.

Dollahite (1991) created the ABCDXYZ Resource Management Model of crisis and stress. This model applies to individuals in a family context and also to families in general. The ABCDXYZ model is thought to be both descriptive and prescriptive of the process that occurs in many individuals and families and can be useful in crisis and stress management (Dollahite, 1991). Dollahite highlights the demands (D), coping (Y), and adaptive behaviors (Z) families utilize to cope with the stressor(s). The model represents the interaction between the stressor, the demands of the situation, the coping resources, and how the situation is defined by the individual/family (Dollahite, 1991). The ABCDXYZ model is similar to Lazarus and Folkman's (1984) transaction model of stress whereby the level of stress experienced depends on how a person appraises the situation and adapts to it -- there is a transaction between personal resources and the situation.

In conclusion, several stress models concur with and describe the general stress process of stressors, moderators, and outcomes. Emphasis is given to the regulation of stress outcomes through the use or activation of personal and/or physical resources.

General Student Stress

Relatively little research has been conducted on the assessment and identification of stressors specific to educational settings and their impact on students (Cahir & Morris, 1991). With stress conceptualized as the need to adapt to life events or transitions, it stands to reason that college students can be expected to experience a great deal of stress (Greenberg, 1992). The essential elements in the study of stress are the presence of similar types and levels of stress among people. Students are exposed to similar social and economic conditions, they are encumbents in similar roles, and they come from similar situational contexts (Pearlin, 1989). Students are likely to encounter a variety of hassles and stressors that are relatively uncommon to non-students (Crandall et al., 1992). They also experience stress in relation to developmental tasks associated with the transition to college. These tasks include achieving emotional independence from family, choosing and preparing for a career, preparing for relationship commitment and family, and developing an ethical system (Dohrenwend & Shrout, 1985). More specifically, college students get jobs, revise personal habits, change residence or living conditions, change type or amount of recreational or social activities, and are faced with decisions about drug/alcohol use and sexual behavior (Greenberg, 1992).

College students experiencing a great deal of life stress contract more illnesses and disease than students experiencing less stress (Greenberg, 1992). In addition to physical illness, they also experience psychological stress. It is reported that, after undergraduate freshman, graduate students are the next most numerous users of campus mental health services (Halleck, 1976).

Transitional and social stressors affect college students to varying degrees. However, within the college setting, it appears that academic stressors affect students more adversely than social factors (Abouserie, 1994; Crandall et al., 1992; Dohrenwend & Shrout, 1985; Heins et al., 1984). Some of the most stressful academic factors consistently identified throughout the literature are exams, studying for the exams, too much to do, the amount of material to learn, the self-imposed need to do well, and writing essays, papers, and projects (Abouserie, 1994). Stress seems to be related to any type of college work; however, significant levels of stress seem synonymous with graduate-level training (Polson & Nida, 1998).

In summary, college students encounter many stressors related to personal, academic, and social factors (refer to Table 2). These stressors, when combined and prolonged, can cause distressing physical and psychological symptoms in students.

Graduate Student Stress

Stress levels in graduate students remain relatively unexplored in the research

Table 2

Stressors Experienced in College

PERSONAL	ACADEMIC
Emotional independence from family	Studying for exams
Developing an ethical system	Amount to learn
Decisions about sexual behavior	Essays
Changing residents or living conditions	Projects
Revising personal habits	Professional development
Little energy	Choosing a career
Financial strains	Exams
	Too much to do
SOCIAL	Self-imposed need to do well
Preparing for relationship commitment	Papers
Changing type or amount of recreation	Evaluations by professors
Interpersonal difficulties	
Decisions about drug/alcohol use	

literature (Hudson & O'Regan, 1994). What is apparent is that graduate students lack time and energy to accomplish everything that is demanded of them (Sori, Wetchler, Ray, & Niedner, 1996). Although there may be program-specified differences, graduate education and professional development are part of an arduous process that produces pressures perceived as stressful across programs (Heins et al., 1984).

Intense anxiety in graduate students often arises from two areas: that associated with increased academic expectations and performance, and the social stressors of developing or maintaining interpersonal relationships (Heins et al., 1984). Most graduate students report that graduate school, however, is a time of personal growth and development and is, overall, more rewarding than stressful (Sori et al., 1996). Despite stressors, students seem to acknowledge that the process of personal development eventually outweighs the anxiety and stress endured throughout their training. Unfortunately, for many people, admission to graduate school marks the beginning of major, unavoidable life changes (Rodolfa, Reilley, & Kraft, 1988) and new academic expectations that cause stress and anxiety. The first year is usually a risk period for physical and psychological problems (Goplerud, 1980). Too much stress is likely to detract from learning, and stressing students to the point of decompensation is not a viable goal for any program (Heins et al., 1984). Stressed students develop negative cognitions about their abilities and performances (Saunders & Balinsky, 1993). Graduate students put in long hours to meet program requirements; therefore, leisure activities and social lives suffer (Polson & Nida, 1998). Students are continually overloaded and stressed without personal time to unwind or reevaluate cognitions (Saunders & Balinsky, 1993).

Stress in graduate students has been related to poor academic performance, coping skills, family relations, and to eventually dropping out (Saunders & Balinsky, 1993). Many who pursue graduate education, sooner or later, begin to wonder if the education

and degree will offer them all the benefits that they and society anticipate (Rocha-Singh, 1994). Time constraints, financial strains, current job outlooks, academic workloads, and interpersonal difficulties with faculty, peers, or significant others may create a situation that is often overwhelming to the graduate student (Rocha-Singh, 1994).

Being in graduate school often means being economically dependent at a time when many peers are earning their own living. Some graduate students work which leaves very little time for anything other than program requirements. However, working students are not necessarily more stressed than nonworking students. In fact, many working students report less stress (Hudson & O'Regan, 1994). This may be due to adequate income and having associations in a nonacademic atmosphere.

Cahir and Morris (1991) reported that tests, grades, time demands, professors, classroom environments, and career success influence graduate student stress. Students are concerned about feedback from professors, getting help from faculty members, and their own status and input in the department (Cahir & Morris, 1991). Students also worry about fulfilling responsibilities at home and school (Polson et al., 1996).

Female graduate students tend to express more stress than male students (Cahir & Morris, 1991; Cushway, 1992; Gadzella, 1994; Hudson & O'Regan, 1994). Female students report more stressful life events than male students (Crandall et al., 1992) due to multiple roles and role accumulation (Gerson, 1985). However, along with the increased stress, many female graduate students report increased benefits as well as more disadvantages (Gerson, 1985).

In conclusion, graduate students experience increased worry and demands in multiple areas of their lives. These chronic stressors can lead to overextension and exhaustion. It is difficult for graduate students to remain competent while experiencing physically and emotionally diminished levels of functioning. Academic expectations and maintaining social relationships become overwhelming. Consequently, graduate students

may suffer cognitive and/or physical difficulties that result in lower performance, poor self-concept, poor health, and, at times, abnormal behavior. Activities, such as exercising and vacations, that might relieve some graduate student stress, cannot be utilized due to constraints to time, energy, and financial resources. Graduate students generally remain in a constant state of stress throughout their academic program (Polson et al., 1996).

Graduate students suffer from negative cognitions, overload, high expectations, and social pressure (Saunders & Balinsky, 1993). These factors, in combination, cause students stress and anxiety; however, negative cognitions and overload seem to be major issues for students overall. Overload seems to be particularly important for older students, females, and those who report multiple roles such as working full-time and having significant responsibilities at home (Saunders & Balinsky, 1993). Negative cognitions are important in distinguishing between stressed and nonstressed students regardless of age, sex, or responsibilities (Saunders & Balinsky, 1993). Cognitively, stressed students question their ability to do graduate work, tend to dwell on the negative comments on tests and papers, feel as though other students are brighter than themselves, feel like a failure when they do not do well on a paper or test, think that they are "wrong" when others disagree with them, minimize their accomplishments, and question their decision to attend graduate school (Saunders & Balinsky, 1993). Graduate students also feel guilty if they try to relieve overload by taking time off from studying to do something for themselves. In addition, students think that the cost of graduate school deprives them of normal daily pleasures, that the demands of graduate school promote an unhealthy lifestyle, that giving up much or all of a social life is required to succeed in school, and that it is not fair that significant others should have to suffer because of the student's choice to attend graduate school (Saunders & Balinsky, 1993). It is also important to students that the professors and other students like them (Saunders &

Balinsky, 1993). However, the process of being evaluated by professors and others adds to the cognitive stress students already experience.

In summary, stressed graduate students experience distorted cognitions. Negative cognitions are important in distinguishing between stressed and nonstressed students. Stressed students experience many negative thoughts that can be detrimental to their academic and social functioning.

<div align="center">Clinical Programs and Stress</div>

There seems to be a need for studies investigating the effects of clinical programs on the graduate students who are enrolled in them (Polson et al., 1996). Graduate programs that contain coursework and research (i.e., thesis, dissertation) with a clinical training component create perhaps more potential stress than nonclinical (traditional) graduate programs (Polson & Nida, 1998). Clinical disciplines such as psychology, social work, and family therapy seek to turn students into clinicians. This type of graduate work entails changing the student therapist, not just developing his/her knowledge base or clinical skills (Polson & Nida, 1998). This personal growth and change is a complicated process brimming with multiple stressors (Aponte, 1992). Clinical demands require students not only to discover their personal conceptualization of the therapy process, but also to develop additional clinical skills within a short amount of time (Polson & Nida, 1998). Adding more demands to an already heavy workload may increase all program and non-program demands (Polson & Nida, 1998). The clinical student may feel overwhelmed in all areas of life, especially within the program.

Clinical programs are organizations which provide program generated stressors. The degree of personal adjustment to internal and external program stress influences student health, performance, and/or productivity (Polson et al., 1996). Certainly, what is stressful for one student may not be necessarily stressful for another (Rodolfa et al.,

1988). However, clinical students, overall, report similar stressors inherent to psychotherapeutic training (Cushway, 1992). The most frequently reported stressors by graduate trainee health professionals are poor supervision, travelling, deadlines, lack of finances, moving, amount of academic work, uncertainty about own capabilities, too much to do, course structure and organization, disruption in social network and support, client difficulties, and relationships with senior staff (Cushway, 1992). Trainees report more stress in their second and third years of training than in their first year (Cushway, 1992) due to increased client loads. Men generally evaluate their training more favorably than women (Tibbits-Kleber & Howell, 1987). These psychotherapeutic stressors can be discussed in terms of three areas: clinical stressors, institutional stressors, and personal stressors (Solway, 1985).

