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Correlates of Perceived and Experienced Life Stress

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CORRELATES OF PERCEIVED AND EXPERIENCED LIFE STRESS

by

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This Thesis submitted by Jerry Allan Boriskin in partial fulfillment for the Degree of Master of Arts from the University of North Dakota is hereby approved by the Faculty Advisory Committee under whom the work has been done.

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ABSTRACT

Previous researchers employing objective measures of life stress such as the Social Readjustment Rating Scale have demonstrated an association between life change and illness onset. More recently, because of their apparently superior predictive validity, individualized ratings of stressfullness of life events have been employed. The psychological contributors to perception of life events, as well as psychological correlates to the level of experienced stress, are basically unexplored.

The present study investigated the association of perceived stress and experienced stress with the psychological constructs measured by: the Repression-Sensitization Scale, the Adult Nowicki-Strickland Scale, the Hidden Figures Test, and the Mood Adjective Checklist. One hundred ten undergraduate subjects completed a modified College Schedule of Recent Experiences along with the above measures. Results show that Repression-Sensitization and Hidden Figures are correlated with perceived stress. In addition, the amount of stress that subjects have experienced in their lifetimes is correlated with Repression-Sensitization and Hidden Figures. That is, sensitizers and field dependent subjects tend to perceive life events as more stressful, and have experienced more life changes. In the present sample, demographic variables were not related to perceived life stress, and only age was correlated with experienced life stress. Experienced stress as measured by the individualized scoring method was significantly higher than

experienced stress as measured by the objective scoring method. Implications of these findings, as well as suggestions for future research, are discussed.

CHAPTER I

INTRODUCTION AND REVIEW OF THE LITERATURE

It has long been thought that life stress is intimately linked to the onset of physical illness. Cannon (1929), by his systematic experimentation and observation of the physiological concomitants of strong emotions (e.g., fear, anger), provided some foundation to the argument that stressful life events can be harmful. ". . . the persistent derangement of bodily functions in strong emotional reactions can be interpreted as due to persistence of the stimuli which evoke reactions. They may persist because not naturally eliminated by completion of the emotional impulse, or because completion of the impulse is made impossible by circumstances." (Cannon, 1929, p. 261)

Systematic association of life events and physical illness began in the 1930's with Adolph Meyer's (1951) use of the life chart as a tool in medical diagnosis. Along with the standard medical history, Meyer gathered data on the life events associated with each illness. Among the events he considered important were: " . . . the changes of habitat, school entrance, graduation or changes, or failures; the various 'jobs'; the dates of possibly important births and deaths in the family, and other fundamentally important environmental incidents." (Meyer, 1951, p. 53) Thus, Meyer observed that the events need not be catastrophic to be associated with the onset of illness.

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Wolff (1950), in an attempt to account for the growing complex-
ity of the association of stress and physical health, set forth the
following postulates:

> 1. Regardless of the apparent magnitude, the capacity of a given
> stress to evoke a protective reaction is a function of its signifi-
> cance to the implicated individual.
> 2. The significance of a given stress for the individual determines,
> according to his temperament and past experiences, the characteris-
> tics of the protective reaction.
> 3. When an individual exhibiting a given protective reaction pat-
> tern with co-existing symptoms is confronted by a situation which,
> through its new and different meaning evokes correspondingly differ-
> ent reactions, the latter may so overshadow the former as to cause
> the symptom to disappear temporarily. (Wolff, 1950, p. 1079)

Considered somewhat controversial at the time, these postulates
have been relevant to subsequent research; the particular importance of
the first postulate to this study will be discussed later in this
section.

Hinkle (1974), in a review of his massive epidemiological stud-
ies (both retrospective and prospective) on Bell Telephone employees,
refugees from mainland China, migrants who fled Europe during the Hun-
garian uprising in 1956, and U. S. servicemen who were prisoners during
the Korean War, drew several interesting conclusions. His data indicate
that in homogeneous populations (age 10-50) which share similar experi-
ences over comparable periods of time, there will be a few people who
have a great number of disabling illnesses and days of disability, some
who have a moderate number, many who have very little, and some who have
none. Further, exposure to social and cultural change, and change in
interpersonal relations may lead to significant health change if (1) the
individual has preexisting illness or susceptibility to illness and he
perceives the change as important to him, or (2) there is a significant

change in the individual's activities or physical environment. Conversely, exposure to social, cultural and interpersonal changes may lead to no significant change in health if (1) the individual has no pre-existing illness or susceptibility to illness, or if he does not perceive the change as important to him, and (2) there is no significant change in his activities or physical environment. Thus, it appears that clusters of "life stress", "emotional stress" or "object loss" of sufficient magnitude to be labeled a "crisis" achieve etiological significance as a necessary but not sufficient cause of illness, and accounts in part for the time of onset of disease. (Dohrenwend & Dohrenwend, 1974)

Hinkle's data, as well as data from other studies of similar design (Green, 1954; Kissen, 1958; and Weiss, Rollin, Fischer & Bepler, 1957) reflect merely the number and types of events making up a cluster of life events.

The Social Readjustment Rating Scale

In an attempt to quantify Meyer's "life chart", Holmes and Rahe (1967) probably made the most significant methodological contribution in the area of stress research. Their Social Readjustment Rating Scale (SRRS) offers a distinct advantage over the previous interview techniques; it offers an estimate, albeit normative, of the impact of life events. To construct this scale, Holmes and Rahe (1967) compiled a list of 43 life events, which according to their clinical judgement, were of sufficient significance to require adjustment. Consonant with Meyer's work, the scale included both desirable and undesirable events. With an

arbitrary value of 500 assigned to marriage, 394 Ss were asked to rate the amount of adjustment each event would require, relative to marriage. A significant amount of concordance between sample subgroups (by age, sex, religion, education, income, race and marital status) was obtained (Kendall W = .477, p<.005). Thus, the standardized scale consists of the 43 life events (Appendix A), each weighted by a value called a Life Change Unit (LCU). The LCU values were determined by the mean score for each life event assigned by the sample group; for convenience, each score was divided by 10. Their results suggest a strong agreement between groups and among individuals regarding the significance of the 43 life events that transcends social, age, sexual, religious, educational, marital and racial differences.

Methodological Issues in Measuring Life Stress

Test-retest reliability estimates for the SRRS have ranged from .26 to .90 (Thurlow, 1971; McDonald, Pugh, Gunderson & Rahe, 1972; Casey, Masuda & Holmes, 1967). Rahe (1974) attributed the dramatic variability in reliability to: (1) the time interval between administrations of the questionnaire, (2) the educational level of Ss, (3) the time interval over which Ss recent life changes are summoned--i.e., 6 months vs. 5 years, (4) the wording and format of the various life event questions, and (5) the intercorrelations between various life-change events.

Rahe (1974) in his review of a number of published studies noted that when the time interval between questionnaire administrations was two weeks, the test-retest correlation was .90; when the interval was

eight months, the correlations ranged between .64 and .74; when the interval was ten months the correlation ranged between .52 and .61; a two-year interval gave a correlation of .26. Highest correlations (.90) were from professionals and students, intermediate correlations (.64 to .74) were from military enlisted men, and the lowest correlations (.26) were from blue collar workers. More intricately presented questions were answered less reliably. Finally, it was thought that test-retest reliability was enhanced by the intercorrelation of life change items (Rahe, 1974).

Since the original scaling experiment, the SRRS has been widely used; minor variants include the Schedule of Recent Experiences (SRE), the Recent Life Changes Questionnaire (RLCQ), and the Life Change Inventory (LCI) (Wershow & Reinhart, 1974).

Cross cultural correlations of the scale have varied. Harmon, Masuda and Holmes (1970) reported high correlations (r=.93-.96) between weights assigned by French, Swiss, Belgian and American Ss. In a comparison of seven cultures and subcultures, including American, Japanese, Swedish and Danish Ss, Rahe (1969) found correlations which ranged from .63-.94. However, Komaroff, Masuda and Holmes (1968) found significant differences between Mexican and Caucasian Americans in the scoring of many items. Although the overall ranking of the 43 life events was the same, the assigned weights reflect a cultural and/or socio-economic differential. The Mexican-Americans, for example, rated death of a family member, jail term, and being fired from work as only slightly greater in adjustment magnitude than financial changes, making expensive purchases, and a residential move. Similarly, Rahe, Lundberg, Bennett and Theorell

(1971) reported that Swedes gave uniformly higher LCU values to each event than American Ss. Whereas the rank order was essentially the same, the individual adjustment values for the Swedes were most often significantly higher.

