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# Career Development Anxiety Trends in Chronic Alcoholics

James Dowding
*Loyola University Chicago*

# CAREER DEVELOPMENT ANXIETY TRENDS IN CHRONIC ALCOHOLICS

by

James Dowding

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# VITA

The author, James Dowding, Jr. is the son of James Dowding and Carolyn (Maski) Dowding. He was born November 14, 1948, in Chicago, Illinois.

His secondary education was obtained at York Community High School, Elmhurst, Illinois where he graduated in 1966. In December, 1970, he graduated from Elmhurst College with a major in Chemistry and worked in industry for four years before entering graduate school. He graduated from Illinois Institute of Technology in December, 1975, with a Master of Science in Psychology and entered the doctoral program in clinical psychology at Loyola University in September, 1976.

At Loyola, his first year of study was under a National Institute of Mental Health Fellowship, and the second year he was granted an assistantship in physiological psychology. In October, 1979, he completed an internship in clinical psychology at Hines Veterans Administration Hospital and has subsequently worked for the State of Illinois at Elgin Mental Health Center as a staff psychologist.

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# CHAPTER I

## INTRODUCTION

The etiological basis of chronic alcoholism has been conveniently parcelled into three contributory spheres: the biological, psychological, and sociocultural factors of influence. Cohen (1975) has noted that chronic alcoholism is most likely an outcome arising from a complex and poorly understood interaction of these factors. Considered separately, the biological causes relate to postulated genetic substrates such as an inherited susceptibility to alcohol, impaired metabolic functioning, or underlying abnormal fluctuations in neurophysiological response characteristics. Individual psychological factors relating to the etiology of alcoholism are many and varied. Among them are: (1) motivational features such as a derived need for tension release; (2) characterological and personality features (alcoholic typologies); (3) conflict-based intrapsychic or psychodynamic factors; and (4) the effects of learning or conditioning. Sociocultural factors appear to interface with the behavioral explanations, especially as they relate to environmental and culture-specific conditions such as occupation, socio-economic class, and educational level which can act as significant contributors to a lifestyle centered around alcohol abuse (Gnepp, 1976).

It is difficult to begin to investigate any single facet of the alcoholic lifestyle without naturally coming upon the interaction and overlap found in the above mentioned contributory spheres. The major

variable given to study here is the stress and anxiety associated with career development conflict in chronic alcoholics. It is evident that specification of this variety of anxiety in the alcoholic condition will necessitate the use of intervening variables spanning the biological, psychological, and sociocultural inputs to the progression of the chronic state of alcohol abuse.

An operational definition of the phrase "chronic alcohol abuse" has been developed by Clark (1966) and was utilized for this study. The chronic state of abuse refers to observable signs on four indices: (1) excessive intake; (2) emotional-psychological disturbances with regard to personality functioning; (3) disruption in social-interpersonal activities including economic functioning; and (4) addictive physical dependence features. Further, for this investigation, the above factors relate to a rather specialized subgroup of alcoholic males in a 'skid row' environment whose conditions have deteriorated to a point where they are undomiciled and dependent on residential, state-aided, social service and intermediate care treatment centers. Thus, this population represents in all probability the extreme detrimental effects of chronic abuse on the four above defined indices.

Alcoholism represents a substantial financial loss in terms of worker utilization and productivity that amounts to over a billion dollars yearly (U.S. DHEW, 1974), and there is evidence that these problems are increasing substantially (Davison & Neale, 1978; NIAAA, 1978). A major source of this dollar amount funds unemployment benefits and public aid grants paid to unemployed alcoholics in residential treatment.

Therefore, a significant treatment goal, as part of the comprehensive rehabilitation efforts, should be that of returning these individuals to the work force. Unfortunately, even though career development opportunities (e.g., school, work-training programs, etc.) are now being established for these specific populations (U.S. Department of Labor, 1977), very few eligible chronic "skid row" alcoholics are able to take full advantage of these opportunities. Though not well documented, it is well known to the agencies administering these programs that of the few men who are successfully involved in a career development opportunity (for example, the job training division of the Department of Vocational Rehabilitation, State of Illinois) approximately only one in thirty completes the program and even fewer start a job. What is extensively documented is the fact that stress and anxiety play a crucial role in precipitating relapse - the event which often signals termination of the individual's involvement in some type of career or work-oriented effort (Baekeland, 1973; Diffendale, 1975; Finaly, 1972; O'Leary, Rohsenow, Shaw & Donovan, 1971; Rohan, 1972).