Clinical Stressors

Clinical stressors (refer to Table 3) include learning new psychotherapy and psychodiagnostic techniques, using different clinical skills consecutively during a work day, and regularly confronting forensic and psychopharmacological issues. Additional stressors involve responding to different supervisors and different styles of supervision, sensing and coping with competitiveness from other interns and trainees, and integrating the conflicting needs of developing professional autonomy while accepting the status of being a trainee and supervisee (Solway, 1985).

Trainees report that the most stressful client behaviors include suicidal statements, expression of anger toward the therapist, severely depressed clients, apathy, lack of motivation, and premature termination (Rodolfa et al., 1988). Physical assaults and suicide attempts by clients are, respectively, the number one and two clinical stressors for student trainees (Kleespies, Penk, & Forsythe, 1993). It has been suggested that the mental health system often relies on relatively inexperienced clinicians-in-training to

Table 3

Clinical Program Stressors

Developing clinical skills	Developing psychodiagnostic techniques
Confronting forensic issue	Confronting psychopharmacological issues
Responding to different supervisors	Coping with competitiveness/ other interns
Developing professional autonomy	Working with suicidal patients
Dealing with angry clients	Physical assault potential by client
Program demands and requirements	Learning how to manage all types of clients
Intense supervision	Institutional stressors
Little time for personal interests	Coping with personal and academic demands

work with some of the most impaired and difficult clients, those clients for whom there is often a great risk of suicide (Kleespies et al., 1993). Clinicians generally deal with suicide about 40% of the time, whether the client has completed, attempted, or has ideation (Kleespies et al., 1993). However, trainees have some "protective" advantage of being in training because they process events and follow the direction of supervisors regarding suicidal clients. Unfortunately, the supervisory relationship does not appear to be sufficient to prevent clinical trainees from registering a significant degree of stress due to client suicidal behavior (Kleespies et al., 1993).

Overall, supervision is a positive and necessary experience for trainees, but it is also another clinical stressor. Students desire to appear competent to their trainers and adopt the role of a professional; however, their developing clinical skills are exposed and scrutinized by supervisors (Rodolfa et al., 1988). Trainees are often perceived as being unseasoned and relatively unskilled; therefore, they may feel less confident and more sensitive about their skills. Some feel like they must prove themselves, which may increase stress (Rodolfa et al., 1988).

Institutional Stressors

Besides developing clinical skills, learning how to manage all types of client problems, and undergoing intense supervision, clinical graduate students also encounter

institutional stressors. These include stressors related to the practice site such as relationships with colleagues, the goals of the institution, the sources of authority, day-to-day red tape and administrative responsibilities, intake procedures, the treatment offered by the institution, progress notes, reports, who is who, the availability of office space, medical and professional insurances, parking, and office supplies (Solway, 1985).

Personal Stressors

Personal stressors experienced by graduate clinicians are categorized as geographical, social, and psychological factors. These include little time for personal adjustment to a new practicum site, moving to a new city, new social networks, changing residence, and earning little or no money (Solway, 1985).

To summarize, professional development in a clinical setting is a stressful experience for graduate students. The application of newly acquired skills, working with suicidal clients, feigning competence in new situations, and being continually supervised and evaluated is stressful.

Summary

A tremendous amount of research has focused upon issues surrounding the concept of stress because of its importance to both physical and psychological health. Stress is conceptualized as a process involving stressors, stress mediators, and stress outcomes. Several models detail this process.

The available literature presents student stress as a natural part of the transition to college. Students develop autonomy, and strive to balance academic, physical, cognitive, and social demands. These issues produce stress.

Graduate school seems to produce more stress than undergraduate work due to greater expectations for professional development. Graduate students often complain of their lack of time for anything other than academic requirements.

Graduate students who are enrolled in clinical training programs seem to have the least amount of time or energy available. Clinical students' days are typically filled with academic demands and their nights are spent working with clients. They experience the same stressors as graduate students in nonclinical programs; however, clinical students have the added responsibilities of caring for difficult clients and acting competently before competency is truly achieved.

A certain amount of pressure in academic training enhances learning. Students expect to experience some stress as they work toward graduation. On the other hand, too much stress is detrimental to students' academic performance, self-esteem, and physical well-being.

The purpose of this study was to document stress levels in students across similar fields of study. Specifically, stress differences in graduate programs were explored.

CHAPTER III

METHODS

The purpose of this chapter is to describe the methods used to test the research hypotheses. The research sample, measures, procedures for data collection and processing, and data analysis are included. The following hypotheses were tested:

Ho1: There is no difference between undergraduate and graduate student stress levels.

Ho2: There is no variation in stress levels across graduate programs.

Ho3: There is no difference between non-clinical and clinical graduate student stress levels.

Ho4: There is no difference in stress levels between students in separate clinical programs (i.e., MFT, Psychology).

Ho5: There is no relation between program requirements and student stress levels.

Ho6: There is no association of gender, employment status, or marital status with student stress levels.

Ho7: There is no relation between age and student stress levels.

Sample

A convenience sample of 238 Utah State University students responded to the Student Stress Measure, a response rate of 92%. Twenty percent were males ($n = 48$), 80% were females ($n = 190$). The age within the sample ranged from 19 to 58, with most students being between the ages of 20 and 25. The median age of respondents was 24.

Students were mostly majoring in Family and Human Development (FHD), Sociology, Psychology, and Social Work. Fifty-four percent ($n = 128$) were from Family

and Human Development, 14% (n = 34) from Sociology, 12% (n = 29) from Psychology, and 18% (n = 43) from Social Work. Of the social science majors, 5% (n = 11) were Marriage and Family Therapy MS-level clinical students, 6% (n = 15) were school psychology/clinical psychology students. Most students (78%, n = 184) were obtaining an undergraduate degree. Thirteen percent (n = 33) were working toward a master's degree. Nine percent (n = 21) were enrolled in doctoral programs.

Many of the students were employed, but mostly part-time (62%, n = 162). Twenty-six percent (n = 62) were not employed. Eleven percent (n = 27) were full-time employees.

About half of the students in this sample were single (55%, n = 131), while 42% (n = 100) were married; 3% (n = 6) were divorced. Only 16% (n = 38) had one or more children living with them.

Measurement

The Student Stress Measure (SSM) is a questionnaire that contains multiple measures that assess student demographics, student stress levels, and academic requirements (see Appendix A). The SSM consists of eight sections.

Prior to addressing the research hypotheses in this study, the psychometric properties of the SSM were investigated by pilot testing the instrument on 30 students (see Appendix B). Specifically, three sections (Burnout, Cognitive Stress, Demands/Coping) of the SSM were examined for internal consistency using Cronbach's alpha. All sections of the measure were also correlated with one another to determine, as much as possible, construct validity.

The pilot study identified ways to revise the SSM to enhance reliability and validity. Only one or two questions from each section that did not contribute any new or needed information for the construct measured were deleted in the final draft (see

Appendix B). In addition, the Likert scales on the final version of the SSM were recoded so that inverse relationships would become positive: high scores on the seven measures were related to high stress scores.

The relationships of each scale of the SSM seem to behave as expected according to the alpha coefficients and the interscale correlation coefficients. The SSM appears to be a valid measure of stress. It is concluded that the SSM is adequate for purposes of this study.

Demographic Information

Section A ascertains demographic information about the respondents, their families, and their academic programs. Fifteen questions gather information about gender, age, area of study, prior clinical experience, employment, marital status ("single" means never married), and whether or not students have children. This section also contains a list of 26 possible program requirements. Students selected the program requirements that were applicable to their program of study. It is noted that students consistently checked appropriate requirements for their programs of study.

Burnout

Section B contains questions regarding changes in the students since they began their current program of study. This section is an adapted version of the Burnout Scale by Freudenberger and Richelson (1980). This section was titled "Change" on the questionnaire instead of "Burnout" to disguise the purpose of the questions. It was believed that students would be less sensitive to the nature of the questions if they perceived the questions to be about normal changes in themselves rather than symptoms of burnout or possible depression.

The reported reliability coefficient (Cronbach alpha) from the pilot study for the Burnout Scale is 0.88. One item was eliminated from this section due to its non-

applicability. Hence, the revised alpha coefficient becomes 0.90. This scale stands as a 14-item measure. Questions are lettered a - n with a 5-point Likert response format. The response categories range from "little to no change (0 - 20%)" to "a great deal of change (81 - 100%)." Validity correlation coefficients range from $r = 0.19$ (Academic Stressors) to $r = -0.67$ (Student Life), see Appendix B.

Lifestyle

Section C consists of nine questions regarding student lifestyle. Students' healthy responses to stress are measured using a subscale of the Lifestyle Quiz (author and source unknown). The response format is a 4-point Likert scale: never true, usually true, seldom true, always true. This measure was included because of the importance of the last question: "I am happy with my life." The research literature indicates that even though college is stressful, students feel that the efforts they make now in school are, overall, rewarding and outweigh the discomforts.

The alpha coefficient from the pilot study for the ten item Lifestyle scale is reported as 0.62. One item was removed from the scale and the revised scale of nine items had a reliability coefficient of 0.63. Validity correlation coefficients from the pilot study range from $r = -0.06$ (Academic Stressors) to $r = -0.56$ (Stress Symptoms), see Appendix B.