Miller, Bentz, Aponte and Brogan (1974), noting that all of the standardization studies in this country and abroad have been based on urban populations, decided to compare responses to the SRRS of rural and urban Ss. They found that demographically different populations rank life events in a significantly similar order (p<.001). However, for the numerical gravity of events, significant differences between urban and rural samples were obtained for all stress event items. Miller, Bentz, Aponte and Brogan (1974) judiciously observed that one might hesitate to use the SRRS standardized weights on a population group differing from the one on which the original life event weights were derived.

Wershow and Reinhart (1974) offered several serious methodological critiques of SRRS research. In a V. A. hospital with primarily chronically ill patients, they were unable to replicate Wyler, Masuda and Holmes' (1971) finding of a highly significant relationship between LCU scores and chronic illness. Further, they questioned many previous studies' statistical analyses and sampling methods. Briefly, they contended that many researchers have ignored the fact that quite often standard deviations are far larger than means. Additionally, they claimed that although the obtained correlations with the onset of illness are statistically significant, they are of insufficient magnitude (they range from .35 to .74) to be of clinical significance. They are also highly critical of the military studies since investigators failed

to take into account the peculiarities of military life (i.e., differ-
ences in risk of jobs, differences in rank, and so on, and the tendency
toward sick call as an excuse to avoid duty). Also mentioned is what is
in their opinion an overly simplistic approach to health-stress relation-
ships; univariate correlations are used in "an obviously multivariate
situation." Finally, they contended that the obtained correlations are
insufficient, since cause and effect is yet to be demonstrated.

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Stress and Physical Health - Retrospective
Applications of the Social
Readjustment Rating Scale

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Early applications of the SRRS were intended to empirically
demonstrate a relationship between the magnitude of recent life events,
and physical health patterns. Although far from methodologically flaw-
less, these studies have been nonetheless quite impressive.

The original studies were most often retrospective in nature.
Rahe and Holmes (1969) applied their scale to 88 physicians, age 23-33.
Ss were first asked to chart their health patterns for the preceding 10
years; they then completed the SRRS for each of the previous 10 years.
The obtained LCU values for each year were then plotted; upon this pro-
file the health change data was superimposed. A life crisis was defined
as any clustering of life events whose values summed to 150 or more
LCUs; reported changes in health occurred within the 2 year period fol-
lowing the cluster of life events. Data from this pilot study showed
that 93% of the health changes reported were associated temporally with
a clustering of life changes equal to or greater than 150 LCUs per year
(chi-square significant at $p < .001$). The data also indicated a linear

relationship between the magnitude of life crisis and the risk of health change; accordingly, LCU scores in the 150-199 range were defined as mild life crisis, 200-299 LCUs as moderate, and 300+ LCUs as major life crisis.

T. S. Holmes (1970) administered the SRRS to 199 hospitalized patients on the medical wards of the University Hospital and the V. A. Hospital in Seattle. Holmes found that 37 of the items from the SRRS were reported more frequently in the 0 to 5 year period preceding hospitalization than in the 6 to 10 years period. The majority of _Ss_ recording up to 150 LCUs/year reported good health for the succeeding year. When reported stress ranged from 150-300 LCUs, subsequent illness was noted for approximately 50% of the _Ss_. For the few _Ss_ who scored 300+ LCUs, an illness was recorded during the following year for 70% of the cases; illnesses in these _Ss_ tended to be multiple.

Other retrospective studies have shown a positive relationship between mounting life stress and the onset of heart disease. Rahe and Lind (1971) reported a significantly greater increase in _Ss_ LCUs during the 6 months preceding sudden cardiac death than in healthy control _Ss_ (the relationship in the experimental group was significant for _Ss_ with and without prior cardiac history). A similar relationship has been found for the onset of myocardial infarction (Rahe & Paasikivi, 1971; Edwards, 1971; Theorell & Rahe, 1971). Theorell and Rahe (1971) report that infarction _Ss_ with no prior cardiac heart disease showed a significant LCU buildup over the 2 year period prior to infarction. Similarly, infarction _Ss_ with previous cardiac disease history showed a significant increase in their LCU scores during the 2 year period prior to the

investigated infarctions. A control group showed no significant differences in their LCU scores during the 3 years prior to the investigation. It is also interesting to note that in this study, the LCU score bore no relation to the severity of myocardial infarction (Mai, 1968).

Similar data has been amassed for the relationship of increased LCUs and the occurrence of fractures (Tollefson, 1972), the beginning of pregnancy (Knittel & Holmes, cited in Holmes & Masuda, 1974), and the onset of transient diabetes (Hong & Hohnes, cited in Holmes & Masuda, 1974).

The level of life stress as measured by the SRRS has been related to academic performance for both students and teachers. Harris (1972) found LCUs to be inversely proportional to college GPA. Similarly, Carranza (1972) found LCU levels directly proportional to teacher absenteeism, and inversely proportional to the level of job performance.

Stress and Physical Health-Prospective Applications of the Social Readjustment Rating Scale

The SRRS has also been used in a number of prospective health stress studies. Rahe and Holmes (1969) followed 84 of the 88 Ss described in their original pilot study. During the 9 month follow-up, 49% of the high risk group (300+ LCUs) reported illness; 25% of the medium risk group (200-299 LCUs) reported illness, and only 9% of the low risk group (150-199 LCUs) reported illness.

Rahe (1968) expanded his studies to include 2500 naval personnel; the LCU scores for the previous six months were correlated with subsequent health changes. In the first months of duty, the high risk group (upper 30% in LCU scores) had nearly 90% more first illnesses than

the low risk group (bottom 30% in LCU scores); this pattern continued throughout the 6 month tour of duty. In the next 1 to 2 year period, health pattern differences became markedly more pronounced, both in frequency and seriousness. In a similar study, Rahe, Mahan and Arthur (1970) reported a significant but low order positive relationship between crew members' pre-cruise LCU inventory and reported illness at sea. In support of previous retrospective studies, there was a linear relationship between LCUs and illness.

Holmes and Holmes (1970) found a positive relationship between magnitude of life stress, and the occurrence of minor health changes. Holmes (cited in Holmes & Masuda, 1974) administered the SRRS to college football players and found that 50% of the high risk group (vs. 9% of the low risk group, N = 100) had been injured; seven of the ten players who suffered multiple injuries were in the high risk group. Similarly, Bramwell, Wagner, Masuda and Holmes (cited in Holmes & Masuda, 1974), employing a modified version of the scale specifically for college athletes (Athletic Schedule of Recent Experience), reported 70% of the high risk Ss suffered injuries.

Casey, Thorensen and Smith (1970), in their sample of army recruits, found that LCUs were not an accurate predictor of the frequency of illness. However, there was a significant relationship between the level of health care attained and the magnitude of the LCU score. It was concluded that once a person seeks medical assistance, the LCU is a good predictor of the level of health care required.

Using a Seriousness of Illness Rating Scale, Wyler, Masuda, and Holmes (1971) found a highly significant correlation between the

magnitude of life change, and the seriousness of chronic illnesses during a 2 year follow-up. There was, however, no significant relationship with infectious diseases of acute onset.

It should not be concluded that all prospective applications of the SRRS have yielded positive results. Rubin, Gunderson and Arthur (1969) found the SRRS of minor value in illness prediction in a military population; other demographic variables including age, ethnic group, I. Q. and previous medical history were equivalent predictors. Although they did find that Ss with the higher LCUs did tend to have a greater number of illnesses, the relationship was not significant. However, they were able to improve the predictive ability of the SRRS by deriving new scores more representative of a military population. They empirically derived new life stress weights via stepwise multiple regression from their military sample. This was done in order to determine whether or not weights which were so derived would predict future illness better than prior weights derived from civilian populations. Use of the modified measure led to significant results--the number of illnesses for the highest quartile was 50% greater than the lower quartile. (Rubin, Gunderson & Arthur, 1971)

T. S. Holmes (1970), using the SRRS with a sample of 54 medical students, attempted to compare prospective and retrospective data. In both prospective and retrospective surveys with the same sample, approximately 52% of the Ss experienced major health changes during the 2 year period at risk. Of these, 86% with high LCUs, 48% with moderate LCUs, and 33% with low LCUs experienced major health changes.

