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FACTORS ASSOCIATED WITH STUDENT STRESS

IN THE

U.S. ARMY - BAYLOR UNIVERSITY GRADUATE PROGRAM

By

Monte Robert Watson Major, Army Medical Specialist Corps

A Graduate Research Project Submitted in Partial Fulfillment of the Requirements for the Degree of Master of Health Care Administration

August 31, 1985

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I. INTRODUCTION

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Description of the Setting

The U. S. Army-Baylor University Graduate Program in Health Care Administration (HCA) is a graduate program consisting of a 12-month didactic phase, conducted at the U. S. Army Academy of Health Sciences (Medical Field Service School), Fort Sam Houston, Texas; and a 12-month residency phase, conducted at a variety of military medical treatment facilities within the United States and in Europe. Successful completion of the course results in the awarding of the degree of Master of Health Care Administration.

The program is a highly-sought-after and prestigious course which attracts a large number of officers from the Army, as well as several from the Navy and Air Force. Graduates of the program are considered to be much more competitive than non-graduates for promotion and assignment to higher-level positions in the medical administrative hierarchy of the Armed Forces. Because of the limited number of positions available there is a high degree of competition among the candidates. Individuals who apply for enrollment in the program must pass a rigid screening process including a military long-term education selection board in their respective branches of service, which reviews records of academic and military performance and the recommendations of superiors, and an academic admissions screening board of the Baylor University Graduate School. 2

Upon enrollment in the program, the student finds himself under a high level of expectation to complete the course successfully. Failure to do so is considered tantamount to future failure in one's military career. The tie between performance in the academic program and job security within the Armed Forces is considered be a significant stressor for most of the students, is one of the primary incentives which drives the students' performance, and increases competition within an already highly-competitive military system.

Academic probation is imposed on any new student who did not have an undergraduate grade point average (GPA) of 2.70 or higher, or did not obtain a Graduate Record Exam (GRE) score 1000 of or a GMAT score of 500 or more. Subsequently all students are required to obtain and maintain an overall 3.00 GPA or be placed on academic probation. Students are allowed to remain in a probationary status for only one semester before dismissal from the graduate curriculum.

The program of instruction is very rigorous and compressed. The didactic phase of the program consists of sixty (60) graduate semester hours of instruction covering a wide spectrum of subjects to include health care organization and administration, economics, statisitos, operations research, systems analysis, financial and human resource management, legal issues, ethics, automated information management systems, and others. The residency phase consists of a series of administrative work rotations within the various departments and services of a medical facility under the supervision of a senior officer, usually the hospital's chief executive officer (or Deputy Commander for Administration). During the residency phase each student is required to complete one major systems research project and a graduate research project, which approximates a thesis. 3

Since both phases of the program are conducted in the military setting, the students must continue to meet all the crequirements of military service during the course, such as physical training and fitness standards, uniform and appearance standards, annual performance evaluation reports, and other administrative requirements. In addition, the students are required to repeatedly reestablish living arrangements due to a minimum of two permanent changes in duty station within twenty-four months.

Due to the factors mentioned above, the course is considered by many in the military medical community to be one of the most demanding and stressful graduate programs in health care administration in the nation.

Rationale for the Study

During the 1983-84 academic year, the Baylor faculty, recognizing a need to provide some "stress management training" to the students, incorporated a four-hour instructional block providing some background information on the concept of stress, exposure to some self-assessment tools, and information on the availability of local counseling resources. This information was felt to be of very little value by the students. More specific stress management sessions and sessions for the students' spouses were planned, but were never scheduled.

During the course of the academic year, significant evidence of unfavorable stress responses was manifested among the students. A high incidence of "cold and flu symptoms," complaints of sleep disturbances, headaches, "family pressures," gastrointestinal and other somatic problems, and general anxiety reactions were reported by the students. On several occasions, "explosive" confrontations broke out between classmembers and between .classmembers-and the faculty. There appeared to be a need to analyse the specific factors associated with these unfavorable stress responses in the HCA students in order to better identify the targets for planning future stress management efforts.

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II. REVIEW OF THE LITERATURE

Stress and burnout are terms which have become popularized in recent years. The recent popularization of these terms does not distract from the fact that they address real conditions which can have significant negative impact on one's physical and mental health. Stress is defined generally in terms of the degree of response or accomodation necessary to adapt to stressors (changes or demands) in one's internal or external environment. Because the responses of different individuals to the same "stressor" can vary markedly, it has been long recognized that stress is an entity which cannot be measured directly. It is generally inferred from physiological measurements or from self-report measures of various kinds.

Hans Selye (1974), called by many "the father of modern stress research," defined stress as "the nonspecific response of the body to any demand made upon it." Selye (1956, 1974) developed the theory of the "general adaptation syndrome" (GAS) or "biological stress syndrome" to describe the responses of living organisms to stressors. He also developed the concept that "adaptation energy" can be exhausted with prolonged exposure to stressors resulting in a decay of health and changes in behavior.

Stress is something that most people have come to recognize as part of the American lifestyle. The literature is replete with studies of the role which stress plays in the development of illnesses such as heart attack, cancer, hypertension, and ulcers.

A number of researchers have studied the relationship of stress and health.

From their studies of the recent life histories of a large population of Navy personnel who had reported for sick call at a Naval dispensary, Holmes and Rahe found that a large number of them had experienced a significant degree of life change during the months preceeding their illnesses. From these histories, Holmes and Rahe (1967b) developed the Social Readjustment Rating Scale (SRS), which was designed to measure the amount of relative adaptation required by an individual experiencing certain life change events. High scores on the SRS were found to be predictive of both minor and major health changes. (Rahe et al, 1967a)

Jenkins (1971, 1976) studied the psychological and sociological precursors of coronary disease. In cooperation with Rosenman and Friedman (1965) he developed the *Jenkins Activity Survey* which has been widely used to differentiate between the Type A coronary-prone behavior patterns and Type B noncoronary-prone behavior patterns. Rosenman and Friedman (e.g., Friedman, 1969) delineated the chief components of the Type A behavior pattern: a high achievement motivation, a persistent sense of the urgency of time, and poorly controlled feelings of hostility.

In a study using the Jenkins Activity Survey, Manuck and Garland (1979) found that when Type A and Type B student subjects were given an experimental task to do with an attached incentive, there was no significant difference between their task performance levels or their self-reported anxiety, but that when no incentive

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was attached to the task, the Type B personalities performed at a lower level. Their results suggest that environmental factors or stressors, such as the inherent career-related rewards attached to health care administration students' performance, may mitigate or exacerbate Type A behavioral responses in students. Other studies have added to the evidence that these behavior patterns are relatively flexible and responsive to situational factors. (Glass, 1977)

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Glazer developed the Self Test for Type A Personality (GTA) -- which is based on the Jenkins Survey -- to provide a quick, reliable, group-administered measure of Type A behavioral tendencizes. This tool has been shown to provide a reliable measure of self-reported Type A behavior in studies of soldiers and middle managers in Army cavalry units. (Watson, 1983a and 1983b)

Phares (1973) and Rotter (1961, 1966) studied the personality determinants of behavior, specifically the construct, locus of control, which can be defined as the set of individual beliefs about the environment and its impact on one's behavior or performance. Rotter developed an instrument, the *Rotter Locus of Control* (LOC), which provides a measure of the degree to which an individual believes that events in his/her life are controlled externally, "...as a result of luck, chance, fate, as under the control of powerful others, or as unpredictable because of the great complexity of the forces surrounding him..."; or "...contingent upon his own behavior or his own relatively permanent characteristics." (1965) Phares (1962) studied the differences in the perceptual thresholds for a series of electrical shock stimuli between two groups of subjects who were given different expectations. One group (skill group) was told that they could avoid the shock through their skill at correctly pressing a series of buttons while the other group was told that the shock might occur regardless of their skill (chance group). Phares concluded that subjects who felt they had control of the situation [internal locus of control] were better able to cope with the potentially threatening situation [or perceived less stress] than subjects who felt chance or some uncontrollable forces controlled their success.

Linn and Zeppa (1984) found that junior medical students who reported more external locus of control on the Rotter scale were more likely to experience unfavorable stress than those who reported a more internal locus of control.

The relationship of experienced stress and physical symptom complaints has been well established. Wahler (1968, 1983) developed the Wahler Physical Symptoms Inventory (WPS), a forty-two item inventory of common physical symptoms which provides a means of quantifying experienced somatic symptoms at a given point in time. By comparing the individuals obtained score with his present physical health and with the decile ranks obtained by samples of normal students and psychiatric clients the evaluator is able to differentiate between symptoms which are of physical (focused) origin and those which are of psychogenic (diffuse) origin. Previous studies using the WPS have shown it to

be a valid measure of experienced physical symptoms in student populations. Whaler found that the WPS scores were not effected by the age or the sex of the subjects.