The focus on employability as a major component in the successful treatment of any drug addiction has been emphasized (Ward, 1973). However, the transition from a residential treatment program to a career development opportunity is extremely tenuous and often marked by unpredictable stress. Moreover, the residential chronic alcoholic who desires to enter a job setting following treatment and at the same time wishes to avoid the multiple sources of anxiety associated with such an intent, is caught in what could be seen as a classic approach-avoidance

conflict. Such a conflict exists when a person is motivated to both approach and retreat from steps leading toward full employment (Miller, 1959; Mowrer, 1947).

Avoidance of career development and the presence of accompanying anxiety states in residential alcoholics can be conceptualized under a variety of theoretical models to be reviewed in some depth in subsequent chapters. Clearly, a comprehensive model is required to integrate the various biological, psychological, and environmental factors impacting on the chronic alcoholic as he attempts to prepare for productive employment. For instance, the recovering alcoholic usually at some level wants to begin a career; however, he typically avoids any permanent steps toward career development (Landy & Trumbo, 1976; Miner & Brewer, 1976). It is not understood how perceived anxiety (cognitive self-perceptions of stress) and experienced anxiety (physiologically-linked awareness of stress) affect progress toward re-employment. When a step is initiated by the alcoholic, subsequent goal planning and further steps seem to rapidly heighten the client's anxiety state and often lead to a rapid loss of any preliminary vocational gains.

The purpose of this study was to map temporal changes in career-development anxiety and relate these shifts in perceived stress to concomitant demands associated with steps necessary for re-employment. That is, trends in anxiety states and avoidance reactions to career development situations have been examined in a sequential fashion in an effort to determine what stages of the work or career rehabilitation process are most taxing on the alcoholics' adaptive capacity. As the

following literature review indicates, anxiety as a response to the alcoholic recovery process has been studied from many perspectives including the cognitive, physiological, and social-environmental paradigms. Most of these investigations, however, have been descriptive in nature or have centered on a test, re-test methodology. Very few studies have attempted to look at anxiety from a longitudinal standpoint or have attempted to relate fluctuations in anxiety over time to real-world stimulus demands correlated with the recovery process, especially as it relates to re-employment or career development coping behaviors. This investigation was directed at partially filling this gap in the current understanding of anxiety patterns and avoidance behaviors in the alcohol rehabilitation process.

# CHAPTER II

# REVIEW OF RELATED LITERATURE

## Anxiety as a Personality Characteristic in Alcoholism

Before constructing a framework from which to investigate career development anxiety, it will be beneficial to look at some of the more general characteristics of anxiety in the chronic alcoholic condition. The following is a review of literature concerned with the description of anxiety as a personality component associated with alcohol abuse.

The identification and description of alcohol-related anxiety has received must attention in the literature. Investigating alcoholic personality types Skinner, Jackson, and Hoffman (1974) employed a factor-analytic strategy. Eight bipolar dimensions that define a single cluster of individuals at each pole of each dimension were extracted. The five least ambiguous bipolar dimensions were classified as follows: (1) acute anxiety vs. denial and diminished affect; (2) antisocial attitudes vs. hypochondriacal preoccupation; (3) a hostile-hallucinatory syndrome vs. neurotic depression; (4) neurotic disorganization vs. a hostile paranoid condition; and (5) emotional instability vs. interpersonal conflict and depression. Of interest for this study was the identification of a pre-existing anxiety state that was a factor cutting across each of these five dimensions. Further, these authors noted a significant correlation between their own findings and previously well-established anxiety components in alcoholics based on MMPI profiles. Whitelock (1971) and his

co-workers similarly argued that both anxiety and depression are persistent features in the chronic alcoholic's personality profile. In fact, they note that alcoholics with higher abuse scores (high drinking frequency) tended to report the highest levels of anxiety, while those with lower abuse scores were associated with a personality dynamic less related to manifest anxiety and more highly correlated with poor impulse control and sociopathic features.