Cognitive Stress

Section D assesses students' thoughts about their education using the Cognitive Stress Questionnaire developed by Saunders and Balinsky (1993). This section identifies four constructs: negative cognitions, overload, high expectations, social. The stress literature indicates that significantly stressed students can be identified by the greater number of negative cognitions they possess as compared to other relatively nonstressed students. The response format is a 4-point Likert scale: never true, seldom true, usually

true, always true. A higher score indicates more negative cognitions than a lower score. Saunders and Balinsky (1993) report the internal consistency for this measure, using Cronbach's alpha, as 0.89 ($\underline{n}$ = 225). A sample of 80 students was used for validation of the instrument. Statistical comparisons revealed that the stressed and nonstressed respondents differed significantly on the negative cognition and overload scales for the sample as a whole (Saunders & Balinsky, 1993). The authors cautioned that the instrument, as of 1993, needed further refinement. They stated that the concepts behind each question are empirically valid, however, and the factors do overlap. Saunders and Balinsky (1993) suggested that research with this instrument should include other instruments of stress to evaluate convergent and discriminate validity. Use of this instrument, along with other measures of stress, will contribute to the determination of stress levels in the sample.

The pilot study indicated an alpha coefficient of 0.87 for the original 31 items. Two items were eliminated from the final scale due to low relatedness to the other items within the scale. Twenty-nine items were retained to give the Education scale a reliability of 0.88. Validity correlation coefficients from the pilot study range from $\underline{r}$ = - 0.17 (Lifestyle) to $\underline{r}$ = -0.69 (Coping), see Appendix B.

On the questionnaire, it was decided to disguise the purpose of this section by calling it the "Education" scale rather than by the original title of the Cognitive Stress Questionnaire. It was believed that students, especially clinical students, would be sensitive to the nature of the questions and may, therefore, bias their responses (i.e., social desireability).

Academic Stressors

Section E lists possible academic stressors. Students mark all items that they find stressful, then they circle the most stressful item. The stressors in this section were

extracted from the research literature (Cahir & Morris, 1991; Kohn & Frazier, 1986; Saunders & Balinsky, 1993).

This section originally contained 31 items with an alpha coefficient of 0.89. One item was removed from the final scale to give this section a reliability coefficient of 0.90. Validity correlation coefficients from the pilot study range from r = -0.06 (Lifestyle) to r = 0.51 (Cognitive Stress), see Appendix B.

Demands and Coping

Section F consists of 28 questions related to undergraduate and graduate work. This section was adapted from the Trainee Adjustment to Program Stress (TAPS) scale which was developed to measure lifestyle stress of family therapy trainees (Polson et al., 1996). Specifically, the TAPS scale assesses 2 domains: Lifestyle demands and Coping. Test-retest reliability for the 30-item scale is reported as r = 0.92. Internal consistency is reported as 0.92 using Cronbach's alpha. The response format is a 5-point Likert scale: strongly disagree, disagree, no opinion, agree, strongly agree. The item scores may then be added to obtain a total score. The lowest possible score is a 28. The highest possible score is a 140. The total score on the scale measures the student's degree of lifestyle stress.

The pilot study reports a reliability coefficient of 0.88 for the original 30-item scale. Two items were removed to give the final 28-item scale a coefficient of 0.89. The validity correlation coefficients from the pilot study range from r = -0.44 (Academic Stressors) to r = -0.69 (Cognitive Stress), see Appendix B.

On the questionnaire, this section was called "Student Life" rather than the original name of Trainee Adjustment to Program Stress (Demands and Coping). It was assumed that the title "Student Life" was more consistent with the directions to answer

the questions in terms of opinions about a respondent's life as a student, rather than how the student is adjusting to an academic program.

Stress Symptoms

Section G is a checklist of 41 stress symptoms. Students mark all the symptoms that they have been experiencing since they began their current program of study. This checklist (see Table 2, Chapter 2) provides a means of validating the other sections within the instrument.

The pilot study reports the alpha coefficient for the 41 item scale as 0.84. No items were removed from the final scale. Validity correlation coefficients from the pilot study range from $r = 0.27$ (Academic Stressors) to $r = -0.67$ (Demands and Coping), see Appendix B.

Events

Section H is a checklist of twenty seven life events that can occur in the life of a college student. This scale is an adapted version of the Holmes and Rahe (1967) Social Readjustment Rating Scale. This scale was added to rule out other factors of stress related to social causes and was not included in the pilot study. Reliability and validity evidence is reported as adequate by Holmes and Rahe (1967). This measure correlates positively with a variety of demographic characteristics (gender, age, ethnicity, social economic status).

Procedure

Undergraduate and graduate students within the departments of Family and Human Development, Social Work, Sociology, and Psychology were assessed using the Student Stress Measure (see Appendix A). The Institutional Review Board (IRB) approved this project (see Appendix C).

The 15th week of Spring Semester was chosen as the time of assessment. Students had final exams one week later and, most likely, felt overwhelmed by end-of-semester class requirements. While the timing of assessments (i.e., 15th week) may have elevated student responses, there was no reason to believe that stress levels were differentially elevated across programs.

Upper division undergraduate students enrolled in Psychology 3120 (Abuse and Neglect), Sociology 3500 (Social Psychology), Social Work 4160 (Practice III), 5350 (Social Welfare Policy), 5870 (Advanced Field Practicum), and FHD 4220 (Family Interventions) participated in this study. It was assumed that upper division students would know their program requirements. Graduate students enrolled in Psychology 6150 (Childhood Psychological Disorders) and 6570 (Introduction to Educational and Psychological Research), Sociology 6310 (Sociology of Work and Occupations) and 6230 (Demographic Techniques), and FHD 6030 (Research Methods), 6340 (Contemporary MFT Practice), and 6910 (Close Personal Relationships) were also assessed. These classes were chosen because of the kinds of students enrolled in them. For example, Psychology 6150 contained all the students enrolled in both MS and PhD clinical psychology programs. Classes were chosen out of the Spring Semester class catalog. Permission from professors was obtained 3 weeks in advance. Professors received reminders 3-5 days before the actual survey of classes.

Instructions to the students prior to the completion of the measure were given as: "We are interested in finding out about student stress levels. Please fill out this survey as it relates to your life as a student here at Utah State University. All of the information that you provide is confidential. The questionnaire should take about 10 to 20 minutes. Please make sure you have seven pages. However, don't let the size intimidate you, other students have said it is pretty easy to fill out. Read the instructions carefully for each section. If you have any questions, ask and I'll help you. Thanks for your time."

Students completed the measure in class and returned it to the researcher upon completion. The response rate was 92%; some students decided not to finish the questionnaire once started. Students were assessed approximately the same time of the day.

CHAPTER IV

RESULTS

Reliability

Table 4 summarizes the reliability findings for this sample. Chronbach alpha reliability coefficients range from 0.73 (Lifestyle) to 0.92 (Demands and Coping). Two measures, Demands and Coping (Polson et al., 1996) and Cognitive Stress (Saunders & Balinsky, 1993), yielded the same reliability coefficients as the literature. Three of the measures, Burnout, Lifestyle, and Stress Symptoms, yielded higher reliability coefficients than the pilot study. The alpha coefficients for the Academic Stressors and Life Events Scales were slightly lower in comparison to the pilot study, but remain within acceptable levels for purposes of this study.

The measures used for this study have adequate levels of internal consistency. Estimates are similar or better than what has been reported in the literature.

Table 4

Student Stress Measure: Reliability Information

Measure	$\underline{N}$	Alpha	Min score	Max score	Mean	$\underline{SD}$
Burnout	238	0.90	14	66	30	11.07
Lifestyle	238	0.73	9	28	17	3.99
Cognitive stress	236	0.89	41	113	68	12.28
Academic stressors	238	0.87	0	29	15	6.03
Demands/coping	238	0.92	0	128	81	19.55
Stress symptoms	237	0.91	0	41	12	7.93
Life events	232	0.76	20	845	242	125.41

Table 5

Interscale Correlations for Stress Measures Contained in the SSM, N = 238

	1	2	3	4	5	6	7
1 Academic Stress	1.00	0.20	0.30	0.14	0.26	0.33	0.27
2 Burnout		1.00	0.73	0.60	0.65	0.65	0.40
3 Cognitive Stress			1.00	0.58	0.70	0.55	0.36
4 Lifestyle				1.00	0.55	0.43	0.21
5 Demands and Coping					1.00	0.57	0.36
6 Stress Symptoms						1.00	0.47
7 Events							1.00

Validity

All seven measures of stress within the Student Stress Measure (SSM) were correlated with each other to assess construct validity. Table 5 summarizes the interscale correlations. The coefficients of the SSM are all positively related; as scores on one scale go up, scores on the others increase as well. The coefficients range from $r = 0.73$ to $r = 0.14$. The median coefficient is $r = 0.43$.

The measures of the SSM seem to tap a broad range of the stress construct due to some of the low correlational numbers. Three out of the seven measures (Events, Demands and Coping, Cognitive Stress) were selected for their comparison of validity and reliability.

It is interesting to note that the Burnout and Cognitive Stress Scales yielded higher coefficients when correlated with other stress scales in most cases. The other stress scales yielded lower coefficients, but stress relations are still manifest. For example, the Academic Stressors with Stress Symptoms is $r = 0.33$, or 10% shared variability. The higher the score on Academic Stressors, the higher the score on Stress

Symptoms. Students who experience many academic stressors may also experience more stress symptoms.

The Burnout with Cognitive Stress correlation coefficient is r = 0.73, or 53% shared variability. The higher the Burnout scores, the higher the Cognitive Stress scores. Students who experience much change or feel burned-out also experience many negative cognitions. The pilot study correlation coefficient of r = 0.62, or 39% overlap was similar.

The Burnout with Lifestyle correlation coefficient is r = 0.60 or 36% shared variability. The more changes or burn-out students experience, the more unhealthy their lifestyles may be. The pilot study indicated a correlation coefficient of r = 0.54, or 29% overlap.

The Burnout with Demands and Coping correlation coefficient is r = 0.65, or 42% overlap. The higher the burnout or change scores, then the higher the coping scores, which indicates less coping. The pilot study correlation coefficient of r = 0.68, or 46%.

The Burnout with Stress Symptoms correlation coefficient is r = 0.65, or 42% shared variability. Higher Burnout scores indicate higher Stress Symptom scores. Students who experience much change or burnout experience many stress symptoms. The pilot study correlation coefficient of r = 0.60, or 36% overlap, indicates the same.