The term "burnout" was first formally introduced into the literature by Freudenberger (1974) who used it to describe the condition which he called "staff burnout syndrome" in his study of "front-line human service workers." The term did not appear in the titles of articles indexed in the Cumulative Index to Nursing and Allied Health Literature until 1978. By 1980, there was an explosion of articles indexed under this separate heading. Muldary (1983) points out that burnout is really "a causal term rather than a technical one." It is a term which has significant communicative value because it denotes a condition which is commonly recognized by a variety of people. Burnout appears to be related conceptually to the third stage of Selye's GAS model, the stage of exhaustion, where one's adaptive energy is depleted and one is no longer able to cope effectively with the stressors present. It is the reponse of a person to prolonged exposure to unfavorable stress.

Christina Maslach (1981) developed the Maslach Burnout Inventory (MBI) which provides a measure of three specific factors identified in the professional burnout syndrome; emotional exhaustion, depersonalization, and feelings of a lack of personal accomplishment. The development of the tool was based upon extensive research by the author and her associates, Pines and Jackson, during the period 1976 to 1980, with lawyers, policemen, social workers, mental health workers, health care workers, and

other professional groups who had been deemed prome to burnout. The MBI requires the subject to report the frequency and intensity of experience associated with twenty-two item scale.

Constable (1983) used the MBI in his study of the mitigating influences of social support systems and the work environment upon experienced burnout in a population of nursing personnel assigned to a military medical treatment facility. Corley (1983) studied the effects of demographic variables including sex, marital status, age, and the presence of other family members in the living environment upon burnout as measured by the MBI. The test has been shown to have high test-retest reliability and validity in studies of students, military medical professionals, and numerous other professional groups to include administrators of health agencies.

Muldary (1983) states that the "burgeoning literature [related to burnout in health care workers] has not yet provided a complete picture of the phenomena" but "consists of numerous perfunctory articles and a range of unsubstantiated opinions concerning the etiology, symptomatology, and control of burnout." Veninga (1979), Vash (1980), and Numerof (1983) have studied the effects of stress and burnout in health care admininstrators. The literature abounds with studies of stress in populations of nursing personnel (e.g. Sutterly and Donnelly, 1981; Constable, 1983).

Our understanding of burnout and stress in allied health students, using Muldary's description, "is grounded mainly on impressions, anectdotal evidence, and comparisons with other

helping professions." (1983) David Mechanic published observational studies of students' responses to stress as early as 1962. His 1978 capstone work, *Students Under Stress*, presented a study of the social psychology of adaptation among students. Several authors have reported observational studies of nurses and nursing paraprofessionals in training. (Garret, 1976; Linn, 1975) Observational studies of stress among medical students and residents have been reported by Mitchell et al (1983), Gaensbauer (1980), and Berg and Garrard (1980).

Heins, Fahey, and Leiden (1984) compared the perceived stress in populations on medical, law, and other graduate students. Using a survey approach, they identified six separate factors pertaining to sources of stress among graduate students: academic concerns, fear of failing, time concerns, classroom interactions, economic issues, and world issues.

To date the writer is not aware of a single published article describing these phenomena in a group of graduate-level health care administration students -- let alone a systematic research study.

III. STATEMENT OF RESEARCH

Purpose

The purpose of this descriptive study was to define the relationship of selected environmental factors, individual student characteristics, and the levels of perceived and experienced stress reported by students during the U. S. Army-Baylor University Graduate Program in Health Care Administration. In addition, the study was to identify, using a survey approach, the sources of students' percieved stress and the inherant sources of adaptation employed by these students.

Assumptions

In designing the study, four assumptions were made concerning the relationships of the variables under study: 1. It was assumed that the degree of stress inherent in the didactic phase of the program does not vary significantly from year to year. It was further assumed that the experiences of the second-year students would be reflective of those which the first-year students would experience during the same phase of their academic program.

2. The biographical background data and the effects of locus of control were assumed to remain relatively stable and to exert a continuous modifying influence on the students' stress over the

course of the study period.

3. The Neslech Burnout Inventory and the Nheler Physical Symptoms Inventory were assumed to measure phenomena that are secondary results of unfavorable stress exposure, and that would vary among students over time.

4. It was assumed that drawing observations of students during two distinctly different periods in the Baylor Program; entry-level through the mid-point in the didactic phase, and finalization of the didactic phase through the initial residency phase, would provide valuable data regarding changes in the students' experience of and response to stress during the program.

Limitations of the Study

Data collection was limited to the first two didactic semester's for the first-year students, and the fourth didactic semester and first residency semester for the second-year students. This limits the writer's ability to make predictions concerning the students' experience of unfavorable stress or burnout across the entire academic continuum.

The initial series of stress scales were group-administered and returned to the author through local distribution upon completion. The second series of stress scales drawn from the students during the study period required mail survey and return. The lack of environmental control over the second administration may have resulted in increased variation in measurements compared to those which were been obtained in the more controlled initial administration.

No data was available for the second year students who had been dismissed or had withdrawn from the program prior to initiation of the study. One first year student who took the first series of tests was unavailable for follow-up due to withdrawal from the program. These factors may have skewed the study results toward survivors and limited its application to those who fail to survive.

As the academic component of the students' experience is so integrally associated with the military social and environmental components, its individual impact as a stressor could not be adequately assessed. This limits the application of study findings to non-military graduate programs in Health Care Administration.

Hypotheses of Interest Tested

Although the data and the study design provided a large number of hypotheses to be tested, the following working hypotheses were established apriori based on the literature review and the author's clinical experience and interest:

1. Student's reported stress levels on the MBI and the WPSI will change in relationship to the amount of exposure or time in the Baylor academic environment. The second mean scores of first year

students will be higher than their intial mean scores. Likewise, second year students in the residency phase will have lower mean scores than they did during their last didactic phase semester. 2. Students who entered the program on academic probation will demonstrate higher initial mean scores on the MBI and the WPSI than students who did not enter on academic probation.

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3. Students who score 250 or more points on the SRS -- the cut-off score indicated in the literature as indicative of significant risk for stress-related illness -- will have higher initial mean scores on the MBI emotional exhaustion subscales and the WPC1 than students who score less than 250 points.

4. The GTA scores will be directly affected by the amount of exposure to the didactic phase. The mean second semester GTA scores of first-year students will be higher than their mean first semester scores. The mean residency phase GTA scores of second-year students will be lower than their mean didactic phase scores.

5. Students with a high external locus of control -- those with a LOC score greater than 1 standard deviation above the mean for the population under study -- will exhibit higher initial mean GTA scores than those with a more internal locus of control -- a LOC score greater than 1 standard deviation below the mean.

6. Students with a high external locus of control -- those with a LOC score greater than 1 standard deviation above the mean for the study population -- will exhibit higher initial mean MBI and WPSI scores than those with a more internal locus of control -- a LOC score greater than 1 standard deviation below the mean.

IV. RESEARCH METHODOLOGY

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Sample and Setting

The subjects chosen for study were drawn from two consecutive classes in the U.S. Army-Baylor University Graduate Program in Health Care Administration, the classes of 1983-85 and 1984-86. The population under study consisted of a convenience sample of sixty-six students, thirty-three members from each of the two classes. First year students were assigned to the didactic phase of the program during both testings. The second year students were assigned to the didactic phase of the program during the initial testing and were reassigned to thirty different medical treatment facilities for their residency phase several weeks prior to their follow-up testing. All data for this study was collected during the period July 1, 1984 to February 15, 1985. The test instruments were administered shortly after the midpoint of two consecutive semesters.

Protection of Human Rights

Prior to the initiation of the study, all participants were given an information sheet which described the study purpose and methodology, listed the mechanisms used to insure the privacy of information provided to the writer, and informed them that their participation was strictly voluntary. (See Appendix A) The writer personally presented the information and answered any questions presented at that time. Each subject was assigned a random three-digit identity number which allowed the writer to differentiate between the members of the two classes and to track the responses of individual subjects during the study.

Design of the Study

This study was a descriptive and correlational study designed to define the demographic, and certain situational and personality characteristics of a population of students, and relate these factors to measures of experienced stress. A number of measurement instruments and questionairres were used as described below.

A simple biographical background questionnaire was group-administered to each class at the beginning of the study period. (See Appendix B) The Holmes and Rahe Situational Readjustment Rating Scale (SRS), the Glazer Self-Test for Type A Personality (GTA), and the Rotter Locus of Control (LOC) were group-administered to both classes early in the first semester of the study period. The Maslach Burnout Inventory (MBI) and the Wahler Physical Symptoms Inventory (WPS) were group-administered to both classes shortly after the midpoint of first semester under study. The scales were individually administered to those not present for the group administration.