Life Stress and Psychological Disorders

Although primarily used in relation to physical health, some researchers have employed the SRRS in populations with psychological disorders. Dekker and Webb (1974) explored the relationship of the SRRS to psychiatric status, anxiety and social desirability. They found that SRRS scores from psychiatric inpatients and outpatients did not differ; however, both inpatients and outpatients had significantly higher LCUs than normals. Additionally, it was found that LCUs correlated significantly with age, anxiety and the Social Desirability Scale of the MMPI.

Interestingly, Aponte and Miller (cited in Payne, 1975) found a relationship between life stress events and the patients' past psychiatric history, but little relationship between life stress events and the patients' present psychiatric status.

Lauer (1973) administered the SRRS and the Taylor Manifest Anxiety Scale to British and American Ss. He reported a significant positive relationship between anxiety and SRRS scores with American Ss, and a positive but nonsignificant relationship in British Ss. This difference may simply reflect cultural limitations of either or both instruments; similar cultural differences in patterns of anxiety and extroversion have been found (Cattell & Warburton, 1968). Reuley (1974) rejected Lauer's use of the MAS; instead, he employed a measure of state anxiety (IPAT Anxiety Questionnaire). His results showed that the SRRS correlates with some anxiety measures, and not with others. Correlated with the SRRS were the "Somatic concomitants of anxiety, a feeling of inadequacy, and concern with the ability to realize self ideals."

Payne (1975) reported that older men tend to score lower on the SRRS. This is perhaps explained by the fact that younger person's experiences appear to be overrepresented on the scale. He also reported that self-esteem, job satisfaction and psychological affect are not related to the SRRS scale.

Paykel (1974), in a review of a series of retrospective studies in psychiatric versus control groups, concluded that life events occur significantly more often preceding the onset of psychiatric disorders. He observed that the amount of preceding stress, its time relationship to onset, and to a limited extent, the types of events involved, varied from disorder to disorder. Patients who had attempted suicide reported the greatest number of events, depressives the next highest, then schizophrenics. Among the mixed neurotic outpatients only, he found a linear relationship between the amount of stress and severity of symptoms. In regard to time, the link with suicide appeared to be the most immediate; there was a dramatic increase in event occurrences immediately preceding the attempt. Further, he observed that only undesirable events occur excessively before the psychiatric disorder; desirable events do not. Finally, it was observed that stressful events do not interact with the onset of psychiatric symptoms in a simple way; some patients' behavior will reflect reactions to stressful life events, whereas others seem to be invulnerable. Whatever the mechanisms, life stress and psychological disorders appear to be the result of complex interactions. Additionally, it is quite possible that some chronic emotional disorders; e.g., schizophrenia, high anxiety, etc., may cause an increase in the occurrence of life events. At this point, all we can document is an association of

life stress and emotional disorders; any conclusions as to cause and effect would be premature.

Socioeconomic Factors and Desirability
of Life Events

Markush and Favero (1974), in an epidemiological study found a significant association between high LCU scores and both scores on the CES-D (Center for Epidemiologic Studies - Depression scale) and scores on a version of Langner's 22 item psychophysiological symptom scores. Interestingly, higher depression and psycho-physiological symptom scores were found among women and less educated Ss. Their data reflect a significant relation between LCUs and social class, and thereby provide further empirical support for Miller, Betz, Aponte and Brogan's (1974) demographic differences. LCU scores in lower educational groups were significantly lower; this is in direct contrast to Dohrenwend's (1973) results. Thus, Wershow and Reinhart's (1974) negative findings may simply reflect the usage of a scale developed for a more highly educated sample; Wershow and Reinhart's sample was predominantly illiterate or semiliterate. Therefore, caution must be exercised when administering the SRRS to socio-economically and educationally disparate populations.

In their New Haven sample, Myers, Lindenthal and Pepper (1974) reported a greater frequency of undesirable life events in persons of lower SES, as well as a greater amount of psychiatric distress. Life events were measured by a scale of Desirability-Change, a modified SRRS with 62 life events; psychiatric status was evaluated by a modified version of Gurin's instrument (Gurin, Veroff & Feld, 1960). A straight

forward evaluation revealed no significant relationships between social class and the life event score. However, when the data was reanalyzed in terms of the desirability of the event, a highly significant social class relationship emerged. Thus, the greater amount of psychological duress reported in this sample, and others, may be representative of a disproportionate distribution of undesirable life changes in the lower socio-economic strata.

Whereas the SRRS was designed to objectively quantify life changes, population differences as well as individual differences tend to obfuscate the actual impact of a particular event. It is clear that at least several demographic variables have had significant impact on the accuracy of the SRRS weights--i.e., rural vs. urban, socioeconomic status, educational levels, and in several cases, cultural and subcultural variations. The desirability of the event, contrary to Adolph Meyer's contention, does at least in one study appear to be a significant factor.

The Importance of Individual Differences in the Reporting and Impact of a Life Event in Populations with Psychological Problems

Any number of factors may influence the manner in which individuals react to stressful life events. Since coping patterns vary greatly among individuals and from event to event, variability in help-seeking patterns, or willingness to acknowledge the stressfulness of a given event, can be vast. Individual differences may introduce variation not only in the accuracy of the LCU weights, but perhaps also in the reported physical and psychological sequelae of an event.

For example, Clayton (1971, 1972), when investigating one highly stressful event, death of a spouse, found no significant differences in help-seeking patterns between subjects suffering from a pathological reaction--"depressive symptom complex"--and non-depressive subjects. This discrepancy may in part be explained by Lindemann's (1944) model of symptomatology and management of acute grief. Although his observations were derived primarily from hospitalized psychoneurotics suffering acute grief, differences in grief reactions may explain differences in help-seeking patterns. Normal acute grief is typified by a variety of "remarkably uniform symptoms; included are respiratory disturbances, decline in appetite and energy, a sense of unreality, increased emotional distance from others, preoccupation with the deceased, guilt feelings, social withdrawal, disruptions in patterns of conduct, restlessness, and appearance of traits of the deceased in the behavior of the bereaved." (Lindemann, 1944) Duration of the normal grief pattern is thought to be partially a function of the amount of grief work (i.e., readjustment to the environment and formation of new relationships). Although there is a tendency to avoid the intense stress associated with the grief experience (i.e., inability to relax for fear of breaking down), generally within 4-6 weeks, undistorted grief reactions could be overcome.

Morbid grief reactions represent a distortion of normal grief. Most noteworthy is the delay of reaction which occurs when the bereaved cannot or will not show a reaction until a considerable amount of time has elapsed; this delay can be as long as several years. It is

concluded that dangerous distortions of the grief reaction, not imme-
diately conspicuous, may be quite destructive later.

Although it is not clear exactly what constitutes Clayton's
"depression-symptom complex," it is readily apparent from Lindemann's
description that normal vs. morbid grief reaction patterns can effect
overt and immediately subsequent grief symptomatology and help-seeking
patterns. Morbid grief reactions, although clearly more pathological,
may be misconstrued as a "non-depressive reaction;" their manifestations,
both physical and psychological, may not be readily observable for as
much as 2 years after the death of a loved one. Therefore, it is
implicit that psychological variables (e.g., specific coping strategies)
may tend to obscure the reported association between life stress and ill
health. Until these variables are better understood, life stress mea-
sures such as the SRRS are bound to remain confounded.

The College Schedule of Recent Experience

In an attempt to reduce the error introduced by employing the
SRRS in different populations, several investigations have attempted to
modify the instrument to suit specific populations. One notable modifi-
cation is that of Coddington (1972) who developed separate SRRS Scales
for preschoolers, elementary students, junior high school students, and
high school students. Anderson (1972), dissatisfied with the relevance
of several items of the original SRRS, developed the College Schedule of
Recent Experience (CSRE) specifically for college students. The scaled
scores for the 47 selected items were standardized in a sample of 284
college students at North Dakota State University (Appendix B).

Marx, Garity and Bowers (1975), employing the CSRE in a sample of 2,224 college freshmen, demonstrated a significant relationship between LCU scores and the number of health problems in the preceding and subsequent 60 day period; a similar pattern arose for scores on Langner's 22-item psychiatric impairment scale.