The correlation coefficient for Burnout with Events is r = 0.40, or 16%. Higher scores on one scale indicate higher scores on the other. Students who experience more stressful life events will most likely experience more change or burnout.

The correlation coefficient for Cognitive Stress with Lifestyle is r = 0.58, or 34% shared variability. Students who score higher on Cognitive Stress, score higher on Lifestyle. Unhealthy lifestyles may be associated with many negative cognitions.

The Cognitive Stress with Student Life correlation coefficient of r = 0.70, or 49% shared variability, indicates that as students score higher on one scale, they score higher on the other scale. Students who have many negative cognitions may also cope poorly.

The Cognitive Stress with Stress Symptoms correlation coefficient is r = 0.55, or 30% overlap. As scores go up on negative cognitions, scores go up on stress symptoms. Students who experience many negative cognitions may experience more stress symptoms. The pilot study correlation coefficient of r = 0.46, or 21% overlap, indicates this as well.

The Lifestyle with Demands and Coping correlation coefficient is r = 0.55 or 30% shared variability. As scores go up on Lifestyle, scores go up on Demands and Coping. Students who have unhealthy lifestyles may not cope as well as those students who adapt more healthy ways of living.

The correlation of Demands and Coping with Stress Symptoms indicates that as scores go up on one measure, they go up on the other measure. The correlation coefficient is r = 0.57, or 32% shared variability. Students with poor coping may have more stress symptoms. The pilot study correlation coefficient is r = 0.68, or 46% overlap.

The correlation of Stress Symptoms with Events has a coefficient of r = 0.47, or 22% shared variability. Students who experience more stressful life events also experience more stress symptoms.

Use of the SSM for this study seems adequate because of the acceptable comparisons between measures with and without evidence of reliability and validity. The measures work as expected. There is evidence that the seven stress measures are related to each other, as they should be, to support construct validity.

Hypothesis Testing

Hypotheses 1 - 4 and 6 were examined using descriptive statistics and then correlated to check for statistical significance. Hypotheses 5 and 7 were examined using correlation coefficients, as well.

Correlation calculations (point-biserial, Pearson) were chosen because all the assumptions for using inferential statistics (t test) were not met. In particular, the sample was not based on random selection. Without a random sample, generalization to a larger population is inappropriate. Other assumptions for using t tests are the means in each of the population are normally distributed, the population variances are equal, and the individual groups are independent. The t test is robust to the violation of homogeneity of group variances when group sizes are equal. The group sizes in this study were not equal and, in some cases, were very small.

Correlations provide descriptive information about the sample. In addition, squared correlation coefficients provide an effect size of the magnitude of the shared variance between the variables independent of sample size.

Null Hypothesis 1

There is no difference between undergraduate and graduate student stress levels.

To obtain the information in Figure 1, the total mean scores on all seven measures of stress for all graduate and undergraduate students were standardized (z-scores) and then plotted. The figure indicates that graduate students are more stressed than undergraduate students, as indicated by five of the seven measures (Burnout, Cognitive Stress, Stress Symptoms, Demands and Coping, Lifestyle). Undergraduate student scores are greater on the Academic Stressors and Events measures. However, point biserial correlations show statistical significance on the Burnout ($r = 0.18$, $p < 0.01$), Cognitive
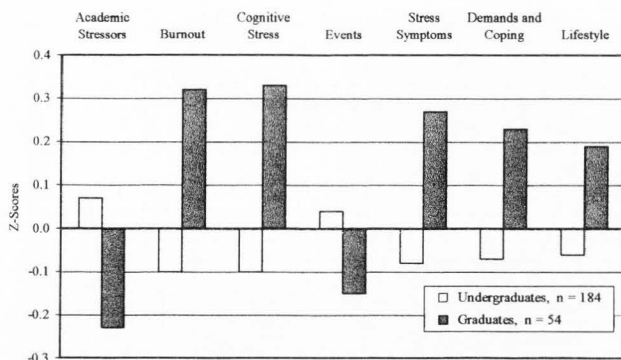
Figure 1. Stress level differences between undergraduate and graduate students.

Table 6

Point Biserial Correlation Coefficients Comparing

Undergraduate and Graduate Student Stress Levels, N = 238

	1	2	3	4	5	6	7
Degree	-0.13	0.18*	0.18*	-0.08	0.10	0.13	0.15*

Note. 1 = Academic stressors, 2 = Burnout, 3 = Cognitive stress, 4 = Events, 5 = Lifestyle, 6 = Demands and coping, 7 = Stress symptoms.
* $p < .05$.

Stress ($r = 0.18$, $p < 0.01$), and Stress Symptoms ($r = 0.15$, $p < 0.05$) Scales only (see Table 6). Nevertheless, the amount of shared variability was fairly small for each comparison, 3%, 3%, and 2%, respectively. Since some differences were found between graduate and undergraduate stress levels, the null hypothesis was rejected.

Null Hypothesis 2

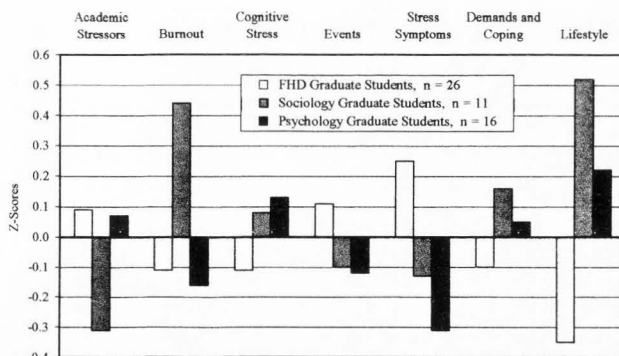There is no variation in stress levels across graduate programs.

Figure 2. Stress levels across graduate programs.

Figure 2 displays the standardized stress scores for each of the seven measures for all graduate students in Family and Human Development (FHD), Sociology, and Psychology. The scores were standardized (z-scores) and then plotted. The figure depicts that Psychology graduate students scored lower on all stress measures when compared to FHD and Sociology graduate students. The FHD graduate students scored higher on Academic Stressors, Events, and Stress Symptoms. Sociology graduate students scored higher on the Burnout, Cognitive Stress, Lifestyle, and Demands/Coping Scales.

Point biserial correlations show that the differences in stress levels for graduate students were statistically significant on the Lifestyle Scale only (refer to Table 7). The correlation coefficient of $r = 0.38$ ($p < 0.05$), or 14.4% shared variability, indicates that this sample of Sociology graduate students have more stress than Psychology or FHD students on the Lifestyle Scale. However, in this case, multiple bivariate correlations are used and, therefore, the alpha level of 0.05 may not be accurate. The alpha level, perhaps, should have been more stringent (0.001) to correct for alpha inflation associated

Table 7

Point Biserial Correlation Coefficients Comparing Stress Levels Across FHD,

Psychology, and Sociology Graduate Programs, $N = 106$

	1	2	3	4	5	6	7
FHD vs Sociology ($\underline{n} = 37$)	-0.20	0.27	0.09	-0.09	*0.38	-0.19	0.12
FHD vs Psychology ($\underline{n} = 42$)	-0.01	-0.00	0.13	-0.12	0.30	-0.26	0.08
Psych. vs Sociol. ($\underline{n} = 27$)	0.18	-0.25	0.03	-0.01	-0.16	-0.10	-0.05

Note. 1 =Academic stress, 2 = Burnout, 3 = Cognitive stress, 4 = Events, 5 = Lifestyle,
6 = Stress symptoms, 7 = Demands and coping.
*$\underline{p} < .05$.

with multiple statistical tests. However, the effect size of 0.38 (14.4%) was larger than

other effect sizes in this group, which would be some indication of stress that is explained

by the FHD and Sociology comparison. The choice was made to reject the null

hypothesis.

Null Hypothesis 3

There is no difference between nonclinical and clinical graduate student stress

levels.

To obtain the information in Figure 3, clinical students in the FHD master's-level

Marriage and Family Therapy program and the Psychology school counseling/clinical

program were compared with nonclinical graduate students in FHD and Sociology

(Social Work does not have a graduate-level program at USU). Total mean scores for

each of the stress measures were converted to z-scores and then plotted. The figure

indicates that nonclinical students obtained higher stress scores than clinical students on

five of the seven measures: Burnout, Events, Lifestyle, Stress Symptoms, and Demands
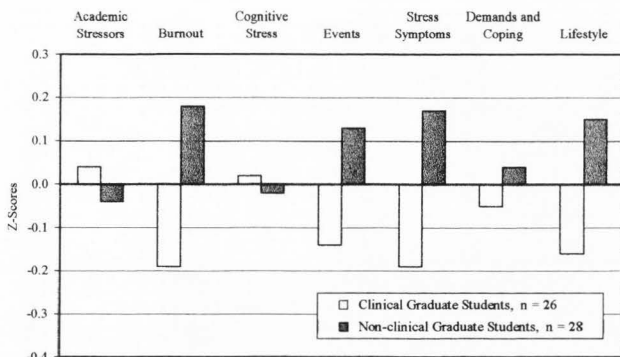
Figure 3. Nonclinical and clinical graduate student stress levels.

Table 8

Point Biserial Correlation Coefficients Comparing Nonclinical and Clinical Graduate

Student Stress Levels, N =54

	1	2	3	4	5	6	7
Clinical vs Non-clinical	0.19	-0.02	0.13	-0.04	0.18	0.05	0.16

Note. 1 = Burnout, 2 = Cognitive stress, 3 = Events, 4 = Academic stressors,
5 = Stress symptoms, 6 = Demands and coping, 7 = Lifestyle.

and Coping. Clinical students scored higher on Academic Stressors and Cognitive Stress

Scales. Point biserial correlations indicate no statistical differences between clinical and

nonclinical students for all seven stress measures (refer to Table 8). The null hypothesis

was retained.

Null Hypothesis 4

There is no difference in stress levels between students in separate clinical

programs (i.e., Marriage and Family Therapy, Psychology).