The SRRS, GTA, MBI, and WPSI were retested shortly after the midpoint of the following semester. The scales were mailed out to the home addresses of each participant with written

instructions and pre-addressed stamped return envelopes. Follow-up mailings were sent out to all subjects who had not returned the surveys within thirty days of initial mailing.

During the second test period the students were requested to complete an open-ended Delphi-like survey to identify those situations, events, or requirements associated with the academic program which were most frequently reported to be perceived as stessors. They were also asked to identify the persons or methods which were of greatest assistance in combatting stress during the previous semester.

Treatment of Data

The dichotomous (yes or no, male or female, etc.) responses to the biographical background questionnaire were numerically coded for analysis. The raw scores of each of the standardized measures were used in the data analysis.

The statistical analysis was performed on a Tandy Radio Shack Model 16B microcomputer utilizing the *Trajectories* statistical processing system software, version 4.0, developed by DATA BASics, Incorporated. This package provided for database management, data matrix manipulation, and all necessary statistical analyses. (Southeast Technical Associates, Inc., 1983)

V. FINDINGS AND DISCUSSION

The data included in this study was obtained from a convenience sample of two consecutive classes in the U.S. Army - Baylor University Graduate Program in Health Care Administration. The total number of students involved in the study was sixty-six with an equal distribution between the two classes. A one hundred percent return rate was obtained for the background questionnaires and the initial personality and situational stress measures. A ninety-seven percent (n = 64) return rate was obtained for the second test/survey administration, which had been mailed out to the participants. One student, who returned the second test, failed to complete one of the included scales.

Sample Characteristics

An analysis of the demographic data for the two-class sample of health care administration graduate students revealed the following profile. The population consisted of fifty-three male and thirteen female officers ranging in military pay grade from 0-2 to 0-5, with the median pay grade of 0-3. The students had completed between four and eighteen years of active military service, with a mean of ten years and a standard deviation of 3.4 years time in service (TIS). They reported hospital or health care work experience (HEX) ranging from zero to eighteen years,

with a mean of 4.9 years and a standard deviation of 5.1 years. The students ranged in age from twenty-seven to forty-four years, with a mean age of 32.8 years and a standard deviation of 4.0 years.

The Graduate Record Exam (GRE) scores ranged from a score of 940 to a score of 1550 points (combined verbal and math scores), with a mean score of 1148 points and a standard deviation of 135 points. The students reported undergraduate grade point averages (GPA) ranging from 2.33 to 3.97 on a scale of 4.0 points. The mean GPA was 3.09, with a standard deviation of 0.39 points. Fifteen of the students were placed on probationary status upon entry into the program due to failure to meet the entrance standards noted earlier -- eight in the first year class and seven in the second year class. Eighteen of the students had obtained a graduate degree prior to enrollment.

Fifty-seven of the sixty-six students were married and nine were single. Fifty of the students reported at least one child living at home. Three of the married students were living separately from their spouses due to military assignment conflicts -- two in the first year class, and one was in the second year class.

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Comparison of Class Samples

The class (sample) mean ages, mean time in service (TIS), mean years of hospital experience (HEX), mean scores on the Graduate Record Exam (GRE), and the mean undergraduate grade point averages (GPA) were computed. The two class means for each of these factors were subjected to a t-test of the hypothesis of the equality of sample means, using a 95 percent confidence interval. The proportions of students in each class who were male or female, married or single, living with their children or not, and who did or did not possess a prior graduate degree were subjected to a Chi-square test of homogeneity of sample proportions, using a 95 percent confidence interval. The assumption of homogeneity between the two classes was considered established for the purposes of this study if for all the factors analyzed the hypothesis of equality of means or proportions could not be rejected at the level noted above. The results of hypothesis testing of the observed differences in the background characteristics of the two classes under study are presented in Tables 1 and 2.

No significant difference (95 percent confidence interval) was noted between the two samples with regard to any of the measures listed in Table 1 or Table 2. The relatively greater difference in their mean ages represented a variance of slightly more than one year, or only .39 years when corrected for their age at the beginning of the graduate program. The observed difference in the mean scores on the Social Readjustment Rating Scale may

be attributed in part to the fact that the second year students were reporting the life change factors related to their involvement in the graduate program during the previous 12 months. The only factor approaching significance in Table 2 was the proportion of married and single students in the respective classes.

TABLE 1

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T-Test Comparisons Of First And Second Year Students

Item		First Mean	Y ear S.D.	Second Mean	Year S.D.	t-score/D.F.	Signi- ficance	
ĀGE	(Years)	32.09	3.794	33.48	4.124	1.1812 / 64	*****	
HEX	(Years)	4.788	4.729	5.121	5.389	.2671 / 64	#	
TIS	(Years)	9.970	3.566	10.454	3.364	.5681 / 64	+	
GPA	(4.0 Scale)	3.105	.4332	3.077	.3613	.2901 / 64	#	
GRE	Score	1135.9	118.58	1155.5	150.4	.5853 / 64	#	
GTA	Score #1	96.55	13.30	94.67	18.77	.4692 / 64	*	
LOC	Score	9.094	3.246	8.750	4.399	.3556 / 62	*	
SRS	Score	220.8	121.51	251.5	76.25	1.2162 / 63	#	

* C.V. of t (alpha = .05, 60 D.F.) = 2.0003 The hypothesis of equality of sample means cannot be rejected at the .05 level of significance.

TABLE 2

Chi-square Comparisons Of First And Second Year Students

Proportion or Ratio	First Year	Second Year	Chi-Sqr Value / D.F.	Signi- ficance
Male/Female	25 / 8	28 / 5	.8621 / 1	*
Married/Single With/With out	26 / 7	31 / 2	3.2163 / 1	*
Children With/With out	23 / 10	27 / 6	1.32 / 1	*
Graduate Degree	8 / 25	10 / 23	.3055 / 1	*

* C.V. of Chi-Square (Alpha = .05, 1 D.F.) = 3.841 The hypothesis of equality of sample proportions cannot be rejected at the .05 level of significance.

Correlation Analysis

As noted above, the two classes of students showed no significant differences with regards to any of the demographic or other background characteristics. The data from the two classes was combined for the purposes of correlation analysis.

Pearson product moment correlation coefficients (r) were computed to analyze the interrelationships of reported unfavorable stress, the individual demographic characteristics, and pretest environmental and personality measures. The fifteen variables included were age, time in service (TIS), hospital/healthcare experience (HEX), the GRE score, undergraduate GPA, the LOC score, the SRRS score, the GTA score, the six initial MBI subscale scores, and the WPS scores. Factors found to be correlated, r = $\pm/-$.25 or greater and p = .05 or less, were considered significantly associated. The results of this analysis are presented in matrix form as Table 3.

A moderately strong positive correlation, r = .297301(p<.05), was noted between students age and the *Situational Readjustment Rating Scale* (SRS). This finding suggests that older students tended to have experienced more life change than younger students. The results of this analysis may have been influenced by the relatively higher SRS scores of the second year students who were on average 1.39 years older than the first year students. (See Table 1)

A very strong positive correlation, r = .425807 (p<.001), was observed between the SRS score and the *Nahler Physical*

Symptoms Inventory (WPS). This finding is consistent with the relationship of high SRS scores to higher a incidence physical illnesses or complaints, which is well-established in the literature. (Holmes, 1967; Rahe, 1967, 1968) It was hypothesized by the author that the WPS scores of students scoring more than 250 life change units on the SRS would be significantly higher than those of students scoring less than 250 life change units on the SRS. A t-test of the hypothesis of equal group means revealed a significant difference (t = 2.01613, 60 D.F., p<.05). The mean WPS scores of a sample of students scoring more than one standard deviation above the overall group mean on the SRS was significantly higher than those of a group scoring more than one standard deviation below the mean (t = 3.1928, 14 D.F., p<.001). These findings further corroborate the strong relationship between the Situational Readjustment Rating Scale and the presence of physical complaints as measured by the Nahler Physical Symptoms Inventory.

The GRE scores demonstrated a strong negative correlation (.001 with four of the six subscales of the*Maslach* Burnout Inventory (MBI), emotional exhaustion frequency (EF),emotional exhaustion intensity (EI), depensionalization frequency(DF), and depensionalization intensity (DI). This suggests thatstudents with higher GRE scores exhibited a lower degree offeelings related to these components of the burnout syndrome. Nosignificant relationship was established between the GRE and thefrequency or intensity subscales related to feelings of personalaccomplishment (PF and PI).

