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Life Stress and Drinking Behavior of Veterans Following in Patient Treatment

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LIFE STRESS AND DRINKING BEHAVIOR OF VETERANS FOLLOWING INPATIENT TREATMENT

by

Marilyn J. Becker

A Dissertation
Submitted to the
Faculty of The Graduate College
in partial fulfillment
of the
Degree of Doctor of Education

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Marilyn J. Becker

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CHAPTER I
INTRODUCTION

All our lives long, every day and every hour, we are engaged in the process of accommodating our changed and unchanged selves to changed and unchanged surroundings; living, in fact is nothing else than this process of accommodation; when we fail in it a little we are stupid, when we fail flagrantly we are mad, when we suspend it temporarily we sleep, when we give up the attempt altogether, we die.

Samuel Butler

The abrasions of daily living wear upon each individual in unique ways and the styles of confronting or postponing reality are endless. Toffler (1970) proposed that this generation is experiencing an abrupt collision with the future, and people are being swept along in a current of change that demands ceaseless coping. He coined the term "future shock" to describe the shattering anxiety and disorientation induced in individuals who are subject to great change in a short time span. Acceleration and transience are singled out as the two most powerful forces which lead to the disease of change, a psychological condition Toffler believes to be afflicting millions. He further contends that the professional who supposedly can help people cope with change knows very little about adaptivity or the irrational resistance to change exhibited by many.
The pre-Toffler term "stress" is also used to describe the state of an individual when adaptive and decision making powers are taxed. Response to stress has been a target for investigation by physiologist and psychologist alike and the stress research stands as a denial to Toffler's contention that little is known about adaptability.

In truth, it is mal-adaptability with which researchers and the entire professional care giving system is concerned: adaptability gone awry, the over response to stress, the over correction of behavior, or the over indulgence in coping strategies which at one time served to make life workable or as least tolerable.

A classic among the self-selected modalities of adaptation, which for some evolves into mal-adaption, is the drinking of alcoholic beverages. Calahan (1969) reports that drinking itself is statistically normal behavior in the United States: the 1965-65 George Washington University National Survey of American drinking practices revealed that 68% of the "over 21" population claim they drink at least once a year, the majority of those drink at least once a month, and 12% drink nearly every day. Yet there appears to be great ambivalence about the personal implications of drinking. A total of 78% of the respondents thought alcohol did more harm than good but when subsequently asked what is good about drinking, a majority claimed it to be a definite help in socialization and an aid to relaxation. Only
35%, largely the abstinent group, replied that nothing good can be said for alcohol.

The epitome of conflict over the tension reducing qualities of alcohol and the eventual destructiveness of the beverage are found in the person of the recovering alcoholic. He attempts to act upon the belief that for him nothing good can be gained from alcohol, but years of intermittent experience in which alcohol has accomplished the habit of social reinforcement and tension reduction commonly sought by drinkers. To drink or not to drink is a crucial decision for many whose dependence on alcohol leads to repeated and implicated drinking so as to cause injury to health, or to social or economic functioning (Keller, 1962).

Many studies have focused on the devastating effects of psychological and emotional stress upon both physical and mental health (Dodge, 1970; Janis, 1958; Lang, 1952; Levi, 1967, 1972; McGrath, 1970; Rhae, 1970; Selye, 1956), however, little work has been published regarding stress and its relationship to the etiology of alcoholism and even less about the role played by stress in the recovery process of the alcoholic.

Demographic data have been gathered in population surveys which link excessive and heavy drinking with persons who were relatively unhappy, who exhibited neurotic tendencies and who were
more dependent upon external aids to alleviate tension (Calahan, Casisin, & Crossley, 1969) prior to alcoholism. Studies of the individual after alcoholism has been diagnosed make inferences to personal styles of coping. Catazarro (1968) states that there is no clear cut and predictable alcoholic personality but there are certain characteristics which appear in the majority of alcoholics and thereby provide the seedbed in which alcoholism grew. Among those common traits are the inability to express emotions, low frustration tolerance, over dependency, and perfectionism, all of which contribute to high levels of anxiety in stress situations.

Emrick (1974) did an exhaustive review of follow-up studies of treated alcoholics in which he attempted to compile answers to the questions: (1) does drinking behavior change after treatment, and (2) which criteria relate to changed drinking behavior. He analyzed 271 studies that evaluated outcome following some psychologically oriented treatment of alcoholism and found drinking outcome to be related positively with outcome on dimensions in work situation, interpersonal relationships in the home, physical health and legal problems. He further suggests that data point to areas of continued inpatient treatment and financial situation as showing promise for a potential relationship to sobriety.

Increased drinking prior to development of alcoholism has
been linked with ineptness in coping with people and events, and those afflicted with drinking problems are commonly found to be inflexible in anxiety provoking situations. If the successfully treated alcoholics demonstrate reduced conflict in home, work, and social settings, it would then seem appropriate to propose that the recovery period for an alcoholic, after treatment, would show a relationship between life stress experiences and drinking behavior.

The present study was designed as a follow-up study of alcoholics with emphasis on the impact of life stress experiences and the resumption of drinking. A number of questions are generated by an investigation of stress: Which life situations generate stresses after returning from treatment? Is there a relationship between amount of stress and that first drinking episode? Does cumulative stress eventually wear down the resolve to avoid drink?

Related Literature

There is an abundant and evergrowing volume of literature on stress representing the work of many behavioral disciplines. The literature selected for review as relevant to this study has been organized into four categories: (1) the development of the theory of stress as it relates to physical and mental health; (2) applied research and measurement of life stress in human experience; (3)
studies of stress and alcohol; and (4) assessment and issues in methodology.

The work reviewed here is taken largely from the areas of medicine, psychology, and sociology and is offered in support of the study.

**Development of the theory**

Stress in engineering terminology has a precise meaning and an equally exact mathematical formula that described the external influences that cause the wear and tear sustained by a given structure. Stress has also come to have meaning when the physical structure is the human body and the resulting wear and tear is sustained physiologically. Insult or invasion may well be measured in blows or infections but what of psychological insult and social invasion? It is stress in the street language of every day experience with which the alcoholic has a speaking acquaintance and that is the stress of interest within this study.

Authors of many persuasions concur that early experimentation and theory development in the study of stress were influenced by the work of Cannon (1939) who made detailed observations of the bodily changes related to pain, hunger, and major emotions. He used the term "homeostasis" to describe the action of the body to adjust,
readjust, and return all systems to a steady state following disturbance. Cannon concludes, "... persistent derangement of bodily functions in strong emotional reactions can be interpreted as due to persistence of stimuli which evoke the reactions," (p. 261). Cannon, in effect, showed empirically that stimuli associated with emotional arousal can cause changes in the basic physiological processes.

The physician, Aldolph Meyer (1957) believed that the events of a person's life and his reactions to those events had significance in the etiology of disorder. In creating the diagnostic life chart, he advocated recording not only emotionally charged or catastrophic events, but also changes of habitat, schooling, family births and deaths and other important environmental incidents.

Selye (1956) discusses the early criticism of his choice of the term "stress" in reference to body systems, although he observed that fragments of a stress concept had floated about aimlessly in medical literature. Selye devoted himself to the isolation of the physiological manifestations of the body as it meets the challenge of insult or injury. He calls the General Adaptive Syndrome (GAS) the blueprint from which the mechanics of the stress syndrome can be investigated. The GAS consists of three phases: (1) the alarm reaction, (2) the stage of resistance, (3) the stage of exhaustion. Within this physiological framework, Selye chose to define stress as:
The sum of all nonspecific factors (normal activity, disease producers, drugs, etc.) which can act upon the body. These agents themselves are called stressors, when we refer to their ability to produce stress. . . . It is important to keep in mind that stress is an abstraction and has no independent existence (p. 42, 43).

Levi (1967), a colleague in the physiological research of stress, termed this concept "Selye stress" and suggests that caution be used in strict interpretation of the nonspecificity of the stress response it relates to psychosocial stimuli. His work in the area of sympatho-adreno medullary function supports that a close relationship exists to psychological function. Levi urges that much research is needed to define more clearly the relationship of stress to body response and subjective states of the individual.

Lazarus (1966) takes the position that the definitions of stressors, stress, and strain may be immaterial, since the central issues are the identification of the external or internal forces that may be the stimulus conditions of stress. He concerns himself with the investigation of the intervening structures and processes that determine when and in what form stress responses will occur. To explain stress as a psychological phenomenon, Lazarus examines the cognitive processes in threat and the coping process as the key intervening variables in psychological stress. Threat has an anticipatory property and perception, memory, judgment, thought,
converge to appraise the potential harm posed by the threat. Anxiety is a reaction, a clue or danger signal, that might be compared to Selye's alarm reaction phase in the GAS at a psychological level. Mediating at the coping level are personality factors of motivations, ego resources, defensive disposition and belief systems about the environment and the individual's resources. The consequences of stress, both behavioral and physiological, are perhaps the most accessible for measurement by inventories of affect, observation of cognitive style and body language, and alterations in adaptive functioning. Lazarus' material provides a translation of the physiological stress syndrome into a parallel model of psychological stress that contributes to the present study, i.e., drinking as an adaptive mechanism in stress situations.