To obtain the information for Figure 4, clinical students in FHD (MFT students) were compared with Psychology School Counseling/Clinical students. Total scores for each of the stress measures were converted to z-scores and then plotted. The figure indicates that FHD/MFT students scored higher on six of the seven measures. Psychology students scored higher on the Lifestyle measure. Point biserial correlations indicate statistical significance on the Lifestyle Scale (refer to Table 9). The coefficient $r = 0.39$ ($p < 0.05$) indicates shared variability of 15%. Since differences in stress levels were noted across students in clinical programs, the null hypothesis was rejected.

Null Hypothesis 5

There is no relation between program requirements and student stress levels.

All seven stress measures were compared with each program requirement (refer to Table 10). Statistical significance was noted for 14 of the program requirements using point biserial correlations. The coefficients positively relate to stress levels.

Academic Stressors were significantly related to three program requirements (comprehensive exams, essays, projects) as shown in Table 10. The magnitude of shared
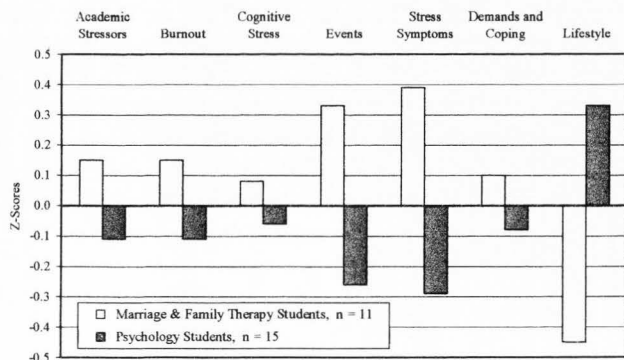

Figure 4. Stress levels across clinical programs.

Table 9

Correlation Coefficients for Comparing MFT and Psychology Clinical Students, N = 26

	1	2	3	4	5	6	7
MFT vs Psychology	-0.13	-0.13	-0.07	-0.30	*0.39	-0.34	-0.09

Note. 1 = Academic stressors, 2 = Burnout, 3 = Cognitive stress, 4 = Events,
5 = Lifestyle, 6 = Stress symptoms, 7 = Demands and coping.
*$p < .05$.

variance ranged from 2% to 3%. The Burnout Scale related to six program requirements:

thesis/dissertation, professional presentations, colloquium attendance, new student

orientation, on call/monitoring clinic messages, assistantships. The shared variability

ranged from 2% to 4%. Only three program requirements (thesis/dissertation, on

Table 10

Correlation Coefficients for Program Requirements and Student Stress Levels, N = 238

	1	2	3	4	5	6	7
REQ01: thesis/dissertation	-0.12	**0.19	**0.18	-0.08	0.07	*0.17	0.12
REQ05: pro. org. involvement	-0.01	0.06	0.03	-0.01	-0.01	*0.13	0.07
REQ06: pro. presentation	0.08	**0.17	0.11	0.03	0.12	0.11	0.09
REQ07: program marketing	-0.01	0.08	0.07	0.08	-0.08	*0.15	0.06
REQ08: colloquium attendance	-0.07	*0.17	0.12	0.14	0.06	*0.15	*0.14
REQ09: student orientation	0.05	*0.16	0.13	0.04	0.09	*0.16	*0.14
REQ10: on call/monitoring	-0.00	*0.16	*0.15	0.02	0.05	*0.16	0.12
REQ14: comprehensive exams	**0.17	0.01	0.07	0.12	0.03	*0.16	0.09
REQ15: exams	-0.03	-0.03	0.01	*-0.14	-0.02	-0.09	0.00
REQ16: essays	*0.14	0.02	0.06	-0.04	0.04	0.03	0.06
REQ17: projects	**0.17	0.02	-0.00	0.02	-0.05	0.10	0.06
REQ21: oral presentations	0.07	0.12	0.07	-0.00	*0.14	0.10	0.05
REQ23: assistantships	-0.04	**0.18	**0.19	0.02	0.12	0.10	*0.15
REQ25: research expectations	0.01	0.11	0.08	0.02	*0.16	0.12	0.12

Note. 1 = Academic stressors, 2 = Burnout, 3 = Cognitive stress, 4 = Events,
5 = Lifestyle, 6 = Stress symptoms, 7 = Demands and coping.
* $p < .05$. ** $p < .01$.

call/monitoring messages, assistantships) were statistically significantly related to Cognitive Stress. The magnitude of shared variability ranged from 2% to 3%.

The Events with Program Requirements correlation showed statistical significance with only one program requirement: exams. Shared variability is 2%. The correlation of Lifestyle with Program Requirements yielded two statistically significantcoefficients: oral presentations in class and research expectations. The magnitude of shared variability ranged from 2% to 3%, respectively. Stress Symptoms were related to seven program requirements: thesis/dissertation, professional organization involvement, program marketing, colloquium attendance, student orientation, on call/monitoring messages, and comprehensive exams. Shared variability ranged from 2% to 3%. Demands and Coping with Program Requirements yielded three statistically significant correlation coefficients, with the amount of shared variability all within 2%. The three program requirements are colloquium attendance, new student orientation, and assistantships.

The program requirements that contributed to statistically significant stress levels were thesis/dissertation, colloquium attendance, new student orientation, on call/monitoring messages to clinic, and assistantships. Since there were statistically significant relations between program requirements and student stress levels, the null hypothesis was rejected.

Null Hypothesis 6

There is no association of gender, employment status, or marital status with student stress levels.

Each independent variable was correlated separately with the seven stress measures using point biserial correlations (refer to Table 11). The number of hours students were employed was used to determine part-time or full-time employment (35

Table 11

Correlation Coefficients for Gender, Employment Status, Marital Status, or Age with

Student Stress Levels

	1	2	3	4	5	6	7
Gender (n = 238)	**0.25	0.07	0.08	0.04	0.05	0.12	0.09
Employment Hrs (n =238)	*-0.13	0.09	0.07	0.02	-0.03	-0.04	0.01
Marital Status (n = 232)	*0.15	-0.01	-0.00	0.01	0.07	0.12	0.05
Age (n = 238)	-0.06	0.07	0.05	*-0.14	0.03	0.06	0.01

Note. 1 = Academic stressors, 2 = Burnout, 3 = Cognitive stress, 4 = Events,
5 = Lifestyle, 6 = Stress symptoms, 7 = Demands and coping.
*$p < .05$. ** $p < .01$.
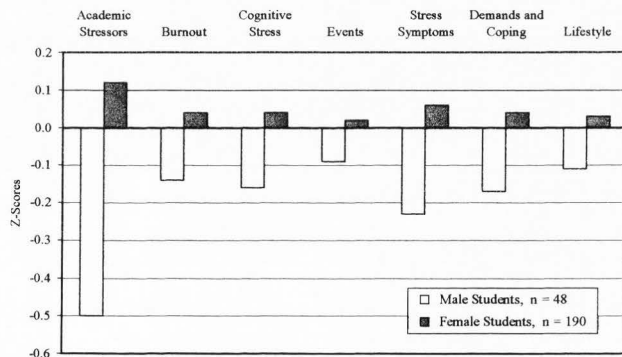
Figure 5. Stress levels for males and females.

hours/week and above was considered full-time employment).

Academic Stressors was the only measure that yielded statistical significance with

gender, employment status, or marital status. The magnitude of shared variability ranged

from 2% to 6%.

Figure 5 displays the standardized stress scores for each of the seven measures for males and females. Females scored higher than males on all seven stress measures. However, only the relation between gender and academic stressors was statistically significant.

Figure 6 displays the standardized scores (z-scores) for each stress measure for unemployed, part-time, and full-time employed students. Unemployed students scored higher on Academic Stressors, Lifestyle, Stress Symptoms, and Demands/Coping than either of the full-time or part-time employed students. Full-time employed students scored higher on the Cognitive Stress Scale. Part-time students scored higher on the Events and Burnout Scales. However, only the Academic Stressors Scale was statistically significant, for which the unemployed students scored highest.

Figure 7 displays standardized scores (z-scores) for marital status and all stress measures. Only married and singles students were included in this comparison. Because the number of divorced participants was so small (n = 6), no meaningful comparison could be made between groups. It has been suggested that divorced individuals could be
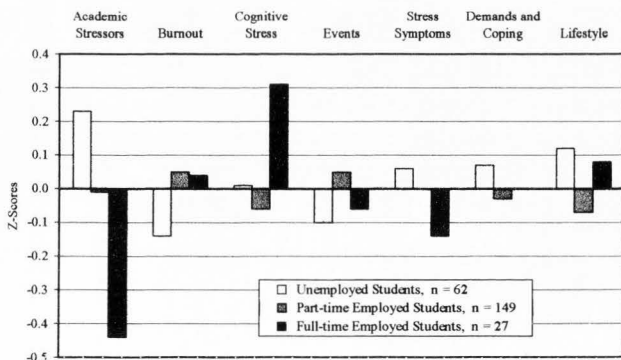
Figure 6. Stress levels across employment status.

combined with the never married group. However, it is believed that divorced persons are different from never married persons in a number of important ways, such as age, life experience, number of children, and coping abilities.

Married students scored higher on the Burnout and Cognitive Stress Scales. Single students (never married) scored higher on the other measures. However, only Academic Stressors was found statistically significant. Single students scored higher on Academic Stressors than married students.

The relations of gender with stress levels, employment status with stress levels, and marital status with stress levels were shown to have some statistically significant results. The null hypothesis was rejected.

Null Hypothesis 7

There is no relation between age and student stress levels.

Age was correlated with the seven stress measures using Pearson correlation. The results are depicted in Table 11 (hypothesis 6). The Events with Age correlation
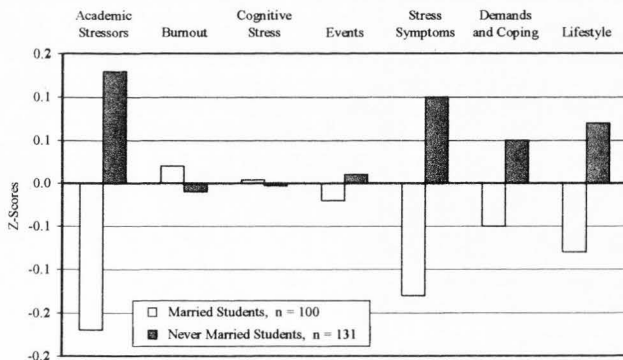
Figure 7. Stress levels across marital status.

coefficient of $r = -0.14$ ($p < 0.05$) was statistically significant. The magnitude of shared variability is 2%. The null hypothesis was rejected.