The Rotter Locus of Control (LOC) showed a moderately strong positive relationship (p<.05) with the three subscales of the MBI; EI, DF, DI. This suggests that students with a more external locus of control experienced greater feelings of emotional exhaustion and depersonalization. A moderately strong negative correlation (p<.05) was noted between the LOC and the the PF and PI subscales of the MBI, suggesting that students with a more external locus of control experienced a lesser sense of personal accomplishment. The relationship between the Rotter Locus Of Control Scale and the Maslach Burnout Inventory subscales was further established by the a t-test of two samples, one scoring more than one standard deviation above the group mean on the LOC and one scoring more than one standard deviation below the mean. The hypothesis of equality of group mean scores was rejected for five of the six subscales. See Table 4.

The intercorrelations of the six subscales of the MBI were consistent with the findings of Maslach et al. (1981) The PF and PI subscales demonstrated significant negative correlation with the EF, EI, DF, and DI subscales (p<.05). The intensity and frequency subscales for each major subscale of the MBI correlated very highly (r = .679054 to .823526, p<.001).

TABLE 3

Correlation Matrix For Background and Stress Measures

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TABLE 4

T-Test Comparisons of Hi-LOC And Lo-LOC Sample Scores On The MBI, GTA, and WPS

Item		Low - LOC Mean S.D.		High - LOC Mean S.D.			t-score/	Signi- ficance			
MBI-EF	Scale	16.50	7	9.26	25.22 /	7	13.75	1.6377	7	17	+
MBI-EI	Scale	21.00	1	10.21	32.56 /	/	15.87	1.9085	1	17	p<.05
MBI-DF	Scale	4.2	1	3.29	10.56 /	1	7.10	2.5510	1	17	p<.025
MBI-DI	Scale	6.1	1	4.41	12.67 /	/	8.97	2.0592	1	17	p<.05
MBI-PF	Scale+	35.9	1	7.49	25.67 /	/	10.57	2.4552	1	17	p<.025
MBI-PI	Scale+	40.1	1	8.21	32.89 /	/	14.70	1.3389	1	17	.
GTA		96.88	1	17.82	100.55 /	1	14.35	. 4977	1	17	*
WPS		. 66	1	.19	.94 /	1	.53	. 7587	1	17	+

Unable to reject the hypothesis of no difference between the means at the 95 percent confidence level C.V. of t = 1.7396 (1-tailed t-test)

+ Lower scores on these scales indicate higher unfavorable stress.

Changes in Test Scores Over Time

The class mean MBI subscale, the GTA, and the WPS scores obtained during the two testing periods were compared to determine the degree of change in these factors over time. A t-test was performed on the difference between the initial and retest class means on each of the instruments, using a 95 per cent confidence interval as the decision factor for statistical significance. The results of this analysis are summarized in Tables 5 and 6.

It was hypothesized by the author that the mean MBI and WPS scores of the the first year students would be higher -indicating more unfavorable stress -- on the follow-up test than on the initial test. Although the actual changes in five of the six MBI subscale scores did indicate this trend, only one subscale achieved the desired level of significance. The mean WPS scores of these students showed a slight decrease in the degree of physical complaints reported, though this did not achieve the level of significance desired.

The mean MBI and WPS scores of the second year students were hypothesized to be lower upon transfer to the residency phase. Four of the six MBI subscales; EF, EI, DF, DI, showed a statistically significant decrease in unfavorable stress. The other two MBI scales, PF and PI, showed a moderate decrease in unfavorable stress, but did not achieve the desired level of significance. (On the PF nad PI scales, lower scores denote a higher degree of unfavorable stress) The WPS scores showed a statistically significant decrease in physical complaints (p<.05).
The changes in the students' responses to stress noted above may be reflective of the influence of the degree of exposure to academic environmental stressors, or of a developmental trend in the individual student's responses to the their environment, all other things being equal. Of particular interest was the fact that the second year students manifested a significant reduction in unfavorable stress after leaving the dicatic phase and entering the residency phase of the program. This adds weight to the assumption that the didactic phase is quite stessful.

T-Test Comparisons of Initial And Retest Scores On The MBI, GTA, and WPS - 1st Year Class

	First Period Second Period		eriod	t-score/D.F.	Signi-			
Item	Mean		S.D.	Mean		S.D.		ficance
MJI-EF Scale	21.53	7	9.09	23.29	7	11.43	.6770 / 61	*
BI-EI Scale	28.65	1	10.28	29.32	1	11.74	.2399 / 61	*
WDI-DF Scale	7.38	1	4.56	8.29	1	6.33	1.9308 / 61	p<.05
MBI-DI Scale	9.22	1	5.81	10.64	1	6.64	.9080 / 61	*
MBI-PF Scale+	32.09	1	9.23	29.52	1	9.83	1.0732 / 61	*
MBI-PI Scale+	36.47	1	7.72	33.90	1	9.11	1.2066 / 61	*
GTA	96.5	1	13.3	96.6	1	9.2	.0347 / 62	*
WPS	.69	1	.23	.54	1	.27	1.2140 / 61	*

Unable to reject the hypothesis of no difference between the means at the 95 percent confidence level C.V. of t = 1.6707, D.F. = 63 ((-tailed t-test))

+ Lower scores on these scales indicate higher unfavorable stress.

TABLE 6

T-Test Comparisons of Initial And Retest Scores On The MBI, GTA, and WPS - 2nd Year Class

		First	Period	Second	Period	t-score/D.F	. Signi-
Item		Mean	S.D.	Mean	S.D.		ficance
MBI-EF	Scale	25.41	14.35	17.97	/ 10.27	2.3843 / 62	p<.025
MBI-EI	Scale	17.34 /	11.82	11.06	/ 6.09	2.6771 / 62	p<.001
MBI-DF	Scale	7.16 /	6.21	3.31	/ 3.37	3.3899 / 62	p<.001
MBI-DI	Scale	10.66 /	8.19	6.13	/ 7.13	2.3607 / 62	p<.025
MBI-PF	Scale+	31.44 /	9.92	34.94	/ 6.98	1.6321 / 62	*
MBI-PI	Scale+	38.00 /	/ 10.46	39.59	/ 6.18	.7417 / 62	¥
GTA		94.67	18.77	92.91	/ 12.28	.4460 / 63	*
WPS		.66 /	.29	.45	/ .09	1.9578 / 61	p<.05

* Unable to reject the hypothesis of no difference between the means at the 95 percent confidence level C.V. of t = 1.6707, D.F. = 61 (1-tailed t-test) + Lower scores on these scales indicate higher unfavorable

stress.

Type A Behaviors and Perceived Stress

The class mean scores on the *Glazer Self Test for Type A Personality* (GTA) for both classes fell in the middle of the "cardiac prone", Type A2 range. The lowest score obtained from the sample still fell within the mixed Type AB range. (See the rating scale for this test attached at Appendix C.) The distribution of the scores was negatively skewed. The median and mean scores were nearly equal. These factors indicate that the group as a whole tended toward Type A behavior.

It was hypothesized that the GTA scores of the first year students would increase over time in the program, and the scores of the second year students would decrease after transfer to the residency phase. No significant difference was noted for either of the classes (t = .4456, 63 D.F. and t = .0346, 62 D.F.).

It was hypothesized that students with a highly external LOC (greater than one standard deviaion above the mean) would exhibit higher GTA scores than those with a more internal LOC (less than one standard deviation below the mean). No statistically significant difference was noted between the group mean scores (t = .4977, 17 D.F.).

No significant difference was noted between the mean MBI subscale scores or the mean WPS scores for two samples of students drawn from the extremes of the GTA score distribution, those with a GTA score greater than one standard deviation above the mean and those with a GTA score less than one standard deviation below the mean (t values were all less than 1.09, D. F. 23)

A t-test of the hypothesis that the test and retest GTA scores of the students would differ significantly could not be supported by the data (See Tables 5 and 6.). There was no significant change in either class over the period of the study.

Academic Probation and Perceived Stress

It was hypothesized that the students on academic probation would have higher stress scale scores than those not on probation. There was no significant difference between the mean MBI or WPS scores for students on academic probation or those off academic probation. The score on the emotional exhaustion subscales of the MBI approached significance for a one-tailed t-test with 61 degrees of freedom. The t-value for the EF and EI scales were 1.5989 and 1.4783 respectively. The samples were small for this comparison, but the effects of academic probation on perceived stress in the students could not be established at the level of significance desired for this study. It is important to note that the undergraduate GPA scores had no significant relationship with the other items analysed in Table 3. As previously noted the GRE scores demonstrated a strong negative correlation with the emotional exhaustion and depersonalization subscales of the MBI. indication that the students with higher GRE scores tended to experience fower of the unfavorable stress symptoms measured by those scalos.