The theorists are still at work and the following observation by Mechanic (1970) is generous in acceptance of stress models that are at this time appropriately incomplete:

In one sense the utility of stress concepts is promoted by their lack of specificity, since the use of an ambiguous rubric promotes interdisciplinary links between biology, psychophysiology, psychology and sociology. . . . Although stress researchers have interests in common--and probably benefit from what workers in other disciplines concerned with stress are trying to do--little is gained by trying to force such work into a common mold. Implicit in such attempts at common definition is the idea that it is possible to construct a viable integrated theory of behavior (pp. 83, 84).
Before going on to the traditional reporting of selected studies, some comments are due on trends-in-the-making that appear to have great impact on both theory and research.

There have been, in recent years, a number of national and international seminars or symposiums on the topic of stress which have brought together prestigious scientists of many disciplines. Sharing information and reports of progress has served to generate continuing cooperative efforts in research that are often intercontinental. Such gatherings frequently spawn collaborative publications of conference proceedings, liberally referred to in the present study, and inquiry into the contributors of these volumes helps one better understand the direction of the representative disciplines.

In Norway, June, 1972, the Symposium on Life Stress and Illness, sponsored by North Atlantic Treaty Organization (NATO) brought together 20 scientists largely from medicine and psychiatry, who were engaged in stress research having to do with the health problems. The ensuing publication titled, Life Stress and Illness, was edited by Gunderson and Rahe (1974), of the U. S. Navy Medical Neuropsychiatric Research Unit. The impact of this volume lies in the reporting of various national populations on health and biophysical variables.

The Conference on Stressful Life Events in June, 1973, was
supported by a National Institute of Mental Health grant. The book of the same name, edited by Bruce and Barbara Dohrenwend (1974), has a flavor of community mental health in which sociologists, epidemiologists, academicians from the social sciences, hold forth on physical and mental illness, community psychiatry and methodology in research.

Also in June of 1973 an international group of psychologists and psychiatrists gathered with NATO sponsorship to attend an Advanced Study Institute on Stress and Anxiety in Modern Life in West Germany. Spielberger and Sarason (1973), both noted for study of anxiety as a psychological construct, co-edit the volume of collected lectures. The focus of this group was on the effects of stress as evidenced in clinical anxiety, controlled experimental studies of stress, fear and anxiety and recent developments in management of stress and treatment of anxiety.

The three themes of ongoing stress research reflected above are stress and illness, stress as a psycho-social phenomena and stress and anxiety in the clinical study of man and emotion.

From these separate but overlapping areas of inquiry, the following studies were selected to promote understanding of stress as it relates to the problem of studying stress and the alcoholic.
Applied research

A landmark field study to investigate relationships between life stress and mental health was undertaken by a group of social scientists in 1950 under the title of the Midtown Community Mental Health Project. Dr. Thomas Rennie, who initiated the study, described himself as a social psychiatrist whose task it was to ascertain how many individuals within society are emotionally or mentally crippled. Langner (1963) reports a goal of the project was to "determine the significant facts in family and society which affect adaptation ... as reviewed through studies of individuals operating in their natural setting" (p. 2-3). In the conceptual framework of the Midtown Study, stress signified the environmental force pressing on the individual and strain became the reaction to stress, the extreme limits of strain being demonstrated in mental disorder or ill health. The random sample was drawn from a residential borough of Manhattan representing 1.5% of the population. In addition to surveys of sociographic characteristics and a psychiatric treatment census, home interviews of 1,660 subjects were conducted. A structured questionnaire was used in which roughly half of the 415 items represented demographic stress factors and signs and symptoms of mental disturbance represented strain. The results were then converted into mental health ratings based on psychiatric judgment.
A significant finding in the study indicated that the higher the stress score the greater the mental health risk. Number of indices, rather than pattern of negative factors, was more important in predicting mental health status. When investigating the stress variables between socio-economic groups, the average number of stress experiences was similar, yet when examining low socio-economic status groups, the proportion of stress experiences varied, showing greater childhood deprivation, poor adult health, and lack of close friends in whom one could confide. It is pertinent to the present study that alcoholism was categorized as a symptom of character disorder and emerged as a mental health risk factor among the downward mobile group.

Investigations of relationships between stress and illness among isolated heterogeneous groups proliferate in the psychosomatic literature. Dodge (1970) points out that we have experienced in our lifetime dramatic changes in the cause of death. Infectious and contagious diseases are largely under control only to be replaced by chronic diseases. Among the medical areas reported are: Myocardial infarctions (Theorell & Rahe, 1971), childhood leukemia (Wold, 1968), respiratory illness, heart disease, skin conditions, hernia (Rahe et al., 1964) and cancer as early as 1966 (Turner). Universally the data show high degrees of relationship between stress experiences
and health. Holmes and Masuda (1974) postulate that life change
events, by evoking adaptive efforts in human organism that are faulty
in kind or duration, lower "bodily resistance" and enhance the proba-
bility of disease occurrence. If alcoholism can be conceptualized as
a disease, it too bears investigation as a chronic and recurring illness.

Concurrently, psychiatric researchers examined the correlates
of stress and mental disorder: depression (Hudgens, 1970; Paykel,
Meyers, Klerman, Lendenthal, & Pepper, 1969), schizophrenia
(Brown, Birley, & Wing, 1968), and an untold number of studies of
mixed psychiatric classifications. In Brown and Birley's study, the
investigators designed a structured questionnaire of commonly assumed
stress events that was used to study 50 schizophrenic patients and a
rough-age matched general population sample of 377 persons. Differ-
ences in stress experiences between the patient group and general
population were significant ($p < .001$) for changes of job, changes of
residence and health changes. In the three week period prior to
onset of illness, the rate of events for patients was three times
greater than in the general population but outside that time period
the rate was much the same. Brown and Birley also studied the
depressive syndrome and found very similar results in onset of
illness data. Taking severity of threatening implications into
account, depressed patients had a generally higher rate of severe
experiences over an entire nine month period as well as a markedly severe experience prior to onset of illness ($p < .001$). The time factor and accumulated stress prior to the onset of resumption of drinking bear investigation in light of these findings.

The studies which isolate various sociocultural and socio-economic groups pursue the precept that selected demographic, psychosocial or occupational characteristics may precipitate illness: Antonovsky, Maoz, Dowty & Wijenbeek, (1971), worked with former concentration camp residents; Rahe et al. (1970), were able to do prospective studies with over 2,000 naval personnel at sea aboard cruisers; Janis (1958), worked pre-and post-measures of stress and coping with surgical patients; Grinker and Spiegel (1945) reported on the psychiatric treatment of men suffering battle fatigue; and Dodge and Martin (1970) studied mortality patterns in industrial society. Though this group of studies are varied in format and conclusions, in each case additional support is gained for the reality that social, economic, and cultural conditions over which we have limited control universally affect man's state of well being.

The above studies are representative of the work which forms the baseline of much of the ongoing research. It is interesting to note that rarely in the stronghold of stress research has alcoholism been considered a psychological, sociological or physical entity.
worthy of more than passing mention within a symptomology grouping.

Studies of stress and alcohol

That alcohol functions to reduce the symptoms of stress appears more often as an assumption than it does as a hypothesis worthy of inquiry. Capell and Herman (1972) reviewed the accumulated alcohol research on anxiety and tension reduction focusing on only controlled experimental designs which tested an implicit or explicit hypothesis that alcohol reduces tension.

An analysis of the bibliography revealed that of the 88 studies considered pertinent, over 84% were animal studies employing experimentally induced stress and physiological measurement of stress. In these reports, the laboratory methodology did poorly to support the tension relief theory. In the remaining 16% of the studies, human subjects were placed in contrived laboratory situations. Employing affective self-reports in social drinking situations, results indicated that symptoms and anxiety decreased with use of alcohol. Another group of human studies in the same review, structured risk taking settings as stressors. Risk taking behavior was elevated because fear response was inhibited by alcohol, but any substantial reduction of fear held true only at moderate consumption levels. The fear of risk returned with high dosages of alcohol.
The above studies reflect the experimental trend of employing stress as the variable to be manipulated in controlled settings. A limited number of studies with alcoholics identify stress as environmental or psycho-social.

Hershenon (1965) hypothesized that some persons may become alcoholic in order to gain identity. Furthermore, activities which reinforce identity can be expected to be tension reducing. Hershenon reported subjects having stronger identity as alcoholics will drink in proportionately more of the stressful situations ($p < .05$) and substantial numbers of those will drink to drunkenness ($p < .10$).

Of particular interest is the means by which Hershenon measured stress. He compiled a list of 15 situations reported by alcohol clinic clients to be most anxiety provoking. Five items related to the self system (introspective perceptions of self), five to interpersonal systems (self and friends), and five to job situations. Hershenon's scale is an example of a highly specialized tool for stress reporting by an exclusive population and although it overlaps in content with the Holmes and Rahe measure, all items were clearly negative in content. Many of the items are subjective and over 50% could easily go unreported by alcoholics with strong denial systems.