Summary

Six of the seven hypotheses were rejected. Hypothesis 3, no difference between nonclinical and clinical graduate students, was retained. Overall, graduate students are more stressed than undergraduate students. Of the graduate students, the Sociology students were most stressed in terms of their Lifestyle scores. The comparison of clinical and nonclinical graduate students shows that there is no difference in stress levels. The Psychology and MFT graduate student comparison indicates that Psychology students are more stressed than MFT students on the Lifestyle scale only. Fourteen program requirements are related positively to stress levels (see Table 9). The Academic Stressors Scale was the only measure that yielded statistical significance for gender, employment status, or marital status. Age correlated negatively with the Events Scale.

CHAPTER V

DISCUSSION

Every program of study is stressful to some degree. The purpose of this study was to determine whether or not student stress levels were different across social science programs. Clinical programs were an important part of this study, as well.

In this study, it was found that graduate students were more stressed than undergraduate students. Graduate students manifested stress in terms of burnout, negative cognitions, and stress symptoms. Graduate students, in general, seem to have more academic, family, and employment responsibilities than undergraduate students. There are also stressors associated with graduate-level professional development that undergraduates may not experience. Higher academic expectations and more program requirements may contribute to higher levels of stress for graduate students. Saunders and Balinsky (1993) describe graduate stress as stemming from negative cognitions, overload, high expectations, and social pressure.

Graduate students within various programs seem to experience similar types of stress. However, it is noted that in this study, Sociology graduate students tend to relax less, be less happy, sleep more poorly, and take less time for themselves. Generally, students who have less healthy lifestyles are more stressed. It is not known if the graduate Sociology program has a stress management component; however, most college students have had a basic health class whereby they learn of health-promoting behaviors. FHD and psychology courses tend to emphasize normal development and mental health issues, which may influence healthier behaviors in these students.

There were no stress level differences found between clinical and nonclinical graduate students within this sample. Stress levels were comparable. The research literature discusses the extra time and energy clinical students put forth to handle

coursework, research expectations, supervision, clients, and developing clinical skills (Aponte, 1992; Polson & Nida, 1998; Solway, 1985). However, nonclinical students are generally involved in many extra hours of research and projects, teaching, or internships. The one major difference between the two types of graduate programs is that the clinical students may be responsible for managing client safety (i.e., suicide). However, no stress differences are manifested between the clinical and nonclinical students in this study. One might suggest that the clinical students have developed coping skills to deal with the stress brought on by significantly distressed clients. That may in turn influence stress measure scores.

One of the clinical programs tested for this study was the USU Marriage and Family Therapy (MFT) program. This program requires more master's-level credit hours than many other master's-level programs on campus (AAMFT Commission on Accreditation for Marriage and Family Therapy Education, 1994). A thesis is also required. It would seem logical that the MFT students would be more stressed than other students due to the extra coursework and clinical hours required by the program (Kaslow & Schulman, 1987). However, these students were no more stressed than other graduate students. The MFT program is in its sixth year of running and each new cohort may have learned, through the years, how to manage the workload. A fairly rigorous screening process is established for acceptance into the MFT program so cohort members may have certain qualities that enable them to manage program requirements (Campbell, 1982). These qualities may include good stress management skills (Boss, 1987). Cohorts are fairly small in the MFT program and students may develop a support system among themselves to alleviate some of the pressures (Touliatos & Lindholm, 1992). Polson and Nida (1998) reported that faculty members are often the last to know when a student is thinking about dropping out of the program. With smaller cohorts, it may be possible for faculty members to monitor student stress levels and help provide relief.

Faculty also evaluate the students every semester using a basic skills evaluation device (Nelson & Johnson, 1999). MFT students have regular, positive feedback on their clinical skills that can lower stress levels.

Patterson, McIntosh-Koontz, Baron, and Bischoff (1997) discussed curriculum changes to prepare MFT students for managed-care settings. The sampled MFT students experienced these curriculum changes and were aware of the variety of job opportunities available. It may be concluded that program stress may be lower if students know there will be multiple job opportunities.

Many of the MFT students process family-of-origin issues without being in therapy (Kane, 1996). Dealing with family-of-origin issues within a cohort may account for lower stress as some of the therapist's issues will be addressed before they are problematic.

Much of clinical stress may stem from feeling unprepared for several types of presenting problems (Hines, 1996). Trying to master all of the typical presenting problems is a major stressor for all clinical graduate students. The USU MFT faculty emphasize principles and models that generally apply to problems encountered by clinicians. The faculty also encourage students to obtain advanced training in their practicum sites which may reduce stress.

Graduate MFT and Psychology students only differed on the Lifestyle Scale in terms of stress levels. Psychology students scored higher which reflects poorer health habits. The MFT cohorts that were sampled have a unique quality to them; namely, they mostly belong to the same religious group that promotes healthy behaviors. It is not clear if the Psychology students have that same quality which would influence lifestyle choices. It seems logical that clinical students in this sample have comparable stress levels due to the nature of their programs (i.e., mental health).

Several program requirements stood out as contributing to student stress levels. Most requirements beyond academic coursework such as thesis/dissertation, colloquium attendance, on call/monitoring clinic messages, and assistantships were noted as being statistically significant. These requirements are most often found in graduate programs and would seem to contribute to graduate student stress levels. Some graduate students find their academic experience to be more stressful if they are required to complete a thesis or dissertation (Sori et al., 1996). It would be interesting to examine stress differences between programs that require a thesis and those that do not.

Other stressors such as exams, essays, projects, and oral presentations contribute to student stress. Abouserie (1994) stated that exams are often cited as the most stressful academic stressor. For this sample of students, stress levels are related to academic requirements such as exams, essays, and projects.

Academic stressors have greater impact on females, employed students, and single students than on males, unemployed, and married students. The literature consistently states that females report more stress than males (Cahir & Morris, 1991; Cushway, 1992; Gadzella, 1994; Hudson & O'Regan, 1994). It is not clear if females in this study have more roles than males (mother, wife, student, employed). It may be true, however, that males in this study may have wives that help with family and work responsibilities so their stress levels may be lessened.

It would seem that employed students would be more stressed than unemployed students due to time constraints. However, unemployed students may take more credit hours than employed students, which would expose them to more academic stressors. Also, employed students may have adequate income and have associations outside an academic setting, which could alleviate some stress.

Single students, rather than married students, are impacted more by academic stressors. Married students may take lighter academic loads due to employment or

family responsibilities. Perhaps, the companionship aspect of a good marriage would offset academic stressors. Single students tend to be younger than married students, and perhaps developmental maturity influences stress levels.

An inverse relationship was found between age and the Events scale. Older students experience fewer life events as measured by the Events scale. Younger students most likely experience more life events such as roommate problems, change in living conditions, and dating. Greenberg (1992) and Dohrenwend and Shrout (1985) discussed transitional and social stressors that students face in college.

Limitations and Future Recommendations

The greatest limitation to this study is the small sample size. Graduate program representation was small. Utah State University was the only school measured. The Social Work graduate program was not represented because USU only has an undergraduate Social Work program. Because of only one university sampled, the number of students in graduate programs is small and only two clinical programs could be compared. Using more universities would have increased the sizes of the comparison groups.

The sample used was a convenience sample and no generalizations can be made about the larger population. Randomly selecting students from additional social science programs at many other universities would have made the results more usable.

The use of a seven-paged self-report questionnaire may have frustrated the students due to its length. The same constructs could have been measured with fewer questions. However, the use of multiple stress measures within the questionnaire was a strength.

Future suggestions for research include studying MFT cohort effects, individual effects, or program features that may reduce the stressors within that type of a program.

It would also be interesting to examine the specific differences and similarities between clinical and non-clinical programs in terms of stress moderators and outcomes.

Practical Significance

Perspective is required when discussing student stress. Certainly, students experience stress as they work hard and struggle with the physical, emotional, cognitive, and social aspects of college. However, student stress levels may differ in proportion and in comparison to the stress levels associated with poverty, abuse, or the economic failing of a country. Students generally volunteer to complete undergraduate or graduate work. They have expectations of being stressed and tired to some degree, and most students report their struggle was worth it to them in the end.

The academic stress students experience is important to learn about, within a proper context. By paying attention to the stressors contributing to significant student stress levels, faculty members can respond to student needs in a variety of ways. By adjusting personal attitudes toward students, and/or lending support to stressed students by actively assisting in the student's learning, faculty members may help alleviate a great deal of stress. Suggesting appropriate resources, being available for help, and being aware of professional responsibilities toward students (e.g., committee chair) may also contribute to student stress relief. Clear academic expectations would also alleviate some student stress. Students who are aware of the stressors involved with seeking a degree can implement stress interventions in their lives and plan their lives and their academic schedules to accommodate the demands of their responsibilities (e.g., delaying childbearing or taking additional time to complete degree). Students should recognize the various symptoms associated with stress and know how to alleviate them.

Stress is part of higher education. Students who learn to manage the stress associated with college work will probably manage career stressors. College stress can

prepare students to deal with life events later on, as well. It is difficult to learn coping and stress management skills if students have no stress. The benefit of college stress is that it helps students develop important skills for managing life stressors.

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APPENDICES

Appendix A:

Student Stress Measure

Appendix A - 1

STUDENT STRESS MEASURE

We are interested in finding out about stress levels in students. Please respond to the following questions as they relate to your current student life here at Utah State University. All information that you provide on this survey is strictly confidential. Names are not requested. This questionnaire should take approximately fifteen minutes of your time. Thank you for helping us with this research project.

Note: Please return the completed questionnaire to your professor or the researcher.

Appendix A - 2

SECTION A : **Information about you and your family**

Please fill in the blanks and circle the responses that correspond with your lifestyle.