Noting the potential value of a valid life stress scale in college populations, Bieliauskas and Webb (1974) compared scores on the SRRS and CSRE with seeking of professional help (both psychological and physical). In addition, standard weight scoring (simply scoring the event) and frequency weight scoring procedures (scoring the event and frequency of occurrence) were compared. Professional aid was categorized as follows: (a) hospitalization for physical illness, (b) hospitalization for psychological reasons, (c) consultation with a physician, (d) consultation with a mental health professional, and (e) student counseling. Using the standard SRRS, LCUs were significantly associated with all categories except consultation with a mental health professional, and seeking student counseling; this relationship held true for both scoring methods. Using the CSRE and the single weight scoring method, the same pattern emerged. However, when the CSRE was scored by the frequency weight method, there was a significant association between life events and all categories of professional aid. It is interesting to note that when the data was normalized by a natural log transformation, and reanalyzed, only the association between the CSRE (frequency weighted) and student counseling lost significance; significance for seeking aid from a mental health professional was maintained.

Because of the low variance accounted for, Bieliauskas and Webb (1974) concluded that the CSRE and the SRRS are of limited predictive value. They suggested two reasons for the apparent lack of predictive utility: (1) inclusion of many items which may well be inappropriately designated as stressful (i.e., moving, going to school, etc.), and (2) preassigned weight values may be inaccurate. Regarding the latter point, it should be reiterated that when Rubin, Gunderson and Arthur (1971) and Myers, Lindenthal and Pepper (1974), through different statistical manipulations, obviated the impact of the preassigned weights, predictive ability of the instrument was significantly improved. In addition, Cochrane and Robertson (1973) critiqued the SRRS for its lack of completeness and its lack of sensitivity to specific populations by the utilization of rigid, preassigned weights.

The Proposed Study

To a large extent researchers have tended to ignore the tremendous perceptual variability in the ratings of the impact of stressful life events. It is the purpose of this study to explore possible relationships between this perceptual variability and several psychological factors.

Recently Rahe (1974), in a theoretical overview of the possible mechanisms linking stress and disease onset, recognized the need for assessing individual perceptions of life events. As a result, he advocated the use of the Subjective Life Change Unit Scaling System which is essentially a minor modification of the original scaling techniques.

Lundberg, Theorell and Lind (1975) were the first to compare the differential validity of individualized versus standardized stress scorings. In addition to completing the standard SRRS, the above-mentioned experimenters asked myocardial infarction subjects to rate "the amount of adjustment" or the "magnitude of adjustment" or the "magnitude of upsettingness" for each life event. Three scaling methods were compared: (1) the "average person" scale (total mean scale), (2) separate mean scales for the infarction and control groups, and (3) individual scales directly obtained from the estimates given by each subject. Whereas the total mean scale was not significantly associated with heart attack onset, the latter two were. The differences between groups was greater for "upsettingness" than for "adjustment" and it was in both cases most pronounced when the individualized scale was used. Thus, individual differences in the scaling of life events was of great importance. One implication of this study is that the risk of illness onset for the individual should be judged according to his perception of life events.

Grant, Gerst and Yager (1976) found that a large sample of psychiatric patients tended to assign significantly higher stress scores to life event items than did normals. Based on their data, they suggested that future researchers investigating the relationship of life events and psychiatric symptoms should consider employing SRRS weights derived from psychiatric populations rather than existing scores from normative groups.

Yamamoto and Kinney (1976) reported that individualized life stress scores were significantly predictive of pregnancy complications. They emphasized the importance of determining the magnitude and direction

of the emotional response elicited by a life event. In addition, they
noted a significant correlation between perceived stress and Manifest
Anxiety Scores, a finding which they interpret as suggestive of possible
causal links between stress and health changes.

Manuck, Hinrichsen and Ross (1975), employing a non-subjective
stress measure, found that the level of stress experienced was associ-
ated with higher state and trait anxiety as measured by the Spielburger.

The use of individualized scaling of the impact of life events
seems to be an emergent trend. In addition, the possible contributors
of psychological constructs to stress perception are in need of further
exploration.

It is the purpose of this study to explore the possible psycho-
logical correlates of reported stressfulness of life events. Selected
for the present study were several widely used psychological measures
which assess fairly independent personality dimensions. They include:
the Repression-Sensitization Scale, the Adult Nowicki-Strickland I-E
Scale, the Mood Adjective Checklist, and the Hidden Figures Test.

Specifically, the present study will explore the following:

1. Which psychological variables, as measured by the above scales,
are associated with a general tendency to overrate or underrate the
stressfulness of life events?

2. What demographic variables are associated with life stress per-
ceptions?

3. In what ways, if any, are the assessed psychological parameters
associated with the amount of stress experienced by subjects, and

4. Does the individualized method of scoring life stress, as

compared to the standardized method, result in significantly different

levels of experienced stress?

CHAPTER II

METHOD

Subjects

One hundred and ten volunteer male and female subjects were obtained from the introductory psychology subject pool at the University of North Dakota. Subjects received research credit for their participation in the study. Treatment of participants was in accordance with the ethical standards of the American Psychological Association.

There were 73 females and 37 males, 100 of whom were single, 8 of whom were married, and 2 of whom were divorced. Eighty-three subjects were freshmen, 22 were sophomores, 4 were juniors, and 1 was a senior. The mean age was 19.2 years, with a SD of 2.4 years; the mean GPA was 3.32 with a SD of 1.67. The major area of residence was as follows: 47 were from a rural area (less than 5,000 people); 16 were from a town (5,000 to 20,000 people); 40 were from a small city (20,000 to 100,000 people); and 2 were from a large city (more than 100,000 people).

Materials

College Schedule of Recent Experiences (Stress Measure)

Rahe's (1974) Subjective Life Change Unit Scaling System was applied to the College Schedule of Recent Experiences. Essentially a free-floating method of measuring stress perception, it is exactly the same as the original techniques, except an anchoring value is not pre-assigned to one event.

Subjects were instructed to score each of the 47 life events on a '0' to '100' scale. In addition, they were instructed to indicate whether or not they had actually experienced each event at any point in their lives (Appendix C).

Repression-Sensitization Scale

Composed of 127 items from the D, Pt, Welsh Anxiety, L, K, and Hy scales of the MMPI, the R-S scale was developed by Byrne (1961) in an attempt to discriminate between individuals utilizing avoidance responses (sensitizers).

Byrne, Barry and Nelson's (1963) revised R-S scale has been typically discussed and interpreted in terms of ego defense. Woods (1977) reported that evidence for this interpretation is somewhat contradictory, but nonetheless most current investigators deal with the R-S continuum in terms of "coping strategies for threat". Lefcourt (1966) suggested an alternative hypothesis; he suggested that R-S is a measure of preferred modes of self presentation. In accordance with this hypothesis, sensitizers desire to appear sensitive and feeling, whereas repressors are primarily concerned with appearing more stoical. Empirical support for this hypothesis was provided by Lefcourt (1966), but Woods (1977) was unable to replicate these results.

Although the true meaning of the R-S construct is yet to be resolved, the R-S scale has been significantly correlated with a number of personality measures. The R-S scale is positively correlated with the Manifest Anxiety Scale, Edward's Social Desirability Scale, Rotter's I-E, measures of cognitive complexity, and is unrelated to measures of

intelligence, religiosity, and field dependence-independence (Bell &
Byrne, in press).

It is also interesting to note that R-S was positively corre-
lated with the frequency of tension headaches, colds, emotional diffi-
culties, and frequency of accidents and illnesses in two independent
samples (Byrne, Steinberg & Schwartz, 1968). In a large scale study at
the Mayo Clinic, Schwartz, Krupp, and Byrne (1971) reported that when
repressors become ill, it is likely to be a purely organic diagnosis,
whereas sensitizers tend to exhibit disorders with psychological
components.

Adult Nowicki-Strickland I-E Scale

Generalized expectancy of reinforcement, an important factor in
social learning theory, resulted in Rotter's (1966) measure of locus of
control of reinforcement. Designed to differentiate people according to
the amount of personal control they feel their behavior exerts over cor-
responding reinforcements, Rotter's I-E scale has been utilized in over
300 studies (Throop & MacDonald, 1971), the results of which support the
predictive utility of this variable in a wide variety of behavior. Rot-
ter's I-E scale has met with recent criticism which includes charges of
confounding of social desirability as well as confounds of social, per-
sonal, political and ideological causation (Nowicki & Duke, in press).
In addition, the scale's forced choice format and difficult reading
level may make it inappropriate for noncollege populations. Nowicki and
Duke (in press) present a viable alternative, the Adult Nowicki-

Strickland I-E scale, which measures the same personality dimension, but is apparently free of the aforementioned confounds.