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Sources of Stress and Adaptation

The subjects' responses to the Delphi questionairre were subjectively categorized to eliminate semantically similar categories and a frequency ranking was determined for each class separately. The categorization of responses on each questionnaire was done by two individuals separately and all differences were discussed before assigning a response to a particular category. The ten most frequently reported items identified by the students on the survey as sources of stress and stress adaptation assistance were determined to be major sources during the period evaluated. In addition, the specific subjects identified by the students as stressors were ranked according to frequency. The data is presented in Tables 7 through 12.

Although the data did not lend itself readily to correlative statistical analysis because of the open-ended survey approach used for its collection, the level of agreement between the responses of the two classes was remarkable.

The two classes agreed on eight out of ten of the general sources of stress. Several of the general areas identified as stressors by the Baylor students are listed among the top eight stressors identified by junior medical students in a study by Linn and Zeppa. (1984) Of note was the fact that both classes identified four of the same specific subjects as stressors, all given in the first two semesters of the dijactic phase, as primary stressors, even though the second year students had completed all

four of the didactic phase semesters. These courses; financial management, statistics, epidemiology, and economics were primarily quantitative in nature.

There was similar agreement on the sources of stress adaptation employed by the students, eight of the top ten factors listed. Support from family and peers and time away from studies were ranked among the top three by each class. Family and peer support were also identified as significant stress buffers by Constable (1983), Corley (1983), and Heins et al. (1984).

Stressors Identified By First Year Students#1

Source of Stress	Frequency of	Response*2
Family/Marital Conflicts or Changes	21	
Written Requirements (Composition)	16	
Term Papers, Essays		
Poor Quality of Instruction	14	
Preparation, Attitudes (Degradation	, (nc	
Ambiguity (Expectations)		
Excessive Workload (Readings)	12	
Overlapping Deadlines		
Insufficient Study Time	10	
Requirement for Group Work	9	
Excessive Time, Poor Match of		
Personality and Skills		
Lack of Feedback on Performance	8	
Insufficient Personal or Family Time	7	
Written Examinations	6	
Midterms and Finals		
Anxiety Regarding PCS Assignments/Movi	ing 5	

TABLE 8

Specific Academic Subjects As Stressors - First Year 1SubjectFrequency of Response*2Financia! Management (Case Studies)13Statistics7Economics6Epidemiology5Organizational Theory and Behavior5

1 Reporting Period Includes First and Second Semesters 2 n = 31

Stressors Identified By Second Year Students *1

Source of Stress	Frequency of	Response#2
Comprehensive Oral Examinations	17	
Written Requirements (Composition) GRPP, Term Papers	17	
Preparation for Moving/PCS	15	
Family/Marital Conflicts or Changes	13	
Excessive Workload (Readings) Overlapping Deadlines	11	
Poor Quality of Instruction or Conflict With Instructors	11	
Inadequate Personal or Family Time	10	
Insufficient Study Time	8	
Military Demands - Uniform, PT, Weight	8	
Personal Desire to Succeed or Performa Dissatisfaction	nce 7	

TABLE 10

Frequency of Response

Specific Academic Subjects As Stressors - 2nd Year*1

Subject *2

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_----Financial Management (Case Studies) 8 5 Economics Quality Assurance/Risk Management 5 Statistics/Epidemiology 4 Operations Research 2 *1 Students' Reports Include Fourth Semester and

Residency Transition Period *2 n = 32

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Sources Of Stress Adaptation Support - First Year Students

Source	Frequency	of	Response*1
Support from Classmates - Cohesion	ب جزاء خانه سن جانه کن که ای جرا که	18	بیده جنه خته خته که خنه هم ه
Time Away - Breaks, Outside Interests		16	
Support from Family, Spouse, Significant Others		14	
Support from Faculty - Handouts, Reviews, Tutoring		12	
Regular Exercise ~ Aerobics, Running		11	
Self Confidence - Successes, Experience, Goal Readjustment		9	
Specific Support of Counselors, or Program Director		6	
Church, Prayer, Religion		5	
Group Study - Outlines, Reviews		5	
Time Management, Goal Setting		5	

TABLE 12

Sources Of Stress Adaptation Support - Second Year Students

Source	Frequency of Response*2
Support from Family, Spouse, or Significant Others	24
Time Away from Work	22
Leave, Social or Outside Interes	sts
Support from Classmates, Peers, Alumnis	17
Regular Exercise - Running	14
Faculty or Preceptor Support	11
Religion, Prayer, Church	9
Self Confidence, Experience, Success Attitude Readjustment	ses, 9
Time Management, Goal Setting	5
Individual vs Group Projects	3
Professional Counseling	2
1 n = 31 2 n = 32	

VI. CONCLUSIONS AND RECOMMENDATIONS

Implications for the Graduate Program In Health Care Administration

The study results suggest a number of areas of consideration with regard to the conduct of the Baylor program. These considerations can be addressed in two primary areas: academic and environmental issues; and methods for the early identification, intervention, and prevention of unfavorable stress outcomes.

Academic and Environmental Issues

Because the students showed such a strong tendency toward Type A behaviors, the faculty would be advised to play down the element of competition between students. In addition, provision of a significant amount of direct, immediate, and constructive feedback on individual performance would appear to be of value in aleviating the students' anxiety regarding their needs for success. Further, great care should be taken in insuring that the deadlines for major examinations and papers are spread out to limit the students' already strong time urgency concerns.

The students identified a number of specific sources of stress related to the academic environment in the program. The common sources of environmental stress identified by the students were the excessive workload, limited time for study and personal needs, the writing requirements, examinations (both oral and

written), and conflicts between their personal needs for success and limited feedback on performance. These have been identified as consistent concerns for other groups of graduate students. (Heins et al., 1984)

The students perceived that the faculty were often distant, somewhat ambiguous in their expectations as to the students' performance, occasionally degrading or condescending in attitude, or in an adversarial relationship with the students. At the same time the students championed certain members of the faculty for their provision of additional tutorial support, and for their one-on-one support as individual instructors and counselors. Addiitional emphasis on enhanced faculty-student interaction and communication appears to be needed. Regular joint faculty-student feedback sessions should be encouraged. As practicable, considering the time constraints on the faculty, the counselor-student relationship should be maximized. In a study of medical school faculty members, a total of only 48.6 minutes per week was reported to be spent counseling studnts. (Brown and Barnett, 1984) Berg and Garrard (1980) identified informal counseling relationships between staff or faculty and medical residents as a frequent source of support.

Prevention, Identification, and Intervention For Students at Risk

Early administration of some standard tools by behavioral science professionals for the assessment and identification of

students at risk for unfavorable stress should be considered. This study provides some insight into the value of the tools used as potential screening and assessment devices. The GRE scores appear to be a valid tool for identifying those at risk for unfavorable stress reactions. It is suggested that the Holmes and Rahe Situational Readjustment Rating Scale be used early in the academic year to identify those who are at risk for adverse physiological responses to stress due to an overload of life change. The cutoff score of 250 points oppears to be a valid score for differentiating between those at risk and those not at risk. Although further research is needed to more clearly identify the relationship of the Rotter Locus of Control and unfavorable stress responses, the tool shows value in identifying a group at potential risk, those with a high external locus of control. The Glazer Self Test for Type A Personality did not differentiate between high and low stress groups and should not be considered for screening purposes, but it does provide a quick means of feedback to students regarding their Type A behavioral tendencies.

The MasIach Burnout Inventory proved to be a valid measure of burnout or unfavorable stress reactions among the health care administration graduate students. The mean scores of the present population compared closely with those of the population upon which the test was standardized (n = 2,118), with the HCA students scoring slightly below the mean of the standard population on all of the scales. The MBI could be given early in the year and repeated at intervals to identify adverse changes in

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the students. The Wahler Physical Symptoms Inventory proved to be a complex tool which did not correlate significantly with any of the MBI subscales.

The stress management sessions initiated during the past two years should be continued, and expanded to include training in two additional areas, time management and relaxation techniques. This recommendation is based on the identification by the students of time pressures as major stressors, and the relatively high frequency of responses regarding the importance of exercise as a method of tension release. The work of Alan Lakein, as described in his book *How to Get Control Of Your Time And Your Life*, provides a simple approach to this complex problem. Herbert Benson, M.D., describes an easily understood and learned method of relaxation in his book *The Relaxation Response*.

Spouses and family members should be strongly encouraged to attend similar stress-management sessions. Family-related conflicts and changes were listed as significant sources of stress. The family was also seen as a major source of support by the students. Enhancing this important support system is an essential strategy.

Implications for Further Research

The results of this study raise a number of additional questions or areas for further research.

Additional research is needed regarding the interactive

affects of a number of the variables which were used to include measures of Type A personality, the Holmos and Rahe Situational Readjustment Rating Scale, GRE scores, age, and prior hospital experience. The Rotter Locus Of Control shows some potential as a tool to identify some of the students at risk for unfavorable stress reactions and its value may be even greater when studied in interaction with other variables. As an example, Linn and Zeppa (1984) found that students with a highly external LOC combined with low self-esteem experienced more unfavorable stress. The data already collected may be used in these studies but consideration should be given to adding to the sample from future classes with measurements taken at the same time periods during the program that the present data was drawn.