Extensive work has been done with the 16PF studying personality characteristics of the alcoholic and findings regarding the anxiety component have been frequent. Nerviano and Gross (1973) employing multivariate techniques identified and replicated two significantly discriminable types of chronic alcoholic males with 16PF profile analysis. The first type was best described in terms of high anxiety and introversion and the second was characterized by dependence and conformity. This would suggest that there is at least one alcoholic personality subtype in which persistent anxiety does not play a role. In a related study, however, Nerviano (1974) replicated source trait factor structures of anxiety on the 16PF data of 400 inpatient male alcoholics. He found that the trait Expediency (vs. Conscientiousness) loaded on the anxiety factor. Thus, it was suggested that some of the behaviors exhibited and reported by alcoholic males that appear indicative of an asocial personality type might be better understood as signaling severe anxiety which exists as a primary symptom in a neurotic character makeup. This might also suggest an alternative interpretation of Whitelock's (1971) work cited above since anxiety may exist as a second-order factor

trait for psychopathy and associated disturbances of impulse control. Here again, we see evidence for the impact of anxiety as it cuts across various personality measures and typologies in a way that strongly suggests its pervasive nature in chronic alcohol abuse.

The 16PF was again used in a study by Ciotola and Peterson (1976) comparing alcoholics, polydrug, and heroin users and gives additional insight into the major role of anxiety in the alcoholic condition. Of special interest in this study was the finding that alcoholics and polydrug abusers were more withdrawn and more easily threatened than heroin addicts. Also, the alcoholic group was significantly more anxious than the heroin abusers with the polydrug users showing a trend in this direction.

Although these cited studies strongly argue for the presence of accompanying anxiety in the alcoholic disorder, there is some evidence that this anxiety is not conspicuously different or characteristically unique when compared to other forms of self-perceived anxiety. For example, Rosen (1966) used a Q-sort technique of 25 items from each of four major categories of personality traits, one of which addressed the issue of anxiety, and found that the self-perceptions of alcoholics regarding anxiety did not differ significantly from non-alcoholic groups. Because similar findings held for other personality traits, he suggested that a modal alcoholic personality which differentiates that individual from other kinds of socially maladaptive or psychiatrically identified individuals does not appear to exist. Thus, there is evidence that the alcoholic, insofar as he assigns meaning to anxiety experiences as well as

other personality attributes, does so in a way not unlike other emotionally troubled, anxious, or tension-ridden individuals. Within given alcoholic typologies, then, the manifestation of anxiety may not differ markedly from the same symptom expression in other personality types.

Another group of investigations attempting to delineate common personality features in the chronic alcoholic have added support to the key role of anxiety in the emergence of this condition over time. Rosenberg (1969) studied young alcoholics under the age of 30 and found an underlying personality disorder characterized by elevated levels of neuroticism and anxiety as measured by the Eysenck Personality Inventory and Cattell's Anxiety Scale. It was suggested that habitual use of alcohol was related to a need to relieve persistent feelings of loneliness, inferiority, frustration, and anxiety. Horn and Wanberg (1970) factor analyzed the responses of 2032 alcoholics to an extensive social-history questionnaire which disclosed seven factors relating to social and personal adjustment during childhood and eight factors relating to current adjustment. Of interest to this study was the uncovering of chronic delinquency patterns with long-standing anxiety symptoms and, additionally, parental loss and illness patterns in the childhood of the alcoholic. These two studies seem to argue for the presence of persistent anxiety in the life of the pre-alcoholic that continues to exist with later abuse patterns.

Alcoholic Anxiety - Psychodynamic Interpretations

The notion of viewing the alcoholic personality from a psychodynamic framework has also been investigated with attention given to anxiety expression. McCord and McCord (1960) first applied an unconscious drive hypothesis which implied the expression of preconscious wishes or tendencies linked to a state of oral fixation where frustration of these wishes is manifested by anxiety and self-destructive impulses in the form of drinking. A second interpretation of alcohol abuse by these same authors saw this as a substitute for a need for power and autonomy. Third, chronic alcohol abuse was conceptualized as a defense against repressed hostility arising out of unmet or frustrated dependency needs. Similarly, Ferneau (1968) argues that anxiety is a function of disturbed ego functioning, especially as it relates to poor self-concept and ambivalence toward seeking help.