A large scale study of stress and personality variables and their relationship to traffic accidents was conducted in Michigan under a NIMH grant. From the total study population Vinokur and Selzer
(1975) selected a subsample of 285 alcoholics in treatment to compare with 774 drivers renewing licenses or attending traffic safety schools. In addition to measures of personality, depression, and psychosomatic symptoms, subjects were administered a Modified Schedule of Recent Events (Holmes & Rahe) in which the severity of stress experienced was ruled on a four-point scale and each item was judged by the respondent as desirable or undesirable. The alcoholic group studied experienced much higher levels of stress and reported more undesirable and fewer desirable events than the comparison group ($p < .01$).

In a doctoral dissertation currently in progress, Leavy employed Holmes and Rahe stress measure with 30 inpatients in the VA Hospital in Brockton, Massachusetts. Tentative findings indicate that unexpected life events and experiences viewed as exits are most clearly related to alcohol consumption prior to treatment.

As it became evident to alcohol treatment personnel that recidivism is a sizeable problem (Edwards, 1967) many researchers went beyond counting recovery percentages and attempted to locate situations in which drinking is resumed after treatment (Deardorff, Meagles, Hout, & Savage, 1975; Ludwig, 1972; Pattison, Headley, Gliser, & Gottschalk, 1968). A composit list of reasons alcoholics return to drinking is a counterpart to Emrick's categories connoting recovery in alcoholics, i.e., social, family, interpersonal emotional employment and physical health.
Tamerin, Tolor, and Eyes (1975) of the Silverhill Foundation used the Hershenon measure with 50 alcoholics in treatment and 50 recovered alcoholics of Alcoholics Anonymous persuasion who had achieved a year or more sobriety. When comparing subject's reports of arousal of the desire to drink, the recovered group had clearly fewer occasions of arousal but the situations which did stimulate the desire response were identical to those reported by treatment groups: when alone with nothing to do, when unable to handle personal problems and when arguing with someone close to you. Tamerin believes that conquering the desire to drink is tantamount to cure for alcoholics.

A follow-up study of alcoholic relapse during six months immediately after treatment while the client was engaged in regular outpatient visits was conducted in a large London hospital (Hore, 1971). Unfortunately a very limited number (14) were followed successfully and absence of anxiety build-up or unusual life events in kind or number must be interpreted with caution. Another critical problem with study design was the limited time period for follow-up. Hore's problems in maintaining sample size are remarkably like those suffered by treatment programs across the board (Emrick, 1973).

The foregoing studies indicated that stressors can be isolated and responses to stress were observable in the general population as well as among heterogeneous subgroups, one of whom is alcoholics.
The remainder of research reviewed examined the tools to be used in this research and some accompanying methodological considerations.

Assessment and issues in methodology

A perplexing decision common to most students of stress is how to measure life events for impact. An inherent problem is distinguishing between precipitating events and events subsequent to poor coping techniques. Many checklists have been compiled (Dohrenwend, 1974) in which events of marriage, births, deaths, employment, et cetera, appear repeatedly. Some item differences are accounted for by the uniqueness of the subject's experience or dictated by the study setting as in military service or prison camp.

By far the most widely reported upon measure of stressful life events is the Social Readjustment Rating Scale (SRRQ) (Holmes & Rahe, 1967). The development of this tool was prefaced by systematic use of a life chart device (Meyers, 1951) with over 5,000 patients. One theme emerged: each occurrence usually evoked or was associated with some adaptive or coping behavior on the part of the individual. The items of the SRRQ were designed with emphasis on the indices of change from an existing steady state and not on psychological meaning, emotion or social desirability of stress events. Other measures have been designed with this aspect of stress paramount (Brown & Birley, 1968).
The items of the SRRQ were standardized on a sample of 394, described as a random sample of convenience, judged representative of a general population (Masuda & Holmes, 1967). Respondents rated the magnitude of 43 life events as compared to a given score of a modular item. The ranking and item scores of the arithmetic mean, geometric mean, and median were in close parallel and a lineal relationship between variability of item scores and magnitude of item scores was demonstrated. This measure was selected for this study as the most appropriate tool on the basis of proven adequacy with many researchers (Casey, 1967; Ruch, 1971) adaptability to the method and type of sample to be used.

Retrospective studies of life stress events have been subject to sharp criticism (Hudgens, 1974) and defended from many quarters (Paykel, 1974; Cobb, 1974). Rahe (1974) co-developer of the instrument used in this study, states that:

This falloff in reliability seems to be related primarily to: (1) The time interval between administration of the questionnaire; (2) The education level and probable intelligence level of subjects; (3) The time interval over which recent life changes for yearly rather than 6 mo. intervals, reliability increased; (4) The wording or format of the questions--questions with modifiers in them (e.g. "major" or "a lot more") and intricate formats were less reliably answered than those without qualifiers which are simply presented; (5) the intercorrelations between life events in which handling the questions by interrelated clusters rather than by the score sequence increases test reliability (p. 83).
Rahe also comments that personal factors interfering with subjects' cooperation in questionnaire completion will lead to somewhat lower reliabilities than those which might be achieved through solicitous interviews.

The deterioration of memory in the alcoholic must also be taken into consideration in this study, which depends heavily upon recall. Ryback (1971) has summarized the literature on the effects of alcohol upon memory. Deficits of memory function are repeatedly confirmed in immediate recall tasks of less than 60 seconds and short-term memory which experimentally may range from several minutes up to 24 hours. Deficits in remote memory or retention of recent events beyond the experimentally contrived settings are discussed only in conjunction with Wernke and Korsakoff's syndrome patients.

The validity of recall and self report were also investigated (Casey, 1967). The subjects reported on SRRQ events for 1953, 1960, 1963, or seven years, four years, and one year. Nine months later they reported for the same time periods. The two factors affecting recall the most were saliency of item to individual (perception of importance) and magnitude of the item. Less material was recalled for more distant time periods but consistency of recall was unaffected.

Another issue in methodology is that of the validity of self-report as a research tool. In the general population free of
psychiatric diagnosis, there is reassurance that self-report is indeed a reasonable means of inquiry (Agnew, 1964; Penneau & Milton, 1958). The question of validity increases greatly when the subject is an alcoholic in whom denial and grandiosity are superbly developed defense mechanisms (Cantazarro, 1970; Chafetz & Demone, 1962; Jellinek, 1960; Hinkle, 1976). Guze and colleagues found that in psychiatric interviews of male criminals in 97% of the cases an accurate diagnosis of alcoholism could be made on subjects' self-report and that 80% of disagreement between relatives and subjects on questions involved positive answers from the subject and negative answers from relatives.

Garrett's (1974) answer to the problem of self assessment at intake was to use classifications of "heavy," "moderate," and "light" drinking. When compared with quantity frequency ratings derived from interviews, he contends categories are no less accurate than more intricate quantity-frequency-variability rating.

Compounding the self-report issue is the problem of devising a scale that reflects alcohol intake that quantifies and qualifies the abuse occurring in a framework that also diminishes problems of report and recall. Bowman, Stien, & Newton (1975) reviewed existing measures and devised a tool of some sophistication. The pattern index, the degree to which intake deviates from the unchanging pattern of equal daily consumption, was unfruitful in predicting social
adjustment but volume or countable occurrences were a good index.

In summary, the limitations as referred to in studies above, which could affect this study are: (1) the ambiguities of recall in retrospective reporting, (2) memory afflictions of some alcoholics, (3) distortions of self-report and (4) ambiguous design of drinking measures. The design and methodology of the study were contrived to control, to the greatest possible extent, these shortcomings.

The Problem and Purpose of the Study

The study was concerned with the investigation of stress in the life of the individual who has chosen to deny himself in situations of stress, the one coping technique most familiar to him, drinking of alcohol. Such individuals were expected to be found in a post-treatment population.

Using a follow-up study format with veterans treated in a Veterans Administration Hospital rehabilitation program, an attempt was made to learn of the existence of relationships between the occurrence of life events and the return to drinking (for stress reduction) following treatment. The study allows examination of possible environmental stress, correlates of resumed drinking. It often appears that the problem drinker's success is too easily claimed by the treatment program while failure is placed at the feet
of the individual. The significance of the study was based on the rationale that if failure to employ alternate coping strategies can be linked to identifiable stress experiences prevalent in the post-treatment environment more specific pre-discharge treatment may be designed to alert and prepare clients for potential relapse situations and, thus, ensuing recidivism may be alleviated or reduced appreciably.

The dependent variable was drinking behavior as measured by days of drinking (DD) and the independent variables were the stress scores as measured by the schedule of recent experience (SRE) item adapted for the telephone interview schedule. The stress score (SS) was the sum of SRE items experienced in the 30 months after discharge and the adjusted stress score (ASS) was the difference between events rated by the respondent as desirable, undesirable or neutral using 500 as a standard score.