It would be helpful to repeat the study done by Corley (1983) regarding the relationship of age, sex, marrital status, and the presence of dependents in the home environment to experienced burnout with this population of graduate health care administration students. These studies should include an examination of the interactive effects of these variables on students' experience of unfavorable stress during the program. The data already collected could be used in this effort. Corley's work with professional nurses confirms some of the conclusions concerning these relationships from earlier studies using the MBI and tends to refute others (Maslach and Jackson, 1981).

The undergraduate GPA showed very little direct relationship with the other measures used in this study. Many of the faculty have verbally discounted its value in predicting the success of

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candidates in the graduate program, stating that most of the candidates had completed several years of successful adult work between their undergraduate experience and their enrollment in the graduate program. It would be valuable to develop some measure of demonstrated adult work-related knowledge and skill for correlation with both academic performance and experienced stress during the program. Additionally it would be valuable to explore the interrelationship of the students' actual academic performance and experienced stress.

The responses to the Delphi survey could be used with additional iterations to develop a survey tool for identification of stressors in this and other health care graduate programs. The development of such a tool could follow the methodology used by Heins et al. (1984) An alternative study approach would be to use the Heins instrument on the students in the Baylor program and compare the results with the populations of medical, law, and cther graduate student which Heins studied.

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Conclusions

The study identified that many of the students enrolled in the U. S. Army - Baylor University Graduate Program in Health Care Administration do experience a significant degree of unfavorable stress. The level of unfavorable stress experienced does appear to be related in part to the high intensity of academic demands as well as the related demands of the military vocational environment with its strong emphasis on competitiveness and its subordinating influence upon family-related and personal interests.

E. M. Gherman, M.D. (1981) outlines the enormous costs associated with stress related illnesses and injuries, to include premature employee deaths and the costs of recruiting and training replacements, related disability payments and medical bills, and the large percentage of work accidents [or in hospitals, stress-generated treatment errors]. J.E. Yates (1979) cites an old study published by the U.S. Clearinghouse for Mental Health Information which listed a \$17 billion annual decrease in U.S. Industry productivity caused by stress-related mental health disorders, and an estimated \$60 billion annual loss in productivity as a result of stress-related physical illnesses. In the health care industry, where the employee productivity factor is the primary source of continued financial viability due to the pressures of cost containment and where stress-related treatment errors can result in very costly malpractice claims, the

importance of stress management cannot be overstated.

The U.S. Army - Baylor University Graduate Program provides a unique high-stress environment where the faculty can assist the students in not only developing more effective personal coping skills, but in developing strategies for implimentation of corporate stress management programs in their future assignments as health care administrators. The effectiveness of such a program will be directly related to the amount of research, planning, resources, and time which is invested in this critical management arena.

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ANNEX A

Graduate Research Project Information Sheet

Subject: Environmental and Individual Precursors of Student Stress in the U.S. Army - Baylor University Graduate Program in Health Care Administration

Primary Researcher: Major Monte R. Watson (Baylor Class of 1983-85) 4906 El Presidio San Antonio, TX 78233 (512) 654-4528 or HCA office 221-6443/6136 (messages)

After 17 August 84: c/o Administrative Resident HQ, William Beaumont Army Medical Center El Paso, TX 79920 (915) 569-2203 : AV (979)

Baylor Staff Advisors: LTC Robert Moore, COL Joseph Constable Research Advisor: CPT Fred Garland, AHS Behavioral Science Division

Purpose: To identify organizational/environmental and personal precursors of stress in students, and to identify those contributive factors which may be lessened through management techniques.

Procedures:

1. Members of the 1983-1985 and 1984-1986 classes will be administered a brief demographic survey, a life event stress scale, a Type A/B behavior scale, and a survey measuring internal vs. external expectations for control early in the summer semester.

2. At the midpoint of the summer semester and during the midpoint of the fall semester each student will be administered scales which measure perceived or experienced stress.

3. These scales will be scored and the results (along with a general interpretation) will be made available to any student who requests to see them. Additional clinical interpretation of the scales will be provided by CPT Fred Garland, psychologist, only if specifically requested.

4. The results of the data collection above will be kept confidential at all times by the primary researcher and his advisors. All data will be assigned a random numerical code for analysis and reporting.
5. No student is under any obligation to participate in this study. Students may withdraw from the study at any time without consequence.

Your participation in this study will be greatly appreciated. It is hoped that the results of this study will lead to reduction of unnecessary stress factors and thus improvement in the graduate education experience of the present and future students enrolled in the U.S. Army - Baylor Graduate Program.

I will be available at the addresses and phone numbers above, if you have any questions regarding this research project.

ANNEX B

U.S. Army - Baylor University Graduate Program in Health Care Administration

Graduate Research Project

Subject: Environmental and Individual Precursors of Student Stress in the U.S. Army - Baylor University Graduate Program in Health Care Administration

Primary Researcher: Major Monte R. Watson (Class of 1983-85)

Subject Background Data: The following background data is crucial to the scope of the study noted above. Your release of this information is of course strictly voluntary, and all information will be held in strict confidentiality by the researcher and his advisors.

Name:_____ Last 4 Numbers of SSN:_____

Age:_____ Sex:____

Rank:_____ Date of Rank:_____ Primary MOS:_____

Years in Service:_____ Years of hospital experience:_____

Marital Status (S or M): _____ Do you have Children?:_____

Do the children live with you?:_____

If single, do you have a roomate and/or pets?:_____

Do you have a prior graduate degree?:_____

Optional:

Undergraduate GPA:_____ GRE Overall Score:_____

(Verbal + Quantitative)

NOTE: Please address any questions concerning this survey or the study in general to Major Watson.

ANNEX C

Social Readjustment Rating Scale

This scale measures the stress of adjusting to life change and indicates the relative energy required to adapt to each situation or life event. If an event listed below has occurred in your life during the last twelve (12) months, put a circle around the number assigned to it.

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Change in eating habits 15 Vacation 13 Christmas 12	Change in number of family get-to-tog	thers 15
Vacation 13 Christmas 12	Change in eating habits	15
Christmas 12	Vacation	13
•••	Christmas	12
Minor violations of the law 11	Minor violations of the law	<u></u> 11

ANNEX D

SELF TEST FOR PERSONALITY-TYPE

As you can see, each scale below is composed of a pair of adjectives or phrases separated by a series of horizontal lines. Each pair has been chosen to represent two kinds of contrasting behavior. Each of us belongs somewhere along the line between the two extremes. Put a check mark where you think you belong between the two extremes.

1 2 3 4 5 6 7

1.	Doesn't mind leaving things temporarily unfinished	-	-	-	-	-	-	-	Must get things finished once started
2.	Calm and unhurried about appointments	-	-	-	-	-	-	-	Never late for appoint- ments
3.	Not competitive		_			_	_	_	Highly competitive
4.	Listens well, lets others finish speaking	-	~	-	-	-	-	_	Anticipates others in con- versation (nods, inter- rupts, finishes sentences for the other)
5.	Never in a hurry, even when	-	-	_	-	-	-	-	Always in a hurry
	Able to wait calaly								Hanney when whiting
0. 7	Hole to wait calmiy	-	-	-	-	-	-	-	Oneasy when waiting
<i>·</i> ·	Easygoing		-	-	-		-		Always going full speed
0	Takan man thing at a time								Aneau Trian to do opro this opo
٥.	lakes one ching at a cime	-		-	-	-	-	-	thing at a time thinks
									about what to do next
9	Slow and deliberate in sneed	5							Vigorous and forceful in
	brow and deriver ace in speech	-	-	-	-	-	-	-	sneech (uses a lot of
									gestures)
10.	Concerned with satisfying								Wants recognition by others
	himself, not others	-	-	-	-	-	-		for a job well done
11.	Slow doing things					_	_		Fast doing things (eating,
		-	_	-	-	-	_	-	walking, etc.)
12.	Easygoing	_		_	_	_	_	_	Hard driving
13.	Expresses feelings openly	_	_	_	_	_	_	_	Holds feelings in
14.	Has a large number of	_	_	_	_	_	_	_	Few interests outside work
	interests								
15.	Satisfied with job			_	-		_	-	Ambitious, wants quick
									advancement on job
16.	Never sets own deadlines	-		_	_	_	_	_	Often sets own deadlines
17.	Feels limited responsibility		-	_	_	_	_	_	Always feels responsible
18.	Never judges things in terms		_	_		_	_	_	Often judges things in
	of numbers								terms of numbers (how
									many, how much)
19.	Casual about work		_	-	_	~	-	_	Takes work very seriously
									(works weekends, brings
									work home)
20.	Not very precise		-		-		_	-	Very precise (careful
									about detall)

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ANNEX E

This is a questionaire to find out the way in which certain important events in our society effect different people. Each item consists of a pair of alternatives. Please select the one statement of each pair (and only one) which you more strongly believe to be the case as far as you're concerned. Be sure to select the one you actually believe to be more true rather than the one you think you should choose or the one you would like to be true. This is a measure of personal belief: obviously there are no right or wrong answers.