1. Gender: Male _____ Female _____

2. Birth: Month _____ Day _____ Year _____

3. Name of major: FHD SOCIOLOGY PSYCHOLOGY SOCIAL WORK OTHER: _____

4. Specialty area: _____

5. Degree sought: BS BA MS MA PhD Other _____

6. Number of credits required for graduation: _____

7. Length of time in current program: one year   two years   three years   four years   other: _____

8. Did your graduate program require a relocation? Yes No Not applicable

9. Prior clinical experience: none less than one year one year two years not applicable other: _____

10. Student status: full time Part time Taking one class only

11. PROGRAM REQUIREMENTS: Check all that apply to your degree program, fill in the blank if indicated.

	YES			YES	
a.	_____	Thesis/Dissertation	o.	_____	Exams
b.	_____	Clinical hours, How many? _____	p.	_____	Essays
c.	_____	Supervision, How many hours? _____	q.	_____	Projects
d.	_____	Major project/ Integrative paper/ Culminating experience	r.	_____	Term papers
e.	_____	Professional organization involvement	s.	_____	Group projects
f.	_____	Professional presentations	t.	_____	Class participation
g.	_____	Program marketing	u.	_____	Oral presentations in class
h.	_____	Colloquium attendance	v.	_____	Field trips
i.	_____	New student/ applying student orientation participation	w.	_____	Assistantship
j.	_____	On call/ monitoring messages to clinic	x.	_____	Teaching classes
k.	_____	Video/ audio taped sessions	y.	_____	Research expectationsl
l.	_____	Field placement/ internship/ Practicum	z.	_____	Grant writing
m.	_____	In-house internship			
n.	_____	Comprehensive exam(s)			

12. Current employment status: Full time Part time

13. Number of hours employed a week: _____

14. Marital status: Married Single Separated Divorced widow/widower Cohabitating

15. Number of children living with you: one two three four five six other: _____

Appendix A - 3

SECTION B : **Information regarding change (Burnout)**

　　　　Look back over your undergraduate or graduate experience since you began your current program of study. Have you been noticing changes in yourself, your family, work, or social situations?   Circle a number from one to five to designate the degree of change you perceive.

　　　　　　　　　　　　1 = little or no change (0 -20%)
　　　　　　　　　　　　2 = some change (21 - 40%)
　　　　　　　　　　　　3 = moderate change (41 - 60%)
　　　　　　　　　　　　4 = much change (61 - 80%)
　　　　　　　　　　　　5 = a great deal of change (81 -100%)

1 2 3 4 5　　a) Do you tire more easily and feel fatigued rather than energetic?

1 2 3 4 5　　b) Are people annoying you and telling you that you don't look so good lately?

1 2 3 4 5　　c) Are you working harder and harder and accomplishing less?

1 2 3 4 5　　d) Are you increasingly cynical and disenchanted?

1 2 3 4 5　　e) Are you often invaded by sadness you can't explain?

1 2 3 4 5　　f) Are you forgetting things?

1 2 3 4 5　　g) Are you increasingly irritable, more short-tempered, more disappointed in the people around you?

1 2 3 4 5　　h) Are you seeing close friends and family members less frequently?

1 2 3 4 5　　i) Are you too busy to do even routine things like make phone calls, read for fun, or send out cards?

1 2 3 4 5　　j) Are you suffering from physical complaints like aches, pains, headaches, or a lingering cold?

1 2 3 4 5　　k) Do you feel disoriented when the activity of the day comes to a halt?

1 2 3 4 5　　l) Is joy elusive?

1 2 3 4 5　　m) Are you unable to laugh at a joke about yourself?

1 2 3 4 5　　n) Do you have little to say to people?

SECTION C : **Information about your lifestyle**

　　　　Read each statement, then decide if the statement is never true for you, seldom true for you, very often true for you, or almost always true for you. Check the appropriate answer in the blanks provided.

　　　　　　　　1 = Never　　2 =Seldom　　3 = Very often　　4 = Almost always

(1) never　　(2) seldom　　(3) very often　(4) almost always

____	____	____	____	a. At bedtime, I fall asleep easily.
____	____	____	____	b. I get along well in school.
____	____	____	____	c. If awakened, I easily fall asleep again.
____	____	____	____	d. I control nervous habits (e.g. nail
____	____	____	____	e. I take 15 to 20 minutes a day to do what I want
____	____	____	____	f. I accept things I can't change.
____	____	____	____	g. I get along well with my family.
____	____	____	____	h. I make sure I take time each day to relax.
____	____	____	____	i. I am happy with my life

Appendix A - 4

SECTION D : **Information about you and your education (Cognitive stress)**

Read each statement and decide if the statement is never true for you, seldom true for you, very often true for you, or almost always true for you. Check the appropriate answer in the blanks provided.

1 = Never true   2 =Seldom true   3 = Very often true   4 = Almost always true

Never   Seldom   Very often   Almost always

____ ____ ____ ____   1) If I make a mistake, I question my ability to do undergraduate/graduate work.

____ ____ ____ ____   2) I am at a disadvantage in graduate/undergraduate school because I have been out of school for so long.

____ ____ ____ ____   3) I tend to dwell on negative comments I receive on tests and papers.

____ ____ ____ ____   4) If I do not do well on a test or paper, I feel like a failure.

____ ____ ____ ____   5) If other students or professors do not agree with me, I think I am "wrong."

____ ____ ____ ____   6) I tend to minimize my accomplishments.

____ ____ ____ ____   7) I feel as though other students are more advanced or brighter than I am.

____ ____ ____ ____   8) I have personal difficulties that are very hard to deal with while I am in school.

____ ____ ____ ____   9) The lack of resources/tools (typewriters, computers) to get my work done is very frustrating.

____ ____ ____ ____   10) Working while going to school puts me in two different worlds.

____ ____ ____ ____   11) I question my decision to go to undergraduate/graduate school.

____ ____ ____ ____   12) I feel guilty if I take time off from studying to do something for myself.

____ ____ ____ ____   13) The cost of graduate/undergraduate school deprives me of normal, daily pleasures.

____ ____ ____ ____   14) I feel overloaded by all the demands of school.

____ ____ ____ ____   15) The pressures of school promote an unhealthy lifestyle.

____ ____ ____ ____   16) I feel guilty about spending as much money as I do on school-related concerns.

____ ____ ____ ____   17) I have had to give up much or all of my social life to succeed in school.

____ ____ ____ ____   18) School has created a major lifestyle change for me.

Appendix A - 5

Never   Seldom   Very often   Almost always

___   ___   ___   ___   19) The course scheduling constraints make my day-to-day planning very difficult.

___   ___   ___   ___   20) I am at a disadvantage in school because I have little work experience.

___   ___   ___   ___   21) It is very difficult to meet people when you are in graduate / undergraduate school.

___   ___   ___   ___   22) I find myself indecisive about what I would like to do when I finish school.

___   ___   ___   ___   23) Stress is inescapable in school.

___   ___   ___   ___   24) It's not fair for those who depend on me to suffer because I'm in school.

___   ___   ___   ___   25) One of the difficult things about school is having a life outside of school that needs attention.

___   ___   ___   ___   26) Even when I have important school tasks, I feel it is my duty to tend to the needs of others who depend on me.

___   ___   ___   ___   27) I feel I must be competent at school, work, and home all of the time.

___   ___   ___   ___   28) It is important to me that the professors like me.

___   ___   ___   ___   29) It is important to me that the other students like me.

SECTION E : Information about academic stressors

Please read the following possible stressors and mark all that you find stressful. THEN, look at all the items you have checked and CIRCLE THE ITEM that you find most stressful.

___ final grades	___ Incomplete assignments	___ too much to do
___ excessive homework	___ Unclear assignments	___ amount to learn
___ term papers	___ Unprepared to respond to questions	___ need to do well
___ examinations	___ Announced quizzes	___ essays, papers
___ Studying for exams	___ Studied wrong material	___ projects
___ Speaking in class	___ Incorrect answers in class	___ professional development
___ Waiting for graded tests	___ Missing class	___ developing clinical skills
___ Fast-paced lectures	___ Buying text books	___ working with clients
___ Pop quizzes	___ Learning new skills	___ supervision
___ Forgotten assignments	___ Unclear course objectives	

Appendix A - 6

SECTION F : Information about your life as a student (Demands and Coping)
The statements below reflect a number of different opinions and points of view regarding life as a student. For each statement, please mark the extent to which you agree or disagree.

SD = Strongly disagree   D = Disagree   N = No Opinion   A = Agree   SA = Strongly agree

SD   D   N   A   SA

___ ___ ___ ___ ___   1) I feel I am struggling with the role changes in my life that have occurred during the last twelve months.

___ ___ ___ ___ ___   2) The pressure I feel in my life either from the program and/or my student lifestyle do not seem responsive to my attempts to solve them.

___ ___ ___ ___ ___   3) I am usually able to prioritize my obligations and commitments so that the most important things get done first.

___ ___ ___ ___ ___   4) My current physical well-being interferes with fulfilling the demands in my life.

___ ___ ___ ___ ___   5) I am very isolated from other people right now.

___ ___ ___ ___ ___   6) Currently, there is a lot of conflict in my family (marriage, significant other, family-of-origin).

___ ___ ___ ___ ___   7) I can't influence the amount of control the program has in my life.

___ ___ ___ ___ ___   8) I don't feel any emotion or mental discomfort from difficulties in my personal life or family (marriage, significant others, family-of-origin).

___ ___ ___ ___ ___   9) I have the capacity to manage all stress, either from the program or outside of it.

___ ___ ___ ___ ___   10) I'd rate my physical health as good over the last 12 months.

___ ___ ___ ___ ___   11) The last 12 month's events have produced little strain that I am currently experiencing in my life.

___ ___ ___ ___ ___   12) I seldom have time to get away and relax from program or university demands.

___ ___ ___ ___ ___   13) I usually have enough income left after paying my expenses every month for doing things I want like recreation, entertainment, socializing, etc.

___ ___ ___ ___ ___   14) There haven't really been any complications in my life recently that have come on "suddenly."

___ ___ ___ ___ ___   15) I feel like my mental and/or emotional well-being has been affected negatively in recent weeks.