Mood Adjective Checklist (MACL)

Nowlis (1965) stated that a variety of mood scores can be derived via factor analysis or cluster analysis from the Mood Adjective Checklist and other lists of mood adjectives. These mood scores, particularly when based on subject's adjective ratings at the moment, are correlated with many personality, situational, physiological and response variables. Mercutoris (1976) factor analyzed a modified MACL which is particularly suitable since his results are based on an introductory psychology student population. The six factors derived include: Happiness, Anxiety, Surgency, Fatigue, Concentration and Anger. In the present study, subjects completed the 62-item MACL, and factor scores, based on Mercutoris' data, were computed for each individual.

Hidden Figures - Cf-1

The Hidden Figures Test - Cf-1, a 32-item perceptual test developed by Jackson, et al. (1962), assesses subject's ability to locate a simple figure embedded within a larger complex figure. Subjects who are more adept at this task are known as field independent, whereas subjects who are less adept are called field dependent. Performance on tests of this nature has been shown to be more than just a measure of perceptual differences between individuals. The field-dependence-independence construct was broadened to include both intellectual and perceptual activities, thus resulting in the "global-articulated" dimension of cognitive

style (Witkin, Oltman, Raskin & Karp, 1971). Witkin, Dyk, Faterson, Goodenough and Karp (1962) reported a relationship between cognitive style and the nature of defenses. According to their data, persons with a global cognitive style tend to utilize repression and denial, whereas persons with an articulated style tend to use specialized defenses, such as isolation.

Procedure

Subjects were required to complete the above measures in a single testing session. Printed instructions were provided with each questionnaire; these instructions were also read aloud by the experimenter before subjects were permitted to proceed. Subjects were provided with as much time as they needed for each measure, with the exception of the Hidden Figures Test - Cf-1, which had a ten minute time limit for each of its two sections. The sequence of testing was as follows: the MACL, the modified College Schedule of Recent Experiences (Stress Measure), the Adult Nowicki-Strickland I-E Scale, the Repression-Sensitization Scale, and the Hidden Figures Test - Cf-1.

CHAPTER III

RESULTS

Perceived Stressfulness of Life Events

In order to assess the relationship of perceived stress to the demographic data and measures employed, a total stress score, based on the sum of the stress scores assigned to all forty-seven life event items, was computed for each subject (see Tables 1 and 2).

TABLE 1

MEANS AND STANDARD DEVIATIONS OF PERCEIVED STRESS AND PERSONALITY MEASURES

	Perceived Stress	R-S	Nowicki (I-E)	Hidden Figures	Happiness	Anxiety
Mean	2557.54	44.40	10.32	9.60	-10.29	17.68
SD	526.57	17.04	4.56	6.28	16.76	6.86

	Surgency	Fatigue	Concentration	Anger
Mean	38.05	13.55	25.38	7.09
SD	11.92	15.19	5.35	3.24

Perceived stress was not related to age, area, GPA, marital status, educational level, or sex. Females rates life events as more stressful, but the tendency to do so, according to the analysis of variance, was not significant, F (1, 108) = 3.83, p = .053.

TABLE 2

CORRELATION OF PERSONALITY MEASURES WITH PERCEIVED

STRESS AND EXPERIENCED STRESS

	Perceived Stress	Experienced Stress
R-S	.1878*	.3314**
Nowicki (I-E)	.0311	-.0529
Hidden Figures	-.1583*	-.1882*
Happiness	-.0475	-.1056
Anxiety	.0549	.1524
Surgency	.1081	.0791
Fatigue	.0259	.1215
Concentration	.1157	.0617
Anger	.0067	.0201

*p<.05
**p<.01

Perceived stress was significantly correlated with the Repression-Sensitization Scale, r = .1878, t (108) = 1.98, p = .025. The Hidden Figures scores were also significantly associated with perceived stress, r = -.1583, t (108) = 1.66, p = .049. The multiple correlation for predicting perceived stress from R-S, Nowicki-Strickland, Hidden Figures, Happiness, Anger, Surgency, Fatigue, Concentration and Anxiety was not significant, R = .329, F (9, 100) = 1.35, p = .223.

Experienced Life Stress

In order to assess the relationship of experienced life stress to the demographic data and measures employed, a total stress score,

based only on those items which were experienced, was computed for each subject. Thus the perceived stress for only those events which were experienced was summed for each subject, $\underline{M}$ = 912.17, $\underline{SD}$ = 461.24 (see Table 2).

Experienced life stress was significantly correlated with the Repression-Sensitization Scale, $\underline{r}$ = .3314, $\underline{t}$ (108) = 3.65, $\underline{p}$ = .0002. The Hidden Figures Test was also significantly associated with experienced life stress, $\underline{r}$ = -.1882, $\underline{t}$ (108) = 1.99, $\underline{p}$ = .025.

The multiple correlation for predicting stress from R-S, Hidden Figures, Nowicki-Strickland, Happiness, Anger, Surgency, Fatigue, Concentration, and Anxiety was significant, $\underline{R}$ = .431, $\underline{F}$ (9, 100) - 2.536, $\underline{p}$ = .011.

Among the demographic measures, only age was significantly correlated with the amount of experienced life stress, $\underline{r}$ = .248, $\underline{t}$ (108) = .266, $\underline{p}$ = .005.

Experienced Life Stress: Standardized Scoring vs. Individualized Scoring

Using only those items that subjects had experienced, the standardized weights reported by Anderson (1972, Appendix B) were substituted for the individual stress ratings. In this manner, the total score of experienced life stress was computed for each subject, $\underline{M}$ = 782.84, $\underline{SD}$ = 301.73.

On the basis of individual subject's ratings of stressfulness of life events, a total score of experienced life stress was computed, $\underline{M}$ = 912.17, $\underline{SD}$ = 461.24.

The individualized scoring of experienced stress resulted in significantly higher scores, t (208) = 3.88, p = .00007.

The standardized scoring procedure resulted in a significant correlation of experienced stress with Repression-Sensitization, r = .289, t (108) = 3.14, p = .001. As noted above, experienced stress, calculated on the basis of individualized ratings of life events was significantly correlated with the Repression-Sensitization Scale, r = .331, t (198) = 3.65, p = .0002. The individualized scaling did not, however, differ significantly from the standardized scaling in terms of predicting scores on the Repression-Sensitization Scale, t (209) = .345, p = .365.

Finally, experienced stress as measured by the standardized scores was significantly correlated with the Anxiety factor of the MACL, r = .191, t (108) = 2.02, p = .023.

CHAPTER IV

DISCUSSION

The current study demonstrates that perceived stressfulness of
life events is related to the psychological variables measured by the
Repression-Sensitization Scale and the Hidden Figures Test.

Thus, sensitizers tend to rate life events as more stressful,
whereas repressors tend to rate life events as less stressful. This
finding could be interpreted as supportive of a defensive style inter-
pretation of the R-S scale. That is, subjects who are more defensive
perceive life events as less stressful whereas subjects who are less
defensive perceive life events as more stressful.

Alternatively, consonant with Lefcourt's (1966) hypothesis, sen-
sitizers may wish to portray themselves as more emotional, and thus rate
life events as more stressful. Repressors on the other hand, may wish
to put forth a more stolid facade, therefore rating life events as less
stressful.

It should be noted however, that R-S accounts for only 3.5% of
the variance of perceived stress. Although the relationship is signifi-
cant, the utility of R-S as a predictor of an overall style of rating
perceived stress would seem to be limited.

Turning to the measure of field dependency, field dependent sub-
jects tend to rate life events as more stressful, whereas field

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independent subjects tend to perceive events as less stressful. Conceivably, persons whose cognitive processes are less dependent upon the perceptual field are more likely to put stressful events into a more adaptive perspective, thus reporting less stress. Persons who are more dependent upon their perceptual field may fail to isolate stressful events, and fail to put them into an adaptive perspective. Specifically, persons who are more field dependent may be more enmeshed with the emotional impact of their experiences, thus attributing more stress to life events.

Although Hidden-Figures scores are significantly correlated with perceived stress, only 2.5% of the variance is accounted for. Thus the utility of the Hidden Figures test as a predictor of an overall style of rating perceived stress appears limited.