The questions under consideration in this study were:

1. Was there a relationship between stress and the length of abstinence after discharge?
2. Was there a relationship between stress and the severity of first episode (severity = consecutive days of drinking before onset of self-imposed abstinence)?
3. Was there a relationship between stress and drinking throughout a 30 month time following discharge?
4. Was there a relationship between type of stress and drinking (type = desirable, undesirable, neutral)?
5. Was there a relationship between area of stress and drinking (area = family, marriage, interpersonal, legal)?
CHAPTER II

METHOD

Research within an institution requires an acceptance of and appreciation for the details of proposal preparation which reflect adherence to the professional ethics of the institution and assure confidentiality for the client. The proposal for this study was formulated following American Psychological Association ethical guidelines (APA, 1973). It gained initial acceptance as a doctoral dissertation in the Department of Counseling and Personnel, Western Michigan University (WMU) and, subsequently, underwent a series of review prior to implementation.

The research committee, VA Hospital, Battle Creek, accepted the study as feasible and appropriate. Recommendations for an increase in sample size and minor changes in methodology were incorporated in the proposal. Tentative approval was then granted subject to receipt of a signed document of approval by the Human Subjects Subcommittee of WMU. A comparable group was in formative stages at the hospital but was not yet functional. The proposal was then forwarded to the District Counsel, VA Regional Office, Detroit (the legal consultants to the VA region five), where the
attorneys' review focused on compliance with recent legislation (Federal Register, 1972) and VA research criteria (Note 1). The procedures for gaining informed consent from the veteran and determination of any existing guardianship were clarified and the project was recommended for acceptance. Final approval was granted by the Battle Creek Hospital Director, September 28, 1975.

The Population: Setting and Characteristics

The Veterans Administration Hospital network represents the single largest provider of treatment for alcoholism under one agency (Cantor, 1974). For many years, VA hospitals have cared for the multitudes of veterans suffering consequences of drug abuse of all kinds; however, formal recognition of the need for specialized treatment came as late as 1967, with the establishment of a special staff for alcoholism and related disorders.

Two major facilitating VA policy changes occurred in the mid-60's which allowed special alcohol treatment programs to flourish. The first change was administrative, and removed organic disablement resulting from abuse of alcohol from the category of midconduct. The second change was in the VA's Department of Medicine and Surgery Manual (Note 1), which states that requests for hospitalization for alcoholism will be processed in the same manner as for any other
disorder susceptible to cure or decided improvement. By 1969, a
sample survey revealed that on any one day, 17% of the VA hospital
population suffered from alcoholism or its consequences. Docu-
mentation for the fiscal year 1973, the year from which the current
sample was selected, reveals 17.7% of all hospital discharges were
for alcohol related problems. In the specialized VA psychiatric
hospitals, this figure stands at 28% for the time indicated (McKnight,
1974).

A special 1970 VA census report (Note 2), which focused on
the alcoholic patient, described the alcoholic veteran as:

A defined alcoholic is any bed occupant in a VA hospital
who has an illness characterized wholly or in part by pre-
occupation with alcohol and loss of control over its con-
sumption such as to lead usually to intoxication if drinking
is begun. The illness is characterized by chronicity,
progression and by a tendency to relapse. The (VA)
patient typically has an associated physical disability and
shows impaired emotional occupational and/or social
adjustments as a direct consequence of persistent and
excessive use of alcohol (p. 4).

The VA Hospital, Battle Creek, is an 1,100 bed neurophyschi-
atriic facility, operating a 100 bed alcohol treatment center. The
program began in 1968 was named January House (JH). It is a volun-
tary program providing group therapy, recreation and activity therapy
for patients in a modified therapeutic community milieu with limited
medical model overtones (Sinclair, Note 3). The ambitions of the
program are reflected in the text of the program philosophy handbook.
Our goal is to interrupt the cyclic application of inappropriate behavior (drinking) and to provide an opportunity for the creation of usable mechanisms, which will lead to personal gratification. The individual must develop an adequate and enjoyable substitute for drug use since clearly the habit will not be discarded without development of new and apt social behaviors (p. 2).

The alcoholic population addressed in this study was composed of veterans who requested help from a VA hospital for drinking problems as described in the 1970 census report cited above (Note 2).

The Sample

Veterans discharged from the JH program who successfully completed the eight week treatment program between the dates January 1, 1973 through May 31, 1973 formed the sample for analysis. Eight men of the 134 were judged unsuitable for inclusion: five men readmitted to the hospital within the selected period of time; two men transferred into the January House program from psychiatric wards on which they had been treated in excess of three months; and, one patient with no alcoholism diagnosis treated in the January House program by special arrangement. Although the program had the capability to treat female veterans, fewer than three per year apply for admission and, thus, none were eligible for inclusion in the study. The final sample size consisted of 126 males.
Data Collection

Locating the veterans selected for study was begun by compiling most recent addresses and telephone numbers from three sources: (1) VA Hospital discharge and correspondence records, (2) public records of the Office of Secretary of State, and (3) current telephone directories and information services. The last source was used to confirm and cross-reference all addresses as well as provide a current telephone number.

An introductory letter (Appendix A) was sent to each subject explaining the study and requesting voluntary participation. A postage paid postcard was provided (Appendix B) on which he could place a corrected address, phone number and indicate the day of the week and time of day he wished to be contacted for a telephone interview.

During this period interviewing was begun on confirmed subjects, while second and third follow-up letters were sent at two and three week intervals to continue the location process. Upon receipt of a third non-deliverable introductory letter, location efforts were continued through telephone or mail contacts with next of kin or names of persons secured from the veteran upon admission to VA hospital for contact purposes (Appendix C).

Two methods of consent of voluntary participation in the study were secured. The first was on a signed card returned by the subject
indicating consent and the second was verbal consent upon telephone contact prior to interview, in compliance with VA regulations (Note 1).

In the event that a man had no phone or was unlisted in the directory, but had a confirmed address, a letter was sent to the subject with instructions for making collect calls to the investigator. (Appendix D)

A structured interview technique was used in the telephone interview (Appendix E). All interview calls for data gathering were executed by the primary investigator to control for possible interviewer variables.

The Pilot Study

A pilot study, using ten male subjects, was conducted to test procedures in the tasks of location of subjects and telephone interviewing. The pilot study experience sensitized the investigator to the nuances of technique in telephone contact with both veterans and those who could help find clients who had moved from addresses given at discharge. The preliminary study also allowed practice in data processing, that is, the coding of raw data for transfer to the computer, and verification of analysis procedure. The limited number of cases used and variations in interview technique rendered the results
questionable as to validity and reliability. In essence, the pilot study served to clarify methodology and permitted all refinements to be made in the interview schedule and data management prior to use with the final sample.

Design and Statistical Analysis

The initial portion of the interview was designed to obtain demographic data on the following variables: age, race, primary diagnosis, secondary diagnosis, marital status, employment status, treatment prior to admission to JH and treatment since discharge, including outpatient services and attendance at Alcoholics Anonymous.

Items related to the Social Readjustment Rating Scale (SRRQ) (Holmes and Rahe, 1967) were grouped into experience categories of marriage, family, employment, financial, health, legal, interpersonal and intrapersonal. The SRRQ scale score developed by the authors was assigned to each life experience reported by the veteran in the interview. From the monthly sum of those item values, the Stress Score (SS) was derived using standard procedures (Holmes & Rahe, 1967).

In order to determine if negative stresses were of significance in the post-treatment experience of the veteran, each item indicating a stress experience was rated by him as positive, negative or neutral.
The Adjusted Stress Score (ASS) was calculated using 500 as a standard score for neutral experience, thus, negative experience became 500 minus the item stress value and positive experience became 500 plus the item stress value.

The dependent variable in the analysis of the relationship of stress and drinking was Days Drinking (DD) which was the monthly sum of the days on which some alcohol was consumed, regardless of amount.

The raw data of the interview questionnaire were coded and placed on mark sense forms from which magnetic tapes were prepared and transferred to the Digital Equipment Corporation PDP-10 for data storage and processing.

Analysis of the demographic data was completed using age groupings as the pivotal variable. The age groupings selected were under and including 30 years of age, 31 to 45 years of age, 46 to 50 years of age, and over 50 years of age. Selected cross tabulations were further analyzed by the chi-square test for unequal n's with appropriate degrees of freedom to determine the advisability of using age groups for analysis of the stress variables (Glass & Stanley, 1970). In addition, simple frequency counts and calculated percents were computed to establish a profile of JH graduates.

The major questions raised in the study were answered by use of Pearson product moment correlations and the probability at
which the null hypothesis of no relationship can be rejected were reported. This procedure is in keeping with recent trends in behavioral science research in which the pre-determination of levels of significance are considered arbitrary and having little logical or scientific basis (Winer, 1962). The emphasis was placed on the power of the test rather than the possibility of committing Type I error. When Type I and Type II errors are of approximately equal importance, as is true in the present study, then .20 or .30 levels of significance may be more appropriate than the traditional .05 or .01 levels (Winer, 1962).

The statistical significance of an association between two variables is directly related to the size of the sample, therefore, a meaningful addition to the analysis of the data is frequently a measure of the strength of association between variables. The meaning of the significance levels and the importance of the strength of association as computed by $E^2$ (Kerlinger, 1964) between the dependent and independent variables will be reported and discussed.
CHAPTER III
RESULTS

January House discharges for the period January 1, 1973 through May 30, 1973 totaled 134 veterans. There were eight men who were unsuited for inclusion in the study; thus, the available sample size was 126 males. Location techniques using mailing procedures (Appendices A, B, C, D) and telephone calls made it possible to interview 76 veterans. The summary of location results in Table 3.1 reflects that over 85% of the veterans were contacted personally or information was confirmed by a contact person.