- 1. A. Children get into trouble because their parents punish them too much.
 - B. The trouble with most children nowadays is that their parents are too easy with them.
- 2. A. Many of the unhappy things in people's lives are partly due to bad luck.
 - B. People's misfortunes result from the mistakes they make.
- 3. A. One of the major reasons why we have wars is because people don't take enough interest in politics.
 - B. There will always be wars, no matter how hard people try to prevent them.
- 4. A. In the long run people get the respect they deserve in this world.
 - B. Unfortunately, an individual's worth often passes unrecognized no matter how hard he tries.
- 5. A. The idea that teachers are unfair to students is nonsence.
 - B. Most students don't realize the extent to which their grades are influenced by accidental happenings.
- 6. A. Without the right breaks one cannot be an effective leader.
 - B. Capable people who fail to become leaders have not taken advantage of their opportunities.

- 7. A. No matter how hard you try some people just don't like you.
 - B. People who can't get others to like them don't understand how to get along with others.
- 8. A. Heredity plays the major role in determining one's personality.
 - B. It is one's experiences in life which determine what they're like.
- A. I have often found that what is going to happen will happen.
 - B. Trusting to fate has never turned out as well for me as making a decision to take a definite course of action.
- 10. A. In the case of the prepared student there is rarely if ever such a thing as an unfair test.
 - B. Many times exam questions tend to be so unrelated to course work that studying is really useless.
- 11. A. Becoming a success is a matter of hard work, luck has little or nothing to do with it.
 - B. Getting a good job depends mainly on being in the right place at the right time.
- 12. A. The average citizen can have an influence in government decisions.
 - B. This world is run by the few people in power, and there is not much the little guy can do about it.
- 13. A. When I make plans, I am almost certain that I can make them work.
 - B. It is not always wise to plan too far ahead because many things turn out to be a matter of good or bad fortune anyhow.
- 14. A. There are certain people who are just no good.
 - B. There is some good in everybody.
- 15. A. In my case getting what I want has little or nothing to do with luck.
 - B. Many times we might just as well decide what to do by flipping a coin.
- 16. A. Who gets to the boss often depends on who was lucky enough to be in the right place first.
 - B. Getting people to do the right thing depends upon ability, luck has little or nothing to do with it.

17.	Α.	As far as world affairs are concerned, most of us are the victims of forces we can neither understand, nor control.
	в.	By taking an active part in political and social affairs the people can control world events.
18.	Α.	Most people don't realize the extent to which their lives are controlled by accidental happenings.
	в.	There really is no such thing as "Luck."
19.	Α.	One should always be willing to admit mistakes.
	в.	It is usually best to cover up one's mistakes.
20.	Α.	It is hard to know whether or not a person really likes you.
	в.	How many friends you have depends upon how nice a person you are.
21.	Α.	In the long run the bad things that happen to us are balanced by the good ones.
	в.	Most misfortunes are the result of lack of ability, ignorance, laziness, or all three.
22.	Α.	With enough effort we can wipe cut political corruption.
	в.	It is difficult for people to have much control over the things politicians do in office.
23.	Α.	Sometimes I can't understand how teachers arrive at the grades they give.
	в.	There is a direct connection between how hard I study and the grades I get.
24.	Α.	A good leader expects people to decide for themselves what they would do.
	Β.	A good leader makes it clear to everybody what their jobs are.

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- 25. A. Many times I feel that I have little influence over the things that happen to me.
 - B. It is impossible for me to believe that chance or luck plays an important role in my life.
- 26. A. People are lonely because they don't try to be friendly.
 - B. There's not much use in trying too hard to please people, if they like you, they like you.
- 27. A. There is too much emphasis on athletics in high school.
 - B. Team sports are an excellent way to build character.
- 28. A. What happens to me is my own doing.

The state of the second s

- B. Somtimes I feel that I don't have enough control over the direction my life is taking.
- 29. A. Most of the time I can't understand why politicians behave the way they do.
 - B. In the long run the people are responsible for bad government on a national as well as on a local level.

ANNEX F

On the following pages are several statements of job-related feelings you might have. Please read each statement carefully and decide if you ever feel this way about your present job. If you have never had this feeling, check the box marked "NEVER" and go on to the next statement. However, if you have exerienced this feeling, indicate HOW OFTEN you feel it by circling the appropriate number on the 6-point scale. Then, decide HOW STRONG the feeling is when you experience it by circling the appropriate number on the 7-point scale. An example is shown below.

Freque	ncy of	Feeling:	HOW	OFTEN			
	1	2		3	4	5	6
NEVER	A FEW TIMES YEAR	ONCE A A MONTH OR LES	4 55	A FEW TIMES A MONTH	ONCE A WEEK	A FEW TIMES A WEEK	EVERY DAY
Intens	ity of	Feelings:	HOW	STRONG			
VERY M BARELY NOTICE	1 ILD, ABLE	2	3	4 MODERA	S NTE	6	7 MAJOR VERY STRONG

Example:

(

00. I feel depressed at work.

) Never	HOW	OFTEN:	1	2	3	4	5	6
	HOW	STRONG:	1	2	3	4	5	6

If you occasionally feel depressed at work (say a few times a month) you would circle the number 3. If, when you do feel depressed, it is a fairly strong feeling, but not as strong as you can imagine, you would circle a 6.

* The term recipients refers to those receiving input from your efforts: classmates, instructors, supervisors, patients, subordinates, etc.

HOW	OFTEN:	1 A few 1 times a year	2 Monthly	3 A fe time a mo	ew es onth	W	4 Geekly	,	A f tin a F	5 Few Nes Neek	ם	6 Pily
HOW	STRONG:	1 Very mild			1	4 lod e r	ate				Ve st	7 ry rong
1.	I feel	emotional	ly drai	ned fro	ວດາ ຄ	ny wa	rk.					
	() Ne	ever.	HOW C HOW S	FTEN: TRONG:	1 1	2 2	3 3	4 4	5 5	6 6	7	
2.	I feel	used up a	t the e	ind of t	the	work	day.					
	() Ne	ever.	HOW C HOW S	OFTEN: STRONG:	1 1	2 2	2 2	4 4	5 5	6 6	7	
3.	I feel another	fatigued (day on t	when I h e job.	get up	in	1he	morni	ng	and	have	to	face
	() Ne	aver	HOW C HOW S	OFTEN: STRONG:	1 1	2 2	3 3	4 4	5 5	6 6	7	
4.	Working	y with peop	ple all	day i	5 r(eally	/ a st	tra	in fo	or me	-	
	() Ne	₽ver	HCW C How s	DFTEN: STRONG:	1 1	2 2	3 2	4 4	5	6 5	7	
5.	I feel	burned ou	t from	my worl	k.							
	() N	ever	HOW 0 How 9	OFTEN: STRONG:	1 1	2 2	3 3	4 4	5 5	6 6	7	
6.	I feel	frustrate	d by my	/ јођ.								
	() Ni	ever	HOW C How s	DFTEN: STRONG:	1 1	2 2	3 3	4 4	5 5	6 6	7	
7.	I feel	I am work	ing too	b hard	on	my jo	ъ.					
	() Ni	ever	HOW (How s	OFTEN: STRONG:	1 1	2 2	3 3	4 4	5 5	6 5	7	
З.	Workin	g with peo	ple di	rectly	put	s too	o muci	р	ress	ure o	n me	!.
	() N	ever	но м (Но м 9	OFTEN: STRONG:	1 1	2 2	3 3	4 4	5 5	6 6	7	