Stress ratings were not found to be related to age, GPA, marital status, education level, or area of residence. Before concluding that stress ratings are independent of demographic variables, it should be noted that in the current sample, variability was limited with respect of educational level, marital status, and age. Thus a less uniform sample would be required to properly assess the impact of demography. Contrary to Miller's et al., (1974) findings, no difference in perceived stress between rural and urban subjects was found. Once again however, sampling differences must be taken into account. In the present study, the major portion of the urban subjects were from small cities of 20,000 to 100,000 people.

The most interesting finding of the present study is the relationship between experienced stress and Repression-Sensitization.

According to their self reports, sensitizers have experienced more stress than repressors. This may have important implications upon the formation of defensive styles as a result of experienced stress. It is conceivable that persons who have had more traumatic experiences, or simply less stable lives, tend to become more vigilant in terms of their attendance to threatening stimuli. Alternatively, repressors may simply forget more stressful experiences. Certainly a more rigorous test of this relationship would be in order; perhaps reactions to experimentally induced threat, with before and after measures on the MACL as the dependent measure, would provide an appropriate means of validation.

In terms of health-care seeking behavior, this finding may be suggestive of a partial explanation of why persons with greater life stress report more illness. Since the tendency to sensitize seems to be associated with reporting more life stress, perhaps the frequency of reported illness is more a function of sensitization than of greater life stress. Byrne, Steinberg and Schwartz (1968) demonstrated that sensitizers do report more illness. Since both R-S and life stress are correlated with health complaints, and are not perfectly correlated with one another, a multiple correlational study, employing both R-S and life stress may increase our ability to predict health care seeking behavior. It would also be interesting to include a behavioral measure of coping strategies to experimentally induced threat employing the MACL as suggested above. In addition, Wallston, Wallston, Kaplan and Maides' (1977) Health Locus of Control Scale, which is also significantly associated with frequency of health complaints, may account for additional

variance. A multiple correlational study of this nature, particularly in light of the impending National Health Bill, may be of significant utility.

In comparing the standardized and the individualized methods of scoring, it was found that the individualized and standardized scores were not from the same distribution. Since the current sample was demographically similar to the standardizing sample, one would have expected based on previous research, to have obtained quite similar stress scores. It is possible that simply removing the anchoring value as part of the stress rating instructions has a significant effect upon the distribution of obtained scores. Although the distribution of scores may differ, whether or not predictive utility is improved is still very much open to question.

In the current study the individualized scores resulted in a slightly higher correlation with R-S scores, but the additional contribution of individualized scores was not significant.

Interestingly, when standardized scores were substituted for individualized scores, the correlation between experienced stress and the Hidden Figures Test disappeared. However, a significant correlation did appear between stress and the Anxiety factor of the MACL. Although this confirms the finding reported by Manuck, Hinrichsen and Ross (1975), who employed a nonsubjective measure, why this relationship exists when stress is computed by the standardized scoring method and not the individualized scoring method is open to conjecture.

Overall, the most significant implications of the present study involve the relationship of Repression-Sensitization to experienced and

perceived life stress. These relationships are of significance in that subsequent exploration and validation may contribute to our overall understanding of the possible interaction of a psychological variable and life stress as they relate to disease onset.

APPENDIX A

Original SRE (later called the SRRS--

Social Readjustment Rating Scale)

Booklet for

SCHEDULE OF RECENT EXPERIENCE (SRE)

Thomas H. Holmes, M.D.

Richard H. Rahe, M.D.

This questionnaire consists of two sections, a personal history section
(side 1, blue) and a recent experience section (side 2, green). Each
item of the questionnaire is to be answered on the answer sheets accord-
ing to the instructions. Read each item and the choice of answers care-
fully, judge the answer as it applies to you and mark it on the answer
sheet. The mark is made by blacking out with a pencil the proper space
on the answer sheet. Make the marks black and heavy. Do not be afraid
to make corrections, but erase cleanly. Do not mark in the booklet.

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Section 1, Personal History (Side 1, blue)

Please print in your name, address, today's date, birth date and occupation. All other questions are answered by blacking out the box beside the proper response under each of the headings in the blocks. Each question in this section has one answer that is appropriate so do not leave any unanswered.

Example:

Religious Preference

■ Protestant
Catholic   This means that your religious preference
Jewish   is Catholic.
Other
None

Section 2, Recent Experience (Side 2, green)

Part A (Items 1 through 12)

This section of the questionnaire is different from the first section in 3 ways: first, the questions have to do with whether an event did or did not happen and when; second, the questions to be answered are written only in this instruction booklet; third, the answer sheet (Side 2) has been separated into the following 4 time periods:

0 to 6 mo ago   6 mo to 1 yr ago   1 to 2 yrs ago   2 to 3 yrs ago

For each numbered question in the booklet:
1. Think back on the item event and decide if it happened to you and when it happened.
2. If the event in question did happen in any of the time periods, mark the answer by blacking out the "yes" bracket in the appropriate time period. Y means Yes.
3. If the event in question did not happen in any of the time periods, mark the answer by blacking out the "no" bracket in the appropriate time period. N means No.

When in doubt of the event happening, then mark in the "yes" bracket. If you are not certain of the time period, do not worry; just try to be as close as possible. There must be a mark in each time period.

Example:
Item No.   (Trouble with boss)
  1.

                0-6   6 Mo   1-2   2-3
                Mo   Yr   Yr   Yr
              ■ N   Y ■   Y ■   ■ N

This means that you have had trouble with the boss in the last 6

months and between 2 and 3 years ago, but not 6 months to a year ago or 1 to 2 years ago.

Item Number

1. Mark under the appropriate time periods when there has been either a lot more or a lot less trouble with the boss.
2. Mark under the appropriate time periods when there was a major change in sleeping habits (sleeping a lot more or a lot less, or change in part of day when asleep).
3. Mark under the appropriate time periods when there was a major change in eating habits (a lot more or a lot less food intake, or very different meal hours or surroundings).
4. Mark under the appropriate time periods when there was a revision in your personal habits (dress, manner, associations, etc.).
5. Mark under the appropriate time periods when there was a major change in your usual type and/or amount of recreation.
6. Mark under the appropriate time periods when there was a major change in your social activities (e.g., clubs, dancing, movies, visiting, etc.).
7. Mark under the appropriate time periods when there was a major change in church activities (e.g., a lot more or a lot less than usual).
8. Mark under the appropriate time periods when there was a major change in number of family-get-togethers (e.g., a lot more or a lot less than usual).
9. Mark under the appropriate time periods when you had a major change in financial state (e.g., a lot worse off or a lot better than usual).
10. Mark under the appropriate time periods when you had in-law troubles.
11. Mark under the appropriate time periods when you had a major change in the number of arguments with spouse (e.g., either a lot more or a lot less than usual regarding child-reading, personal habits, etc.).
12. Mark under the appropriate time periods when you had sexual difficulties.

Part B (Items 13 through 42)

This part of Section 2 is similar to Part A, except that the question now asks you to indicate the number of times that an item event happened in each of the appropriate time periods.

Each of the time period columns has brackets numbered 0, 1, 2, 3, 4+. The last, 4+, means 4 or more. These numbers represent the number of times the event happened. If the event did not happen, mark the "0" bracket. There must be a mark in each time period.

Example:

Item No.   (Change in residence)
 19.

0-6 Mo	6 Mo- 1 Yr	1-2 Yr	2-3 Yr
0 2 3 4+	0 1 3 4+	1 2 3 4+	0 1 2 4+

This means that you changed residence once in the last 6 months, twice 6 months to 1 year ago, three times between 2 and 3 years ago, but did not change residence 1 to 2 years ago.

Item Number

13. Mark the number of times in each appropriate time period that you experienced major personal injury or illness.

14. Mark the number of times in each appropriate time period that you have lost a close family member (other than spouse) by death.

15. Mark the number of times in each appropriate time period that you have experienced the death of spouse.

16. Mark the number of times in each appropriate time period that you have experienced the death of a close friend.

17. Mark the number of times in each appropriate time period that you have gained a new family member (e.g., through birth, adoption, oldster moving in, etc.).

18. Mark the number of times in each appropriate time period that there has been a major change in the health or behavior of a family member.

19. Mark the number of times in each appropriate time period that you have had a change in residence.

20. Mark the number of times in each appropriate time period that you have experienced detention in jail or other institution.

21. Mark the number of times in each appropriate time period that you have been found guilty of minor violations of the law (e.g., traffic tickets, jay walking, disturbing the peace, etc.).

22. Mark the number of times in each appropriate time period that you have undergone a major business readjustment (e.g., merger, reorganization, bankruptcy, etc.).