Table 3.1
Results of Location Procedures

<table>
<thead>
<tr>
<th></th>
<th>n</th>
<th>% of potential sample</th>
<th>% of interviewed sample</th>
</tr>
</thead>
<tbody>
<tr>
<td>Located for interview</td>
<td>76</td>
<td>60.32</td>
<td></td>
</tr>
<tr>
<td>Nonparticipants by choice</td>
<td>11</td>
<td>8.73</td>
<td>14.47</td>
</tr>
<tr>
<td>Nonlocated</td>
<td>11</td>
<td>8.73</td>
<td>14.47</td>
</tr>
<tr>
<td>Lost of family and friends</td>
<td>11</td>
<td>8.73</td>
<td>14.47</td>
</tr>
<tr>
<td>Incompetent at time of interview</td>
<td>9</td>
<td>7.14</td>
<td>11.84</td>
</tr>
<tr>
<td>Deceased</td>
<td>8</td>
<td>6.35</td>
<td>10.53</td>
</tr>
<tr>
<td>Totals</td>
<td>126</td>
<td>100.00</td>
<td></td>
</tr>
</tbody>
</table>
Three men returned cards indicating they chose not to participate in the study, four refused to be interviewed in the first telephone contact and another four were judged "passive" non-participants for they avoided appointments for telephone interviews by failure to place or accept the scheduled call. For those who were judged lost to family and friends, no less than three calls were completed to family members and/or significant others given for contact purposes, all of whom confirmed the man's location was unknown to them. The incompetent group included five institutionalized men whose guardians judged them unable to answer questionnaire items and four others who by self admission were drunk at the time of interview.

Demographic Data

The data for analysis were computed on the 76 veterans interviewed. There were 70 white and 6 nonwhite cases representing 92.1% and 7.9% of the interviewed sample, respectively. The hospital ratio of white/nonwhite is two to one. The mean age was 46.3 years and the following age distributions were used for subsequent analysis of demographic variables: 6 cases under 30 years of age (7.9% of the sample); 41 cases, 31 through 50 years of age (53.9% of the sample); and 29 cases over 50 years of age (38.2% of the sample).

Inspection of the diagnostic data taken from hospital records
revealed alcoholism to be the major primary diagnosis and physical problems account for the majority of all secondary diagnosis. Table 3.2 contains the diagnostic profile of the sample. (See page 39)

The diagnostic loadings confirmed that the sample studied was appropriate for this investigation. The limited sample size in other diagnostic categories did not warrant an analysis of data reflecting diagnostic variables.

The comparisons of pre- and post-information on both marriage and employment status were tallied. There were remarkable parallels between the ratio of married, single, and divorced veterans at the time of discharge at the time of interview.

The same pattern was evident regarding employment. The slight attrition of six cases from the employment ranks was compensated for in the expansion of the retirement category by six cases. Summation of these frequencies are found in Table 3.3, page 39.

Several follow-up variables were expanded beyond the SRRQ for demographic and program follow-up purposes. The age groupings were cross tabulated with participation in Alcoholics Anonymous (AA) and four indices of treatment. The chi-square method was used to determine if a systematic variance existed within age groups for different treatment choices. Results presented in Table 3.4, page 40, indicate that there is strong probability (p = .065) that for the
Table 3.2
Primary and Secondary Diagnosis of January House Graduates

<table>
<thead>
<tr>
<th>Diagnosis</th>
<th>Primary</th>
<th>Secondary</th>
<th>Primary %</th>
<th>Secondary %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Psychosis OBS</td>
<td>1</td>
<td>2</td>
<td>1.32</td>
<td>2.63</td>
</tr>
<tr>
<td>Non OBS</td>
<td>0</td>
<td>2</td>
<td></td>
<td>2.63</td>
</tr>
<tr>
<td>Neurosis</td>
<td>5</td>
<td>5</td>
<td>6.58</td>
<td>6.58</td>
</tr>
<tr>
<td>Alcoholism</td>
<td>68</td>
<td>8</td>
<td>89.47</td>
<td>10.53</td>
</tr>
<tr>
<td>Personality</td>
<td>2</td>
<td>2</td>
<td>2.63</td>
<td>2.63</td>
</tr>
<tr>
<td>Physical</td>
<td>0</td>
<td>35</td>
<td></td>
<td>46.05</td>
</tr>
<tr>
<td>No diagnosis</td>
<td>0</td>
<td>22</td>
<td></td>
<td>28.95</td>
</tr>
</tbody>
</table>

Table 3.3
Comparisons of Pre-and Post-Marriage Employment Status

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pre</td>
<td>Post</td>
</tr>
<tr>
<td>Married</td>
<td>23</td>
<td>29</td>
</tr>
<tr>
<td>Single</td>
<td>10</td>
<td>7</td>
</tr>
<tr>
<td>Divorced</td>
<td>37</td>
<td>37</td>
</tr>
<tr>
<td>Full Employed</td>
<td>28</td>
<td>27</td>
</tr>
<tr>
<td>Part Employed</td>
<td>6</td>
<td>5</td>
</tr>
<tr>
<td>Unemployed</td>
<td>36</td>
<td>32</td>
</tr>
<tr>
<td>Retirees</td>
<td>3</td>
<td>12</td>
</tr>
</tbody>
</table>
Table 3.4

Age Groups and Alcoholism Treatment Choices

<table>
<thead>
<tr>
<th></th>
<th>30 &amp; Under n=6</th>
<th>31 - 50 n=41</th>
<th>Over 50 n=29</th>
<th>df</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Participation in AA</td>
<td>1 1.32</td>
<td>13 17.10</td>
<td>18 23.68</td>
<td>6</td>
<td>.065</td>
</tr>
<tr>
<td>Prior VA treatment in January House</td>
<td>0 0</td>
<td>7 9.21</td>
<td>3 3.90</td>
<td>9</td>
<td>.695</td>
</tr>
<tr>
<td>Received Out-patient treatment following discharge</td>
<td>12 15.79</td>
<td>16 21.05</td>
<td>12 15.79</td>
<td>26</td>
<td>.567</td>
</tr>
<tr>
<td>Readmitted to the VA</td>
<td>3 3.95</td>
<td>15 19.73</td>
<td>4 5.26</td>
<td>9</td>
<td>.139</td>
</tr>
<tr>
<td>Treatment outside the VA</td>
<td>3 3.95</td>
<td>10 13.16</td>
<td>10 13.16</td>
<td>18</td>
<td>.637</td>
</tr>
</tbody>
</table>
over 50 age group the AA choice was more than a chance occurrence.

A summary of the follow-up variables analyzed described the sample in several ways. Veterans treated in the January House program in early 1963 were largely in their 40's, about one-third of the group were divorced and more than half of the men were unemployed. When drinking resulted in confrontation of the alcohol problem, the older alcoholic chose the fellowship of AA more frequently than younger men. Readmission to the VA was more often the choice of middle aged groups when in need of help. After approximately two and one half years following treatment, 12 veterans, 15.5% of the sample, claimed total sobriety and an additional 27 were drinking an average of no more than one day a week; 10.53% were drinking more than five days a week.

Stress and the First Drinking Episode

Four null hypotheses were formed in which the first episode of drinking was isolated as an independent variable and stress used as a dependent variable.

Ho1 No relationship exists between the length of time abstinent (LOA) prior to the first episode and life stress experiences (SS).

Ho2 No relationship exists between length of the first episode (LOE) and life stress experiences (SS).
Ho₃ No relationship exists between length of time abstinent (LOA) and type of life stress experience (ASS).

Ho₄ No relationship exists between length of first drinking episode (LOE) and type of life stress experience (ASS).

The first four hypotheses were analyzed by means of Pearson product moment correlation (Glass & Stanley, 1970) and appropriate t-tests of significance. Table 3.5 contains critical values for each variable. All correlations were tested with a two-tailed test using 70 degrees of freedom. In order to be considered for interpretation of possible significance t must approach the following values: .10 = .1954; .25 = .2319; .05 = 2.737; and .01 = .3017.

Table 3.5
Stress and the First Drinking Episode

<table>
<thead>
<tr>
<th></th>
<th>x</th>
<th>r</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abstinence in days of sobriety</td>
<td>244.09</td>
<td></td>
</tr>
<tr>
<td>stress (SS)</td>
<td>50.25</td>
<td>.006</td>
</tr>
<tr>
<td>adjusted stress (ASS)</td>
<td>858.26</td>
<td>.057</td>
</tr>
<tr>
<td>Length of first episode in days of drinking</td>
<td>136.40</td>
<td></td>
</tr>
<tr>
<td>stress (SS)</td>
<td>50.25</td>
<td>.074</td>
</tr>
<tr>
<td>adjusted stress (ASS)</td>
<td>858.26</td>
<td>.072</td>
</tr>
</tbody>
</table>

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There was no relationship to be found at any meaningful level of significance between the stressful life events in the time between discharge and the first episode. Stress accumulated during time abstinent did not have a relationship to either the length of sobriety after discharge or the duration of that first drinking episode.