Going somewhat further, DeVito (1970) and his colleagues proposed a psychodynamic model for alcoholism with a study of 300 male alcoholics. They postulated that excessive use, particularly in the early stages, serves as an alternate chemical defense against ego-threatening situations. Specifically, alcohol intoxication serves as a defense against the following: (1) potent, threatening affective states such as overwhelming rage, fear, and anxiety; (2) severe despondency in those alcoholics who are vulnerable to depressive experiences; (3) profound anxiety due to weak ego boundaries; and (4) unmodulated pathological symptom expression. In contrast to the conclusions of McCord and McCord (1960) DeVito surmised that the conflicts are not solely oral in origin

but represent a multiplicity of phases of ego-emergence. One can see in the listed defense systems rationale much emphasis on the anxiety component that in many cases may be the only signal available to the alcoholic regarding the escalating unconscious conflicts that are ego-threatening. In a somewhat related study using the TAT and Rorschach as projective measures, the emotional state of the chronic alcoholic was investigated after one limited drinking session and compared to the same subject's sober state (VanderSpuy, 1972). Analysis of the results indicated a decreased level of neuroticism in certain aspects of social interaction from the sober to intoxicated state and the following significant changes on various dependent variables: (1) an increase in Rorschach inanimate movement responses, indicating increased tension and conflict; (2) a decrease in the quality of introspection and in the quality of inner adjustment based on Rorschach profiles; and (3) a decreased number of subjects classified as having intermediate total adjustment. TAT results showed a significant change towards more psychopathology after alcohol intake. It was concluded that after one limited drinking session, the alcoholic experiences an increase in inner tension and anxiety. Compensatory mechanisms are then set in motion by the person to counteract these perceived affective disruptions.

These psychodynamic, interpretive studies and those previous concerned with characterizing alcoholic personality typologies present convincing evidence as to the key role of anxiety in the overall affective functioning of the chronic alcoholic. They establish anxiety as a persistent and nearly universal characteristic of the alcoholic experience.

Physiological Correlates of Anxiety in Alcoholism

Clinically recognizable anxiety has two forms: The first known in terms of acute anxiety states, free-floating anxiety, and panic states; the second, chronic states such as anxiety neurosis and neurasthenia (Fenichel, 1945). Anxiety as a symptom in chronic alcoholism may appear in either form as it applies to emotional and physiological arousal across varying stimulus conditions. The physiological components of anxiety in the general population have been summarized by Wheeler, White, and Reed (1950) and include palpitations, tremulousness, diaphoresis, hyperventilation with associated parasthesias, diarrhea, urinary frequency, faintness and dizziness, and a general sympathetic reaction. The following review examines some of the more recent research that relates manifestation of these physiological reactions to the chronic alcoholic condition.

First, the motive to drink in order to remove or relieve disturbing affective states (e.g., anxiety) has been investigated in terms of the experience of a somatic craving for alcohol. In a study by Litman (1974) in which an intensive case-study design was implemented, symptom severity ratings correlated with somatic disturbances and situational-environmental factors. It is of interest that there was a sex difference in self-perception of the symptomatic state in that craving was experienced by females as a psychological stress and in men as more of a somatic disturbance with felt physical signs. More direct physiological measures of anxiety states in alcoholics has revealed frequent cardio-respiratory, gastrointestinal, and generalized heightened autonomic

arousal states that are often related to chronic fear or acute panic reactions (Woodruff, Guze, & Clayton; 1972). In fact, it was noted in this study that many presenting physical complaints upon first admission prove out later to be part of an overall alcoholic personality profile with secondary affective disruptions.

Bodily states that relate to elevated anxiety reactions in alcoholics have been identified and are rather diverse with much intersubject variation. The most specific symptoms prevalent at the time of withdrawal, but often persisting beyond, include whole body distress, hand tremors, nausea (including a variety of gastro-intestinal disturbances), excessive fatigue, throat and mouth disturbances, visual abnormalities, and changes in respiration and heart rate (Hershon, 1977). It is interesting that in this same study, among those returning to drink, 85 percent (n=100) gave anxiety as the main reason; 90 percent acknowledged an uneasiness related to craving; and 69 percent singled out bodily shakes as a contributory reason. In addition, the patients reported clear relief from many of the symptoms listed following the resumption of alcohol intake. A principle component analysis produced two clusters of symptoms, an affective disturbance syndrome and a physical disturbance syndrome. Each cluster correlated significantly with the quantity of alcohol taken in the last month and with the number of days drinking. Further, both the physical and the affective clusters correlated significantly with the neuroticism score of the Eysenck Personality Inventory. A self-administered medical questionnaire (Hagnell & Tunving, 1972) designed to tap specific physiological symptoms

has also demonstrated somatic disturbances in the chronic alcoholic that are related to anxiety. In comparing self-reports of normal and alcoholic males, the differences in gastrointestinal and eye and ear symptoms were significant at the .01 level and those in respiratory, cardiac, endocrine, urogenital symptoms, tiredness, asthema, autonomic disturbances, depression, anxiety, aggressiveness, and decreased concentration ability were all significant at the .001 level with alcoholics showing significantly greater levels of symptom expression than normals.