23. Mark the number of times in each appropriate time period that you married.

24. Mark the number of times in each appropriate time period that you were divorced.

25. Mark the number of times in each appropriate time period that you had marital separation from your mate.

26. Mark the number of times in each appropriate time period that you had an outstanding personal achievement.

27. Mark the number of times in each appropriate time period that you had a son or daughter leaving home (e.g., marriage, attending college, etc.).

28. Mark the number of times in each appropriate time period that you have experienced retirement from work.

29. Mark the number of times in each appropriate time period that there was a major change in working hours or conditions.

30. Mark the number of times in each appropriate time period that you had a major change in responsibilities at work (e.g., promotion, demotion, lateral transfer).

31. Mark the number of times in each appropriate time period that you have been fired from work.

32. Mark the number of times in each appropriate time period that there was a major change in living conditions (building a new home, remodeling, deterioration of home or neighborhood).

33. Mark the number of times in each appropriate time period that your wife began or ceased working outside the home.

34. Mark the number of times in each appropriate time period that you took on a mortgage greater than $10,000 (e.g., purchasing a home, business, etc.).

35. Mark the number of times in each appropriate time period that you took on a mortgage or loan less than $10,000 (e.g., purchasing a car, T.V., freezer, etc.).

36. Mark the number of times in each appropriate time period that you experienced a foreclosure on a mortgage or loan.

37. Mark the number of times in each appropriate time period that you have taken a vacation.

38. Mark the number of times in each appropriate time period that you have changed to a new school.

39. Mark the number of times in each appropriate time period that you have changed to a different line of work.

40. Mark the number of times in each appropriate time period that you have begun or ceased formal schooling.

41. Mark the number of times in each appropriate time period that you had a marital reconciliation with your mate.

42. Mark the number of times in each appropriate time period that you had a pregnancy.

Original College Schedule of Recent

Experiences (CSRE)

The influence of recent life experience on the health of college freshmen

We earnestly solicit your responses to questions 16 through 62. All information will be treated with the strict confidentiality afforded all medical records. The entire study should be completed in approximately 2 years and the results will be made known at that time.

The answer sheet for this questionnaire is marked off in sections. Section I provides space for answering questions 1 through 40. Section II provides space for answering questions 41 through 62. Read each item and the choice of answers carefully, judge the answer as it applies to you and mark it on the answer sheet. After you have finished look over the answer sheet and make sure that all questions have been answered. Mark your answers black and heavy and use PENCIL ONLY. Make corrections if necessary, but erase clearly. Do not mark in the booklet. Place the answer sheet inside the booklet and turn it in when completed.

UNIVERSITY OF KENTUCKY

COLLEGE OF MEDICINE

DEPARTMENT OF COMMUNITY MEDICINE

AND

STUDENT HEALTH SERVICE

LEXINGTON, KENTUCKY

INSTRUCTIONS

Please turn the answer sheet sideways and print your name in the empty
boxes provided on the right-hand side of the page. Blacken the appropri-
ate lettered box in the column below each letter of your name. If the
number of spaces for your first name is insufficient, use only your
first initial.
    Mark the appropriate box for the current semester.
    Mark the appropriate grade in the column provided. F = freshman;
S = sophomore; 3 = junior; 4 = senior and 5 = graduate student.
    Mark the appropriate boxes in the columns titled Birth date for
month and for year.
    Mark the appropriate box in the column titled Sex. B = male; G =
female.
    Fill your student number in the empty boxes and then black in the
proper number in each column under the student number.
    Now turn the paper longways and begin marking your answers to the
questions. You may wish to use a sheet of blank paper to guide your
answers so that you are sure the marks are in the proper blanks.

SECTION I

Mark the appropriate letter for:
(1) your marital status.
    (A) married (B) divorced (C) separated (D) widowed (E) single
(2) your ethnic group.
    (A) White (B) Black (C) Oriental (D) Am. Indian (E) Other
(3) the years you have lived at your present home address.
    (A) 1 year or less (B) more than 1 year and less than 5 years
    (C) more than 5 years and less than 10 years (D) 10 years or +
(4) the number of times you have moved in the last 5 years. If you
    moved to Lexington to attend college, count that as 1 move.
    (A) 0 (B) 1 (C) 2 (D) 3 (E) 4 or more times
(5) the population of your place of birth at the time of your birth.
    (A) rural or farm (B) 5000- (C) 5000+ (D) 50,000+ (E) 500,000+
(6) where most of your life has been spent.
    (A) rural or farm (B) 5000- (C) 5000+ (D) 50,000+ (E) 500,000+
(7) your number of brothers.
    (A) 0 (B) 1 (C) 2 (D) 3 (E) 4 or more
(8) your number of sisters.
    (A) 0 (B) 1 (C) 2 (D) 3 (E) 4 or more
(9) your birth order in the family.
    (A) oldest (B) youngest (C) middle (D) only child
(10) if you have seen someone to aid you with mental health in the
    last 3 months. (A) yes (B) no
(11) if you have seen someone to aid you with physical health in the
    last 3 months. (A) yes (B) no
(12) your age when mother died.
    (A) mother living (B) 0-5 years (C) 6-10 years (D) 11-15 years
    (E) 16+ years

(13) your age when father died.
(A) father living (B) 0-5 years (C) 6-10 years (D) 11-15 years
(E) 16+ years
(14) your age when mother and father were divorced or separated.
(A) parents not divorced or separated (B) 0-5 years (C) 6-10
years (D) 11-15 years (E) 16+ years
(15) your age when either of your parents remarried.
(A) neither parent remarried (B) 0-5 years (C) 6-10 years (D)
11-15 years (E) 16+ years

Each of the following questions may be answered by one of these
letters: (A) 0 (B) 1 (C) 2 (D) 3 (E) 4 or higher
Mark the appropriate letter that corresponds to the Number of times
during the last year (12 months period) that you:
(16) entered college.
(17) married
(18) had either a lot more or a lot less trouble with your boss.
(19) held a job while attending school.
(20) experienced the death of a spouse.
(21) experienced a major change in sleeping habits (sleeping a lot
more or a lot less, or a change in part of the day when asleep).
(22) experienced the death of a close family member.
(23) experienced a major change in eating habits (a lot more or a lot
less food intake, or very different meal hours or surroundings).
(24) made a change in or choice of a major field of study.
(25) had a revision of your personal habits (friends, dress, manners,
associations).
(26) experienced the death of a close friend.
(27) have been found guilty of minor violations of the law (traffic
tickets, jay walking, etc.).
(28) have had an outstanding personal achievement.
(29) experienced pregnancy, or fathered a pregnancy.
(30) had a major change in the health or behavior of a family member.
(31) had sexual difficulties.
(32) had trouble with in-laws.
(33) had a major change in the number of family get-togethers (a lot
more or a lot less).
(34) had a major change in financial state (a lot worse off or a lot
better off than usual).
(35) gained a new family member (through birth, adoption, older per-
son moving in, etc.).
(36) changed your residence or living conditions.
(37) had a major conflict in or change in values.
(38) had a major change in church activities (a lot more or a lot less
than usual).
(39) had a marital reconciliation with your mate.
(40) were fired from work.
Now move to Section II of the Answer Sheet.
(41) were divorced.
(42) changed to a different line of work.

(43) had a major change in the number of arguments with spouse (either a lot more or a lot less than usual).
(44) had a major change in responsibilities at work (promotion, demotion, lateral transfer).
(45) had your spouse begin or cease work outside the home.
(46) had a major change in working hours or conditions.
(47) had a marital separation from your mate.
(48) had a major change in usual type and/or amount of recreation.
(49) had a major change in the use of drugs (a lot more or a lot less).
(50) took a mortgage or loan less than $10,000 (such as purchase of a car, TV, school loan, etc.).
(51) had a major personal injury or illness.
(52) had a major change in the use of alcohol (a lot more or a lot less).
(53) had a major change in social activities.
(54) had a major change in the amount of participation in school activities.
(55) had a major change in the amount of independence and responsibility (for example: for budgeting time).
(56) took a trip or a vacation.
(57) were engaged to be married.

The influence of recent life experience on the health of college freshmen

The number of times during the last year that you:
Code: (A) 0 (B) 1 (C) 2 (D) 3 (E) 4 or higher.
(58) changed to a new school.
(59) changed dating habits.
(60) had trouble with school administration (instructors, advisors, class scheduling, etc.).
(61) broke or had broken a marital engagement or a steady relationship.
(62) had a major change in self-concept or self-awareness.