Investigation of the time beyond the first episode reveals a number of highly significant correlations between subsequent drinking and the length of sobriety prior to the first episode. Results presented in Table 3.6 indicate an inverse relationship between length of abstinence, and subsequent number of days he engaged in drinking behavior throughout the following 30 months.

Table 3.6
Abstinence Period Following Discharge and Correlates of Subsequent Drinking

<table>
<thead>
<tr>
<th></th>
<th>( \bar{x} )</th>
<th>( r )</th>
</tr>
</thead>
<tbody>
<tr>
<td>Length of first episode</td>
<td>136.40</td>
<td>-.322</td>
</tr>
<tr>
<td>Days Drinking 1st 10 months</td>
<td>68.50</td>
<td>-.483</td>
</tr>
<tr>
<td>Days Drinking 2nd 10 months</td>
<td>74.55</td>
<td>-.375</td>
</tr>
<tr>
<td>Days Drinking 3rd 10 months</td>
<td>67.92</td>
<td>-.253</td>
</tr>
<tr>
<td>Days Drinking Total 30 months</td>
<td>210.93</td>
<td>-.424</td>
</tr>
<tr>
<td>Adjusted stress score</td>
<td>5000.00</td>
<td>+.323</td>
</tr>
</tbody>
</table>

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The single positive correlation ($r = +.323, p < .01$) with the adjusted stress score (controlling for type of stress) indicates that if the early period of sobriety is long, the stress experienced (or perceived) is severe and conversely, the shorter the initial period of sobriety the more positively stress is perceived. Although the abstinence correlations neither supported or refuted the hypothesis, they suggested the direction of stress impact discussed further in Chapter IV.

**Stress and Drinking in the 30 Months Following Treatment**

Two null hypotheses were tested in which stress and drinking in time blocks of ten-month periods were the critical variables.

$H_0_5$ There is no relationship between life stress experiences (SS 1, 2, 3) and days drinking in the 1st, 2nd, and 3rd (DD 1, 2, 3) ten-month period of follow-up.

$H_0_6$ There is no relationship between the life stress experience score adjusted for perceived seriousness (ASS 1, 2, 3) and drinking in the 1st, 2nd, and 3rd (DD 1, 2, 3) ten-month period of follow-up.

The correlations were unremarkable for the three time periods studied with the exception of SS in DD3 ($r = .242, p < .05$). The findings indicate that stress experienced in the time nearly two years after discharge will more likely correlate with drinking.
at that time than it will in the time closer to graduation.

Table 3.7

Stress and Drinking in Three 10 Month Periods Following Discharge

<table>
<thead>
<tr>
<th></th>
<th>x</th>
<th>r</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1st 10 months</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Days Drinking (DD1)</td>
<td>68.50</td>
<td></td>
</tr>
<tr>
<td>Stress (DD1)</td>
<td>112.74</td>
<td>.012</td>
</tr>
<tr>
<td>Adjusted Stress (ASS1)</td>
<td>5000.32</td>
<td>-.137</td>
</tr>
<tr>
<td><strong>2nd 10 months</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Days Drinking (DD2)</td>
<td>74.55</td>
<td></td>
</tr>
<tr>
<td>Stress (SS2)</td>
<td>80.47</td>
<td>.032</td>
</tr>
<tr>
<td>Adjusted Stress (ASS2)</td>
<td>4993.76</td>
<td>-.020</td>
</tr>
<tr>
<td><strong>3rd 10 months</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Days Drinking (DD3)</td>
<td>67.92</td>
<td></td>
</tr>
<tr>
<td>Stress (SS3)</td>
<td>85.27</td>
<td>.242</td>
</tr>
<tr>
<td>Adjusted Stress (ASS3)</td>
<td>4976.39</td>
<td>-.106</td>
</tr>
</tbody>
</table>

Total stress in the entire thirty month period following discharge was the subject of the final two null hypotheses.

\[ H_{07} \] No relationship exists between life stress experience (TSS) and days drinking (TDD) in the 30 months following treatment.

\[ H_{08} \] No relationship exists between life stress experience score adjusted for perceived seriousness (TASS) and days drinking (TDD) in the 30 months following treatment.
Table 3.8 contains critical values which demonstrate that the final two null hypotheses failed to gain support when analyzed by means of correlation.

<table>
<thead>
<tr>
<th></th>
<th>x</th>
<th>r</th>
</tr>
</thead>
<tbody>
<tr>
<td>Days Drinking (TDD)</td>
<td>210.97</td>
<td></td>
</tr>
<tr>
<td>Stress (TSS)</td>
<td>278.48</td>
<td>.144</td>
</tr>
<tr>
<td>Adjusted Stress (TASS)</td>
<td>14970.47</td>
<td>.126</td>
</tr>
</tbody>
</table>

Table 3.8

Stress and Drinking in 30 Months Following Discharge

While the major statements of the study failed to attain significance, a comparison of means of the various follow time factors in this study (Table 3, page 40, 5 page 42, 6 page 43, 7 page 45 and 8) revealed the characteristics of stress as measured by the SRRQ with treated alcoholic sample. Stress means were noticeable higher in the time immediately after discharge, both raw stress scores and adjusted stress scores. The drinking means, however, were closely grouped. The mean for days abstinent following treatment was 244 days which changes very little when controlling for the 12 men totally abstinent and the 8 men drinking

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almost daily. The means for this study can be considered reliable.

Analysis of Stress Experience Variables

A one-way analysis of variance was also employed to test $H_0^7$ and $H_0^8$ and additionally to answer the question types of stress and the relationship to drinking. The first analysis was completed using four categories of the drinking variable and both the TSS and TASS. Drinking was divided by (1) declared abstinence, no alcohol intake (a), (2) limited drinking days (LDD) up to and including one day per week, (3) moderately controlled drinking (CDD) up to and including five days per week, and (4) uncontrolled drinking days (UDD).

As seen in Table 3.9, differentiating the days drinking made no statistically meaningful difference between TSS means and null hypothesis, thus, $H_0^7$ failed to be rejected ($F = 1.359$, $p = .263$). In essence, life stress experiences as measured by SRRQ did not

<table>
<thead>
<tr>
<th>Mean Stress Scores of Mean Drinking Categories</th>
</tr>
</thead>
<tbody>
<tr>
<td>TSS Mean Score</td>
</tr>
<tr>
<td>TASS Mean Score</td>
</tr>
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differentiate drinking behavior of a veteran after treatment in January House. There is evidence, however, that a different stress experience did exist between drinking categories when the stress score used was adjusted to reflect the perceptions of the veteran about the seriousness of his life stress experiences ($F = 2.886, p = .0415$).

The strength of association was computed for the TASS and DD variables using the formula $E = \sqrt{\sum \frac{r^2}{n}}$ (Kerlinger, 1968).

The variance shared by stress and drinking is $.328$, thus, $E = .107$, which means that about $10.7\%$ of the variance between drinking categories can be accounted for by the adjusted stress score. Additional analysis to seek the source of the difference was deferred to later discussion.

The analysis of variance procedure was also used to determine if differences exist between drinkers with respect to types of stress.

<table>
<thead>
<tr>
<th></th>
<th>df=3</th>
<th>P</th>
</tr>
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<tbody>
<tr>
<td>Marriage</td>
<td>.526</td>
<td>.654</td>
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<tr>
<td>Family</td>
<td>2.28</td>
<td>.086</td>
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<tr>
<td>Employment</td>
<td>1.449</td>
<td>.235</td>
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<tr>
<td>Financial</td>
<td>1.456</td>
<td>.233</td>
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<td>Health</td>
<td>.352</td>
<td>.788</td>
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<tr>
<td>Legal</td>
<td>3.49</td>
<td>.0198</td>
</tr>
<tr>
<td>Personal</td>
<td>1.83</td>
<td>.1512</td>
</tr>
</tbody>
</table>

Table 3.10
Analysis of Variance by Stress Experience and Drinking Categories

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An investigation of the means in the various drinking categories shows them to be very inconsistent with no evidence of trends or directionality. The area of family stress, which questions events of gain and loss in family membership, in-laws, and family get-togethers, was modestly significant ($p = .068$). The mean of the category of drinkers who consume alcohol up to five days per week (CDD) was much lower than other means in the family stress area, indicating that stress in this area is experienced or interpreted differently for CDD group. The same analysis singles out stress differences in the legal area ($p = .0198$), where the mean of the CDD is higher than in other drinking categories. The strength of association for the marriage group ($E^2 = .328$) does indicate that stress accounts for limited variance between means. All other groupings of stress experience analyzed for variance yielded limited differences in means and on the whole the categorization technique added modest results to the study.
CHAPTER IV
DISCUSSION

Summary

The literature supports in theory and in research that psycho-socio-stress has a significant relationship to physical and mental health. The presence of potentially stressful life experiences is considered a universal phenomenon which increases in importance to the health care field as stress related chronic diseases climb higher on the mortality lists (Dodge, 1970).

Behavioral scientists of many disciplines are collectively investigating the components of man's stress experience in an attempt to stem the fallout of human resources into pathways of illness and disability, which Toffler (1970) has so vividly described as "future Shock."