___ ___ ___ ___ ___   16) I have a set routine that helps to make my life relatively stable and predictable.

___ ___ ___ ___ ___   17) I have enough time for meeting both personal/family needs and also what I have to do in the program.

___ ___ ___ ___ ___   18) I am satisfied with the amount of interaction I have with the people I value in my family (marriage, significant other, family-of-origin).

___ ___ ___ ___ ___   19) I have had too many difficult events happening in my life lately.

___ ___ ___ ___ ___   20) My life has been pretty much unchanged during the last 6 to 12 months.

Appendix A - 7

SD   D   N   A   SA

__ __ __ __ __   21) My relationships with significant others demands too much of me right now.

__ __ __ __ __   22) My current feeling of psychological well-being is lower than what I would like it
                             to be.

__ __ __ __ __   23) I often seem to fall behind in my efforts to balance the demands in my life.

__ __ __ __ __   24) Clinical and academic demands are taking too much of my time this semester.

__ __ __ __ __   25) The pressures within my program and also my student life style are
                             generally manageable.

__ __ __ __ __   26) On the average, I satisfy the demands on my time both inside and outside the
                             program.

__ __ __ __ __   27) Right now, I am uncertain about the role (s) I am supposed to play in my family
                             (marriage, significant other, family-of-origin).

__ __ __ __ __   28) None of the stressful events I have experienced during the last 12 months are still
                             impacting me or my family (marriage, significant other, family-of-origin).

Section   G: **Information about your stress symptoms**

Please read the following list of possible stress symptoms and mark all that you have been experiencing since
you began your current program of study.

____ anxiety	____ guilt	____ withdrawal
____ emotional outbursts	____ grief	____ denial
____ fear	____ sense of uncertainty	____ loss of emotional control
____ depression	____ apprehension	____ feeling overwhelmed
____ intense anger	____ irritability	____ aggravated
____ suspiciousness	____ talk less or more	____ increased/decreased appetite
____ increased drug/alcohol use	____ decreased sleep	____ body complaints
____ pacing	____ hyper-alert	____ blame others
____ confusion	____ poor attention	____ weakness
____ grind/clench teeth	____ poor decision-making	____ increased/decreased alertness
____ poor concentration	____ memory problems	____ poor problem-solving
____ poor abstract thinking	____ nightmares	____ fatigue
____ nausea	____ muscle tremors	____ twitches
____ headaches	____ visual difficulties	

Appendix A - 8

Following are listed events which can occur in the life of a college student. Place a check in the left hand column for each of those events that have happened to you within the last 12 months.

_____ 1) Death of a close family member
_____ 2) Pregnancy (to you or caused by you)
_____ 3) Severe personal illness or injury
_____ 4) Caring for someone who is severely ill or injured
_____ 5) Marriage
_____ 6) Any interpersonal problems
_____ 7) Financial difficulties
_____ 8) Death of a close friend
_____ 9) Arguments with your roommate (more than every other day)
_____ 10) Major disagreements with your family
_____ 11) Major change in personal habits
_____ 12) Change in living environment
_____ 13) Beginning or ending a job
_____ 14) Problems with your boss or professor
_____ 15) Outstanding personal achievement
_____ 16) Failure in some course
_____ 17) Final exams
_____ 18) Increased or decreased dating
_____ 19) Change in working conditions
_____ 20) Change in your major
_____ 21) Change in your sleeping habits
_____ 22) Several-day vacation
_____ 23) Change in eating habits
_____ 24) Family reunion
_____ 25) Change in recreational activities
_____ 26) Minor illness or injury
_____ 27) Minor violations of the law

Appendix B:

Pilot Study

Appendix B - 1

Pilot Study

The pilot study was conducted to refine the Student Stress Measure. Reliability and validity was examined to ensure that the selected measures were appropriate for purposes of the study.

Sample

Data were acquired from thirty Utah State University students. Nine students were male, twenty-one were female. Twenty-nine were full-time students, while one was part-time. Eight students were Family and Human Development majors. One student was a psychology major. Twenty students were enrolled in other majors. Only one student was married.

Reliability

Burnout Scale

The reported reliability coefficient for the Burnout Scale is 0.88. One item was eliminated from this section due to its non-applicability. Hence, the revised alpha coefficient becomes 0.90. This scale will stand as a 14-item measure.

Lifestyle Scale

The alpha coefficient for the ten item Lifestyle Scale is reported as 0.62. One item was removed from the scale and the revised scale of nine items had a reliability coefficient of 0.63.

Appendix B – 2

Cognitive Stress Scale

The 31-item Cognitive Stress Scale has an alpha coefficient of 0.87. Two items were eliminated from the final scale due to low relatedness to the other items within the scale. Twenty-nine items were retained to give the Cognitive Stress scale a reliability of 0.88.

Academic Stressors Scale

This 30-item section of the measure has an alpha coefficient of 0.89. One item was removed from the final scale to give this section a reliability coefficient of 0.90.

Demands/Coping Scale

This thirty item scale has a reliability coefficient of 0.88. Two items were removed to give the final twenty eight item scale a coefficient of 0.89.

Stress Symptoms Scale

This 41-item scale has an alpha coefficient of 0.84. No items were removed from the final scale.

Validity

Construct validity for the Student Stress Measure is evidenced by the relationship coefficients between each subscale (see Table 12). The relationships seem adequate.

Appendix B – 3

Table 12

Pilot Study Interscale Correlations for the Student Stress Measure, N = 30

	1	2	3	4	5	6
1 Burnout	1.00	-0.54	0.62	0.19	-0.68	0.59
2 Lifestyle		1.00	-0.17	-0.06	0.45	-0.56
3 Cognitive Stress			1.00	0.51	-0.69	0.46
4 Academic Stressors				1.00	-0.44	0.27
5 Demands/Coping					1.00	-0.68
6 Stress Symptoms						1.00

The Burnout with Lifestyle correlation coefficient is r = -0.540 whereby 29% of variability is shared. This makes sense because the more change a person experiences, the less a healthy lifestyle is maintained.

The Burnout with Cognitive Stress correlation coefficient is reported as r = 0.62, or a shared variability of 39%. The interpretation of this coefficient is that the more change one experiences, the more negative thoughts one has toward their educational experiences.

The Burnout with Demands/Coping correlation coefficient is r = -0.68, or 46% of shared variability. The more changes one experiences, then there is a possibility of less coping.

The Burnout with Stress Symptoms comparison yielded a correlation coefficient of r = 0.60, indicating 36% shared variability. The more change experienced, the more stress symptoms appear.

The correlation coefficient for the Lifestyle with Stress Symptoms coefficient of r = -0.56, or 31% shared variability, indicates that the more healthy habits one has, the less stress symptoms are manifest. The reverse is also true.

Appendix B – 4

The Cognitive Stress with Academic Stressors would seem to indicate that the more negative cognitions a person has, the less easily that person would cope with stress. The correlation coefficient was $r = -0.69$, or 48% shared variability.

The Cognitive Stress with Stress Symptoms correlation was $r = 0.46$, or 21% shared variability. It appears that the more negative cognitions one has, the more stress symptoms are manifest.

The Academic Stressors with Demands/Coping correlation coefficient of $r = -0.44$, or 19% shared variability, indicates that the more academic stressors perceived, then the less one may be able to cope. The reverse may also be true: the less academic stressors, the more coping ability.

Lastly, the Demands/Coping with Stress Symptoms correlation coefficient was $r = -0.68$, or 46% shared variability. This relationship indicates that the more coping capability one has, the less stress symptoms are manifest. Also, the less coping ability one has, then the more stress symptoms are manifest.

The Student Stress Measure appears to be measuring what it is supposed to and acts as expected. The SSM will be used for collecting data for this study.

Sex Differences

The literature indicates that female students tend to be more stressed than males, overall. This pilot study indicates that females have higher stress scores than males in relation to the Academic Stressors, Cognitive Stress, Burnout, and Stress Symptoms Scales. Males report higher stress scores on the Demands/Coping Scale. It appears that women are experiencing more stress, while males have lower coping scores. The measure behaves as expected according to the literature.

Appendix B - 5

Conclusion

The pilot study has indicated ways to revise the Student Stress Measure to enhance reliability and validity. Questions for each section that do not contribute any new information or needed information for the construct measured will be deleted in the final draft. The relationships of each scale of the SSM seem to behave as expected according to the alpha coefficients and the interscale correlation coefficients. The Student Stress Measure appears to be a valid measure of stress. It is concluded that the SSM is adequate for purposes of this study.

Appendix C:
Acceptance Letter from
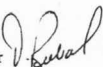Utah State University
Institutional Review Board

Appendix C - 1

UtahState
UNIVERSITY

April 28, 1999

MEMORANDUM

TO: Randy Jones
        Darcy Keady

FROM: True Rubal, IRB Administrator

SUBJECT: Student Stress: An Analysis of Stress Levels Associated with Higher
         Educationin the Social Sciences

The above-referenced proposal has been reviewed by this office and is exempt from further review by the Institutional Review Board. The IRB appreciates researchers who recognize the importance of ethical research conduct. While your research project does not require a signed informed consent, you should consider (a) offering a general introduction to your research goals, and (b) informing, in writing or through oral presentation, each participant as to the rights of the subject to confidentiality, privacy or withdrawal at any time from the research activities.

The research activities listed below are exempt from IRB review based on the Department of Health and Human Services (DHHS) regulations for the protection of human research subjects, 45 CFR Part 46, as amended to include provisions of the Federal Policy for the Protection of Human Subjects, June 18, 1991.

2. Research involving the use of educational tests (cognitive, diagnostic, aptitude, achievement), survey procedures, interview procedures or observation of public behavior, unless: (a) information obtained is recorded in such a manner that human subjects can be identified, directly or through the identifiers linked to the subjects: and (b) any disclosure of human subjects' responses outside the research could reasonably place the subjects at risk of criminal or civil liability or be damaging to the subjects' financial standing, employability, or reputation.

Your research is exempt from further review based on exemption number 2. Please keep the committee advised of any changes, adverse reactions or termination of the study. A yearly review is required of all proposals submitted to the IRB. We request that you advise us when this project is completed, otherwise we will contact you in one year from the date of this letter.