L.C.U. SCORES FOR EACH OF LIFE CHANGE EVENTS ON CSRE

(1) Entered college	50
(2) Married	77
(3) Trouble with your boss	38
(4) Held a job while attending school	43
(5) Experienced the death of a spouse	87
(6) Major change in sleeping habits	34
(7) Experienced the death of a close family member	77
(8) Major change in eating habits	30
(9) Change in or choice of major field of study	41
(10) Revision of personal habits	45
(11) Experienced the death of a close friend	68
(12) Found guilty of minor violations of the law	22
(13) Had an outstanding personal achievement	40

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 *(14) Experienced pregnancy, or fathered a pregnancy              68
  (15) Major change in health or behavior of family member         56
  (16) Had sexual difficulties                                     58
  (17) Had trouble with in-laws                                    42
  (18) Major change in number of family get-togethers              26
  (19) Major change in financial state                             53
  (20) Gained a new family member                                  50
  (21) Change in residence or living conditions                    42
  (22) Major conflict or change in values                          50
  (23) Major change in church activities                           36
  (24) Marital reconciliation with your mate                       58
  (25) Fired from work                                             62
  (26) Were divorced                                               76
  (27) Changed to a different line of work                         50
  (28) Major change in number of arguments with spouse             50
  (29) Major change in responsibilities at work                    47
 †(30) Had your spouse begin or cease work outside the home        41
  (31) Major change in working hours or conditions                 42
  (32) Marital separation from mate                                74
  (33) Major change in type and/or amount of recreation            37
  (34) Major change in use of drugs                                52
  (35) Took on a mortgage or loan of less than $10,000             52
  (36) Major personal injury or illness                            65
  (37) Major change in use of alcohol                              46
  (38) Major change in social activities                           43
 ≡(39) Major change in amount of participation in school activities 38
  (40) Major change in amount of independence and responsibility   49
  (41) Took a trip or a vacation                                   33
  (42) Engaged to be married                                       54
  (43) Changed to a new school                                     50
  (44) Changed dating habits                                       41
  (45) Trouble with school administration                          44
 §(46) Broke or had broken a marital engagement or a steady
       relationship                                                60
  (47) Major change in self-concept or self-awareness              57
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*Underlined phrase added; †Wife changed to spouse; ≡Co-curricula changed to school; §Underlined phrase added.

APPENDIX C

THE SOCIAL READJUSTMENT RATING SCALE

Name: _____   Subject Number: _____

Sex: _____   Age: _____

Educational Status: _____   GPA: _____

Marital Status: _____

Most of life spent in:
    rural area _____   town (5,000+) _____
    city (20,000+) _____   large city (100,000+) _____

Instructions: People adapt to life changes in different ways. Some
                 people find the adjustment to a residential move, for
                 example, to be enormous; whereas others find very little
                 life adjustment necessary. For each of the 47 times on
                 the following pages, circle "Yes" if you have actually
                 experienced that event at any time in your life, and "No"
                 if you have never experienced that event. Be sure to
                 circle "Yes" or "no" for all the events listed below.

                 You are then requested to "score" each of the life events
                 listed below as to the amount of adjustment you feel is
                 necessary to handle that event. Your score can range
                 from 0 to 100 "points." Thus, if you feel that a change
                 in residence represents a near maximal life adjustment
                 for you, place an "X" toward the 100 end of the scale.
                 On the other hand, if you feel that a change in residence
                 requires very little life adjustment for you place an "X"
                 toward the 0 end of the scale. Use your personal esti-
                 mate of the intensity of each life event to arrive at
                 your score. Be sure to "score" all the events listed.

Sample: A. Made a change in or choice of a field of study: Yes No
               Amount of adjustment required 0———————————100

           B. Got married: Yes No   0———————————100

Item Number
1. Entered college: Yes No
        Amount of adjustment required   0———————————100

47

2. Got married: Yes   No
        Amount of adjustment required
                                                    0———————————100
3. Had either a lot more or a lot less trouble with your boss: Yes   No
        Amount of adjustment required   0———————————100
4. Held a job while attending school: Yes   No
        Amount of adjustment required
                                              0———————————100
5. Experienced the death of a spouse: Yes   No
        Amount of adjustment required
                                              0———————————100
6. Experienced a major change in sleeping habits: Yes   No
        Amount of adjustment required
                                              0———————————100
7. Experienced the death of a close family member: Yes   No
        Amount of adjustment required
                                              0———————————100
8. Experienced a major change in eating habits: Yes   No
        Amount of adjustment required
                                              0———————————100
9. Made a change in or choice of a major field of study: Yes   No
        Amount of adjustment required   0———————————100
10. Had a revision of your personal habits: Yes   No
        Amount of adjustment required
                                              0———————————100
11. Experienced the death of a close friend: Yes   No
        Amount of adjustment required
                                              0———————————100
12. Have been found guilty of minor violations of the law: Yes   No
        Amount of adjustment required   0———————————100
13. Had an outstanding personal achievement: Yes   No
        Amount of adjustment required
                                              0———————————100
14. Experienced pregnancy, or fathered a pregnancy: Yes   No
        Amount of adjustment required
                                              0———————————100
15. Had a major change in the health or behavior of a family member:
     Yes   No
        Amount of adjustment required
                                              0———————————100
16. Had sexual difficulties: Yes   No
        Amount of adjustment required
                                              0———————————100
17. Had trouble with in-laws: Yes   No
        Amount of adjustment required
                                              0———————————100
18. Had a major change in the number of family get-togethers: Yes   No
        Amount of adjustment required   0———————————100
19. Had a major change in financial state: Yes   No
        Amount of adjustment required
                                              0———————————100
20. Gained a new family member: Yes   No
        Amount of adjustment required
                                              0———————————100
21. Changed your residence or living conditions: Yes   No
        Amount of adjustment required
                                              0———————————100

22. Had a major conflict in or change in values: Yes No
      Amount of adjustment required   0———————————100

23. Had a major change in church activities: Yes No
      Amount of adjustment required   0———————————100

24. Had a marital reconciliation with your mate: Yes No
      Amount of adjustment required   0———————————100

25. Were fired from work: Yes No
      Amount of adjustment required   0———————————100

26. Were divorced: Yes No
      Amount of adjustment required   0———————————100

27. Changed to a different line of work: Yes No
      Amount of adjustment required   0———————————100

28. Had a major change in the number of arguments with spouse: Yes No
      Amount of adjustment required   0———————————100

29. Had a major change in responsibilities at work: Yes No
      Amount of adjustment required   0———————————100

30. Had your spouse begin or cease work outside the home: Yes No
      Amount of adjustment required   0———————————100

31. Had a major change in working hours or conditions: Yes No
      Amount of adjustment required   0———————————100

32. Had a marital separation from your mate: Yes No
      Amount of adjustment required   0———————————100

33. Had a major change in type and/or amount of recreation: Yes No
      Amount of adjustment required   0———————————100

34. Had a major change in the use of drugs (more or less):   Yes No
      Amount of adjustment required   0———————————100

35. Took a mortgage or loan less than $10,000 (such as purchase of a new car, TV, school loan, etc.):   Yes No
      Amount of adjustment required   0———————————100

36. Had a major personal injury or illness: Yes No
      Amount of adjustment required   0———————————100

37. Had a major change in the use of alcohol: Yes No
      Amount of adjustment required   0———————————100

38. Had a major change in social activities: Yes No
      Amount of adjustment required   0———————————100

39. Had a major change in the amount of participation in school activities: Yes No
      Amount of adjustment required   0———————————100

40. Had a major change in the amount of independence and responsibility: Yes No
      Amount of adjustment required   0———————————100

41. Took a trip or vacation: Yes   No
        Amount of adjustment required

0————————————100

42. Were engaged to be married: Yes   No
        Amount of adjustment required

0————————————100

43. Changed to a new school: Yes   No
        Amount of adjustment required

0————————————100

44. Changed dating habits: Yes   No
        Amount of adjustment required

0————————————100

45. Had trouble with school administration (instructors, advisors,
    class scheduling, etc.):   Yes   No
        Amount of adjustment required

0————————————100

46. Broke or had broken a marital engagement or a steady relationship:
    Yes   No
        Amount of adjustment required

0————————————100

47. Had a major change in self-concept or self-awareness: Yes   No
        Amount of adjustment required

0————————————100

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