The present study was undertaken to explore the relationship of stress to drinking in a specific group of chronic afflicted, the alcoholic. The instrument used in the study was the Holmes & Rahe Stress Readjustment Rating Scale (SRRQ) (1967). The list of stressful life events is comprised of 43 common life events, all of which
create change in the state of homostatis and require coping of some sort. The standard ratings were used intact and also adapted to reflect limited levels of perception of the seriousness and/or direction of the stress experienced.

The subjects were 76 men treated in a Veteran's Administration (VA) Hospital alcohol rehabilitation unit, who had completed an eight-week program in early 1973. The data were gathered by means of a telephone interview using a structured interview schedule.

A total of eight null hypotheses seeking no relationship between stress and resumed drinking following treatment were tested, using the Pearson product moment correlation and analysis of variance technique. Appropriate t-tests, F-tests, and estimates of relationships were used to determine significance of the relationship.

Discussion and Implications

Although stressful life events as measured by the SRRQ and experienced in the period of sobriety immediately following treatment were not related to the length of abstinence or the length of the first drinking episode, there were a number of significant findings related to the abstinence period itself. The length of the period of sobriety was inversely related to the length of the first episode of drinking (p \textless .01), which means the man who drinks immediately upon
discharge can be expected to drink for a number of weeks before he will again decide to quit drinking. The finding follows an AA theme, one drink is one too many. Jellenik (1960), the pioneer in alcoholism disease theory, refers to the loss of control over drinking in chronic phase of the disease. Similar negative correlations link the length of initial abstinence with the number of days on which alcohol was consumed in the ten 30-day periods of follow-up after discharge \((p < .01)\). The numbers may be considered obvious, the longer the abstinence time, the lower all drinking tallies will be, but it has importance to the veteran since the return to drinking for most of the VA clients will result in progressive physical deterioration as well. The goal for many alcoholics is to delay the inevitable.

The single point in time when the stress score correlated with drinking \((p < .05)\) was in the third 10-month period. The developers of the SRRQ who report its value in long term study (Holmes, et al., 1974) find that the illness frequently shows up as late as two to three years following grouped or intense stress experiences. Analysis of stress means indicates that heavier stress occurs in the first 10-month period, and could be anticipated as the veteran hopefully returns to his environment with different behaviors and attitudes. The problems he left behind also await him immediately. The importance of this finding to the treatment community is this: A
man must be prepared not only for high impact stress upon return
and be aware that a delay factor exists as accumulations of life stress
experience eventually will take their toll.

The adjusted stress score was a means by which a man's
perception of a stress experience, positive, negative, or neutral
could be recorded. This measure was helpful in locating the direc-
tionality of the stress experience where significance was attained.
The first evidence of ASS importance was noted in the correlation of
adjusted stress scores with the length of sobriety following discharge
(p < .01). The relationship is positive, which means that higher
scores (lots of good experiences that also rate as stressful) are
related to longer periods of sobriety. The analysis of variance of
the means of stress along the dimensions of drinking were significant
at the p < .04 level, however, the adjusted scale was not validated, and
this finding must be interpreted carefully. Extended analysis to
locate the source of the variance was deferred to a time when a more
appropriately designed measure would clarify the alcoholic perception
of various stress experience. This choice is in agreement with
Hore (1971) who found the Brown and Birley (1968) material appropriate
in such a study.

When drinkers were grouped by number of days drinking and
stress variables were grouped into constellations of homogeneous
experience types, the data were confusing and of limited value. Two
of the seven life stress areas found to approach significant variances
(marriage, p=.086 and legal, p=.0198), the strength of association was
not supportive of meaningful variance between means. The expected
finding of relationships between drinking and grouped variables similar
to Emricks (1973) follow-up variables did not occur. A speculation
is that the overlapping of SRRQ items may have confounded categories
of experience, and leads this writer to believe that stress variables
may be better suited to an alternate design such as Hore's (1971)
model in which predictable vs unpredictable events are studied or
models in which the sources of stress, such as self or others, are
the key variables.

The issues in methodology raised in Chapter II are worthy of
comment. Precaution was taken in the structure of the personal
telephone interview and clustering of items about similar types of
experience. The 30-month time span fostered some findings regard-
ing delayed stress that may have been lost to short term follow-up
(Hore, 1971). The OBS diagnosis, which supposes memory problems,
was found in only three of the sample. However, others interviewed
for the study may have developed serious disorders involving memory
and recall since treatment, therefore, control over memory loss as
an interviewing variable was limited.
The simplicity of the measure of drinking along the single dimension of frequency resulted in an item that appeared to have very low threat to the client. The sequence of inquiry left the drinking question until last and the earlier reporting of stress experience seemed to trigger recall for the drinking decision made at the time of stressful experiences. The predominant limitations of the study are: (1) findings have limited value for generalization beyond the veteran treated in a VA hospital and (2) no validation of self-report was attempted.

One of the strengths of this study was the telephone interview technique. This procedure is a viable one for follow-up of veterans treated in VA installations. The Battle Creek VA Hospital is very remote from major metropolitan and upper state rural areas, and for a majority of patients this has created handicaps in continued contact. Time, distance, and money for return appointments make personal interviews nearly impossible and follow-up on the basis of the veterans availability may selectively skew the sample attained. The spontaneity and matter of factness of a telephone call seemed to lend authenticity to the interchange between interviewer and veteran. The telephone contact also encouraged a casual conversation as opposed to the uneasiness of many men when returning to the psychiatric hospital, where negative overtones may be felt by the veteran.
Several other advantages exist over the mailed questionnaires. The obvious one is that of location, for even using addresses from files and program sources, sizeable numbers do not get delivered. In this study a conservative one-third of the mailings were inaccurate, even with three preliminary confirmations. It is also harder to ignore a telephone call than a letter. Thus, it is more "deliverable."

Printed material can be fearful for many persons having limited reading skills and the telephone conversation allowed for restatement and help in understanding questions. The surprise in the entire procedure of locating and interviewing was the large number of men who expressed thanks for being contacted and discussed possible return or referral of a friend.

In addition to investigating the relationship between stress and drinking after treatment, the study was also used to gather demographic data on January House graduates for descriptive as well as program purposes. The means for age, employment, and marital status and AA attendance are comparable to those of Tomsovic (1971) in a Wyoming VA hospital study, both are in agreement with the VA census report description of the VA alcoholic population (Note 2). The impact of demographic data on January House program will be determined by the effect of feedback to staff on the men they serve, to clarify and revise their perceptions of the needs and problems of the alcoholic veteran.
The program and research implications of the study findings are commensurate with the degree to which the original questions posed in Chapter I.

1. Is there a relationship between stress and the length of abstinence after discharge?

2. Is there a relationship between stress and the severity of first episode (severity = consecutive days of drinking before onset of self-imposed abstinence)?

3. Is there a relationship between stress and drinking throughout a 30 month time following discharge?

4. Is there a relationship between type of stress and drinking (type = desirable, undesirable, neutral)?

5. Is there a relationship between area of stress and drinking (area = family, marriage, interpersonal, legal)?

Failure to find relationships in questions one and two refute a common mythology that resumption of drinking has a specified stressful incident as its cause. Program education for veterans regarding post-treatment events should help him dispel the idea that he must find a "cause" following a slip into drinking patterns and emphasize that each day abstinent is more likely to contribute to better health and greater control over drinking in the future. The finding that stress events summarize well only in periods of time over one or more years, suggests the important aspect of studying stress in the alcoholic individual may not be the amounts experienced but the way
in which he perceives that stress, the mediating behaviors referred to by Lazarus (1966). This study suggests they lie within the management of negative events. Further research would require expanded descriptors of stress and creating variables of stress pertinent to the alcoholic experience.

The findings in the final two questions are limited to such an extent that direct interpretation is inadvisable. The failure to reject the null hypothesis here does not support the idea that drinking or not drinking will not postpone the reality of life stress experiences occurring. It is the ability to cope with stress which determines the eventual health of man.
REFERENCES


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Meyer, A. The life chart and the obligation of specifying positive data in psychopathological diagnosis. In E. E. Winters


Tamerin, J. S., Tolor, A., & Eyes, A. Situational stress, affect arousal, desire to drink and drinking in alcoholics. Submitted for publication.


REFERENCE NOTES


Dear

The January House program of the Veterans Administration Hospital, Battle Creek, Michigan is conducting a follow-up of veterans who have completed the program. This project is one way we can learn how we are doing in helping the veteran.

We are especially interested in your thoughts about the program as you look back after 2-1/2 years. You can help us by filling out the enclosed card and mailing it back in the stamped envelope provided.

We'll be in touch with you sometime in the next six weeks. You'll have a chance to give us your input that will help make the January House program better than ever.

We will appreciate your cooperation. As you know, all information you share is STRICTLY CONFIDENTIAL BY FEDERAL LAW.

Return the enclosed card with correct address and phone number to let us know you will participate.