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HOW	OFTEN:	1 A few times a year	2 Month	nly	3 A few times a mont	Łħ	4 Wee	kly	A d tin a d	5 Few ness veek	6 Daily
HOW	STRONG:	1 Very mild				Mo	4 derat(•			7 Very strong
9.	I feel	like I am	at th	e end	of my	roj	p e.				
	() N a	ver	HOW HOW	OFTEN: STRONG	1 : 1	2 2	2 2	4 4	5	6 6	7
10.	I can	easily und	iersta	nd how	my re	ci	pient	s fee	el at	out	things.
	() Ne	ver	HOW HOW	OFTEN: STRONG	1 : 1	2 2	3 3	4 4	5 5	6 6	7
11.	I deal	very effe	ctive	ly wit	h the	pro	oblem	s of	my r	ecip	pients.
	() Ne	ver	HOW HOW	OFTEN: STRONG	1 : 1	2 2	3 3	4 4	5 5	6 6	7
12.	I feel throug	I am posi h my work.	tiv el	y infl	uencir	ו פר	other	beot	oles	live	15
	() Ne	ver	HOW HOW	OFTEN: STRONG	1 : 1	2 2	3 3	4 4	55	6 6	7
13.	I feel	very ener	getic	•							
	() Ne [,]	ver	HOW HOW	OFTEN: STRONG	1 : 1	2 2	2 2	4 4	5 5	6 6	7
14.	I can	easily cre	ate a	relax	ed atn	nosį	phere	with	ה שא	reci	pients.
	()Ne [,]	ver	HOW HOW	OFTEN: STRONG	1 : 1	2 2	3 3	4 4	5 5	6 6	7
15.	I feel	exhilarat	ed af	ter wo	rking	c 10	osely	with	пту	reci	pients.
	() Ne	ver	MOH	OFTEN: STRONG	1	2 2	3 3	4 4	5 5	გ გ	7

HOM	OFTEN:	1 A few times a year	2 Month	ily A t	3 few imes mont	Ŀħ	4 Weel	kly	A ti a	5 few ines week	Da	6 Nily
HOW	STRONG:	i Ver mil:	l 7y 1			Mo	4 dera	te			7 Ve str	ery rong
16.	I have	accomplis	shed n	nany wo	rthwi	nile	thi	ngs i	ייה ח	y jot	D -	
	() Ne	ver	HOW HOW	OFTEN: STRONG	1 : 1	2 2	2 2	4 4	5 5	6 6	7	
17.	In my	work I dea	al wit	th emot	iona	l pro	oble	ms ve	ry (calm]	ly.	
	() Ne	ver	HOW HOW	OFTEN: STRONG	1 : 1	2 2	3 3	4 4	5 5	6 6	7	
18.	I feel object	I treat : 5.	some r	ecipie	nts	as i	f th	ey we	re	imper	rsona	1
	() Ne	ver	HOW HOW	OFTEN: STRONG	1 : 1	2 2	2 2	4 4	5 5	6 6	7	
19.	I've b	ecome mor	e call	lous to	ward	рео	ple	since	I	took	this	job.
	() N	lever	HOW HOW	OFTEN: STRONG	1 : 1	2 2	3 3	4 4	5 5	6 ර	7	
20.	I worr	y that th	is jol	o is ha	rden	ing	me e	motic	nal	ly.		
	()Ne	ver	HOM HOM	OFTEN: STRONG	1 : 1	2 2	3 3	4 4	5 5	6 6	7	
21.	I don'	t really	care	what ha	ppen	s to	som	e rec	ipi	ents	•	
	() Ne	iver	НОМ НОМ	OFTEN: STRONG	1	2 2	3 3	4 4	5 5	6 6	7	
22.	I feel	recipien	ts bl	ame me	for	some	of	their	p r	oble	ms.	
	() Ne	ver	HOW	OFTEN:	1	2	37	4	5	6	7	

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WHAT YOU ARE TO DO:

Below is a list of physical troubles. Please indicate how often each of these bothers you. Do this by circling the number to the right of each trouble which shows how often you are bothered by that trouble. Keep in mind that the LARGER the number the MORE OFTEN the trouble bothers you. Please DO NOT SKIP any troubles. You may take as much time as is necessary.

1.	Nausea (Feeling like throwing up).	0	1	2	3	4	5	
2.	Headaches.	0	1	2	3	4	5	
3.	Trouble with ears or hearing.	0	1	2	3	4	5	
4.	Neck aches or pains.	0	1	2	3	4	5	
5.	Feeling hot or cold regardless of							
_	the weather	0	1	2	3	4	_5	
6.	Arm or leg aches or pains.	0	1	2	3	4	5	
7.	Shakiness.	0	1	2	3	4	5	
8.	Swelling of arms, hands, legs,		_	_			_	
	or feet	0	1	2	3	4	5	
9.	Stuttering or stammering.	0	1	2	3	4	5	
10.	Difficulty sleeping	0	1	2	3	4	5	
11.	Losing weight.	0	1	2	3	4	5	
12.	Backaches.	0	1	2	3	4	5	
13.	Intestinal or stomach trouble.	0	1	2	3	4	5	
14.	Difficulty with urination (Passing							
	water).	0	1	2	3	4	5	
15.	Heart trouble.	0	1	2	3	4	5	
<u>1</u> 6.	Trouble with teeth.	0	1	2	3	4	5	
17.	Numbness, or lack of feeling in any	•	1	•	•		-	
	part of the body.	U	T	2	3	4	5	
18.	Aches or pains in hands or teet.	0	1	2	3	4	5	
19.	Fainting spells.	0	1	2	3	4	5	
20.	Excessive perspiration.	0	1	2	3	4	5	
21.	Abnormal blood pressure.	0	1	2	3	4	5	

	• •							
/								r /
		Lenger .		Teore Care	Nour Office		NEUNIL C	/
22.	Paralysis (Unable to move parts of	٥	1	2	2	A	5	
^ 2	the body).	0	1	2	ა ე	4	5	
23.	Irouble with eyes or vision.	U	T	2	ა	4	5	
24.	Burning, tingling or crawling feelings in the skin.	0	1	2	3	4	5	
25.	Skin trouble (Rashes, boils or itching)	0	1	2	3	4	5	
26	Feeling tired	Õ	1	2	3	4	5	
27	Muscular weakness	Ō	ī	2	3	4	5	
28	Dizzy spells	Õ	1	2	3	4	5	
20.	Muscular tensions	ñ	ī	2	3	4	5	
20.	Any trouble with the senses of	v	•	-	Ũ	•	•	
50.	taste or smell.	0	1	2	3	4	5	
31.	Difficulty breathing (Short of						_	
•	breath, asthma, etc.).	0	1	2	3	4	5	
32.	Twitching muscles.	0	1	2	3	4	5	
33.	Poor health in general.	0	1	2	3	4	5	
34.	Excessive gas.	0	1	2	3	4	5	
35.	Difficulty swallowing.	0	1	2	3	4	5	
36.	Seizures (Convulsions or fits).	0	1	2	3	4	5	
37.	Gaining weight.	0	1	2	3	4	5	
38.	Difficulty with appetite.	0	1	2	3	4	5	
39.	Bowel trouble (Constipation or							
	loose bowels).	0	1	2	3	4	5	
40.	Vomiting.	0	1	2	3	4	5	
<u>41.</u>	Chest pains.	0	1	2	3	4	5	
42	Hay fever or other allergies.	0	1	2	3	4	5	

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Please write down any important physical symptoms not listed above which trouble you: _

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ANNEX H

Sub	ject ID No.:
1.	List in descending order the top five (5) events, circumstances, situations, courses, or requirements which you feel most greatly added to your personal stress during the preceeding semester.
2.	
3.	
4.	
5.	
	List in descending order the top five (5) events, circumstances, situations which assisted you most in adapting to the stress of the previous semester.
1.	
2.	
3.	
4.	
5.	
	List in descending order the top five (5) events, circumstances, situations, courses, requirements which you feel most greatly added to your personal stress during the didactic phase of the graduate program.
1.	
2.	
3.	
4.	
5.	
Lis	st any other comments you may have regarding the graduate program.
ANNEX I

DEPARTMENT OF THE ARMY WILLIAM BEAUMONT ARMY MEDICAL CENTER EL PASO, TEXAS 79920

17 December 1984

ATTENTION OF

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Administrative Resident

SUBJECT: Graduate Research Study

U.S. Army-Baylor University Graduate Program in Health Care Administration Student Fort Sam Houston, Texas 78234-6100

Dear Fellow Student:

The attached surveys and questionnaires are being sent to you to assist me in completion of a graduate research project designed to study the effects of the Baylor program on its students. It is hoped that this research will identify problem areas which promote stress among the students at Baylor, as well as areas for potential intervention.

Your assistance in completion and mailing of the attached questionnaire is essential to my completion of this study. I appreciate the effort required to complete such a lengthy survey, but this information will be invaluable in guiding changes in the program. Please complete all pages and return to: Commander, William Beaumont Army Medical Center, ATTN: Admin Resident (MAJ Watson), El Paso, TX 79920-5001 (Telephone: AV 979-2027/2106/2203).

If you desire a copy of this study summary report, please check the appropriate block below.

I desire a copy: Yes ____ No ____

Name:

Address:_____

Thank you for your participation.

Sincerely,

Monte R. Watson Major, SP Administrative Resident