Sincerely,

Lynn Becker
Art Anderson
Please Complete All Items and Return Promptly

___ Yes, call me, I will participate ___ No

Current Address: ______________________________________________________

Phone: ____________________ or number where I can be reached.
Best days of the week to call me are: M_T_W_Th_F_S_S_
Best time of the day to call me is: _____________________

__________________________ Signature  Please mail in enclosed envelope.
__________________________ Witness  Thank you.
December 1, 1975

Dear _______________________

We have been attempting to locate ______________________ for follow-up purposes and have had no success with the address in our files. He also provided your name as a reference.

If you have a recent address or phone number, please write and inform us or forward the enclosed materials directly to ______________________.

Thank you,

Lynn Becker
Dear January House Graduate:

A few weeks ago you received the enclosed materials telling you about a follow-up study we're doing at January House. We are very anxious to have your participation and are asking again that you return the card to tell us when we may call you.

If you have no telephone but do want to be included you may call us collect from a friend's phone or a pay phone, and do this:

Ask the operator to place a collect call to (616) 965-3281 at the VA Hospital and ask for: Lynn Becker or Art Anderson

If we're not in please leave your name and the phone number and time we can call you back.

Best time to call us is:

- Monday 1:00 - 8:00
- Tuesday 1:00 - 8:00
- Wednesday 9:00 - 4:00
- Thursday 9:00 - 8:00

We're planning to hear from you!

Sincerely

Lynn Becker
Art Anderson
Hello:

This is ______________, V.A. Hospital, Battle Creek. I'm calling about the letter we sent telling you of the follow-up study of January House Graduates. Thank you for returning the card.---(Pause)---I'd like to talk with you now for about _______ minutes. ---(Pause)---before we begin, there are some things I want to be sure to tell you--some things it's important for you to know.

First--All that we talk about is strictly confidential--by law--and won't be known by anyone but this research team, January House staff will not see your information.

Second--Being part of this study will not change your situation with the veteran's administration in regard to services or benefits.

Third--(Because) the purpose of this study is to learn ways to help veterans with drug and alcohol problems, it is especially important that you are truthful and accurate when you answer the questions. We need to know how it really is with you after leaving January House. The good and the bad.

The information will be grouped into several different subject areas--for instance, Marriage, family, employment, and so on. I will ask you to remember back over the last 2-1/2 years. Right now go back in your memory to __________, 1973. You were just discharged from the program.

O.K. Can you place yourself in that time slot?

SS# ___________ Race _________ Age _______ Primary Diagnosis _____
Secondary Diagnosis _______

DEMOGRAPHIC: SITUATION AT DISCHARGE

1. What was your marital situation at discharge? M S Div. Sep. Wid. LW
2. What was your employment situation at discharge?
   ___Employed (full)   ___Unemployed
   ___Employed (part)  ___Retired
   ___Compensation    Source____________________

3. In the year before your admission to January House, how many minor violations did you have? (e.g., traffic tickets, jay walking, disturbing the peace, etc.) If yes, specify number_____

4. Before your admission in 1973, did you ever undergo any treatment for alcoholism other than January House? (e.g., A.A. meetings, detox, individual or group therapy sessions.)
   ___No   ___Yes  Specify type __________________

5. Before your admission in 1973, were you ever admitted to January House?
   ___No   ___Yes  If yes, specify number_____

6. Since discharge, have you made any OPT visits to January House?
   ___No   ___Yes  How Many_____

7. Since discharge, have you had any re-admissions to January House?
   ___No   ___Yes  If yes, specify number_____

8. Since discharge, have you had any other alcoholism treatments - In Patient Therapy _____, Out Patient Therapy_____, Detox only _____, AA_______.

Do you currently have a VA or court appointed guardian?
Guardian's
   Name:__________________________
   Address:________________________
   Phone:__________________________

PART I. LET'S BEGIN WITH THE AREA OF MARRIAGE & FAMILY.

10. A marriage  ____No  ____Yes (50)
11. A divorce  ____No  ____Yes (73)
12. Marital separation from mate  ____No  ____Yes (45)
13. Marital reconciliation with mate  ____No  ____Yes (45)
14. Major change in the number of arguments with spouse (e.g., either a lot more or a lot less than usual regarding childrearing, personal habits, social behaviors, etc.)  ____No  ____Yes (35)
15. Pregnancy  ____No  ____Yes (40)
16. Sexual difficulties: (e.g., sex drive, satisfaction with performance, partner)  ____No  ____Yes (39)
17. Wife began or ended work outside the home  ____No  ____Yes (26)

WITH REGARD TO YOUR IMMEDIATE FAMILY, HAVE YOU:
18. Gained a new family member (e.g., through birth, adoption, oldster moving in, etc.)  ____No  ____Yes (39)
19. Had sons or daughters leaving home (e.g., marriage, attending college, etc.)  ____No  ____Yes (29)
20. Made major change in number of family get-togethers (e.g., a lot more or a lot fewer than usual)  ____No  ____Yes (15)
21. Had any troubles with in-laws  ____No  ____Yes (29)

LET'S GO ON TO TALK ABOUT YOUR WORK SITUATION
22. What is your employment situation now?
   ____Employed (full)  ____Unemployed
   ____Employed (part)  ____Retired
   ____Compensated  Source ______________________
23. Were you unemployed at all during the 2-1/2 years since leaving?  ____No  ____Yes If yes, specify weeks unemployed__________
IF WORKING, OR WHEN WORKING, DID YOU:

____24. Change to a different line of work ___No ___Yes (36)

____25. Make a major change in responsibilities at work (e.g., promotion, demotion, lateral transfer) ___No ___Yes (29)

____26. Make major change in working hours or conditions ___No ___Yes (20)

____27. Get fired from work ___No ___Yes (47)

____28. Have troubles with the boss ___No ___Yes (23)

____29. Retire from work ___No ___Yes (45)

NOW LET'S TALK ABOUT THE FINANCIAL HAPPENINGS OVER THE LAST 2-1/2 YEARS, HAVE YOU:

____30. Had a major change in financial state (e.g., a lot worse off or a lot better off than usual) ___No ___Yes (38)

____31. Taken on a mortgage greater than $10,000 (e.g., purchasing a home, business, etc.) ___No ___Yes (31)

____32. Taken on a mortgage or loan less than $10,000 (e.g., purchasing a car, TV, freezer, etc.) ___No ___Yes (17)

____33. Made a major business adjustment (e.g., merger, reorganization, bankruptcy, etc.) ___No ___Yes (39)

____34. Had a mortgage or loan foreclosed ___No ___Yes (30)

ANOTHER AREA OF YOUR LIFE WE'RE INTERESTED IN IS THAT OF HEALTH: YOURS AND THOSE YOU CARE ABOUT--HAS THERE BEEN:

____35. Any major personal injury or illness ___No ___Yes (53)

____36. Any major change in the health or behavior of a family member ___No ___Yes (44)

____37. Death of a spouse ___No ___Yes (100)

____38. Death of a close family member ___No ___Yes (63)
39. Death of a close friend   No   Yes (37)

HOW ARE YOU WITH THE LAW, HAVE YOU:

40. Been detained in jail   No   Yes (63)

41. Had any minor violations of the law (e.g., traffic tickets, DUIL, jay walking, disturbing the peace, etc.)   No   Yes (11)

WE'VE BEEN TALKING ABOUT A LOT OF THINGS OUTSIDE YOU THAT AFFECT YOUR LIFE. THERE ARE ALSO LOTS OF VERY PERSONAL HAPPENINGS, NOT NECESSARILY BAD THINGS THAT CHANGE LIFE FOR YOU TOO. HAVE YOU:

42. Made a major change in sleeping habits (a lot more or a lot less sleep, or change in part of day when asleep)   No   Yes (16)

43. Made a major change in eating habits (a lot more or a lot less food intake, or very different meal hours or surroundings)   No   Yes (15)

44. Revised personal habits (dress, manners, associations, etc.)   No   Yes (24)

45. Begun or ended school   No   Yes (26)

46. Changed to a different school   No   Yes (20)

47. Had an outstanding personal achievement   No   Yes (28)

48. Made a change in living conditions (build, remodel, or vast neighborhood change)   No   Yes (25)

49. Made a change in residence   No   Yes (20)

50. Made a major change in church activities (e.g., a lot more or a lot less than usual)   No   Yes (19)

51. Made a major change in usual type and/or amount of recreation   No   Yes (19)
___52. Made a major change in social activities (e.g., clubs, dancing, movies, visiting, etc.) ___No ___Yes (18)

___53. Had any paid vacations ___No ___Yes (13)

___54. Celebrated Christmas ___No ___Yes (12)

BRIEFLY, LET'S GO BACK OVER THE EVENTS YOU'VE JUST REPORTED. HOW DID YOU FEEL ABOUT THEM? WAS THE EVENT DESIRABLE, UNDESIRABLE, WAS IT NEITHER DESIRABLE OR UNDESIRABLE, OR NEUTRAL? (Indicate U, D, or O)

PART II

Up to this point we have not asked you about your drinking. While we're interested in how you have handled periods of abstinence, we are just as interested in those times you chose to drink.

Again, we'll ask you to remember back over the past 2-1/2 years: When was the first time you decided to take one or more drinks?

How long did you continue to drink before stopping?

When was the next time you drank?

How long did you continue to drink?

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<tr>
<th>DRANK</th>
<th>ABSTINENT</th>
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