Evidence also exists for the role of alcohol-related sleep disturbances which contribute to anxiety states both during and following drinking episodes. Johnson, Burdick, and Smith (1970) obtained all-night sleep records on 14 chronic alcoholic patients during two days of alcohol intake and ten days without alcohol. Clinical and psychological measures of anxiety, mood, and cognitive performance were obtained at the beginning and end of the withdrawal period. Long latencies for sleep onset, frequent awakenings, frequent movements, and numerous changes from one sleep stage to another characterized the sleep of subjects. While some improvement was seen during withdrawal, no dramatic change occurred in general goodness of sleep. Further, Baekeland, Lundwall, and Shanahan (1974) looked at the clinical correlates of reported sleep disturbances in alcoholics. When patients (294 alcoholic outpatients) were classified according to drinking patterns, abstinence at admission, and a history of black-outs and delirium tremors, the strength of the relationship to clinical variables differed. For example, patients not abstinent at admission were younger, had higher levels of habitual alcohol intake, were

more anxious and depressed, slept worse, and had been hospitalized more than patients who were abstinent at admission. A particular point was made to correlate heightened, chronic anxiety as manifested by a sleep disturbance to sustained alcohol intake.

Improvement in anxiety as measured by physiological, cognitive and perceptual-motor variables has been demonstrated in recovering alcoholics by Smith and Layden (1972). In a pre-test, post-test design they found significant improvements after one week and six weeks of abstinence in simple and cognitive reaction time, color vision, Shipley-Hartford abstraction scores, conceptual and intelligence quotients, and eight of fifteen items of a mood adjective checklist. Complaints of neurotic symptoms decreased and subjects had a lower mean heart rate. Simultaneous significant improvements were seen in a number of blood chemistry components, however, it was difficult to correlate any of these with anxiety levels. Despite this, it was observed that subjects with high serum glutamic oxaloacetic transaminase activity were also those with high blood alcohol levels at admission and who exhibited the most symptoms associated with anxiety and depression.

Some direct measures of physiological factors have been used as evidence of elevated anxiety levels in chronic alcoholics. For example, light fusion thresholds were found to be significantly reduced in alcoholics and also correlated to anxiety scores as measured by the Taylor Manifest Anxiety Scale (Perris & d'Elia, 1971). Hobson (1971) measured anxiety levels by an eye-blink conditioning paradigm and found that alcoholics gave more conditioned responses than normals to the stimulus.

Results supported the hypothesis that recovering alcoholics have higher levels of autonomic response activity than normal non-alcoholics.

Another possibly significant physiological component in the overall tension level of the chronic alcoholic relates to blood-sugar depletion during the drinking phase. Zivin (1970) has stressed the psycho-neurological impact of hypoglycemia in the chronic alcoholic condition. It is known that altered physical and emotional states often accompany periods of hypoglycemia. Common symptoms include light headedness, anxiety, tremulousness, irritability, hunger, and nausea that may become more pronounced if misinterpreted by the individual. It is of interest that some of these symptoms mirror those associated with acute or chronic anxiety disturbances.

Finally, it would be of value to definitively correlate reported somatic difficulties and disrupted affective-anxiety states in chronic alcoholics by way of their own self-report. Horn, Wanberg, and Adams (1974) have done this via the MMPI with a large sample (1,884) of chronic alcoholics. In terms of relating drinking behavior to MMPI responses, the anxiety and hypochondriasis factors accounted for the major common variance. This was interpreted as a neurotic-anxiety personality dynamic that emerges over a gradual time period in tandem with continuing alcohol abuse. For the purposes of this investigation, the studies cited here argue strongly for the presence of identifiable somatic disturbances which contribute to the ongoing anxiety experiences of the chronic alcoholic. What is unclear is the relative contributions of the physiological, psychological, and environmental components of the

perceived anxiety state. The above studies, however, help to demonstrate the covariation of observable somatic disturbances and self-reported anxiety in chronic alcoholism, thus, supporting the notion of their mutually reinforcing interaction over time.

Anxiety Trends in Controlled Drinking Studies

Much of our current understanding of anxiety trends in alcohol abuse comes from studies focusing on temporal changes in affective states during a drinking period. Considerable attention has been given to observing the multiple effects arising from experimentally controlled drinking sessions and somewhat less attention shown to obtaining measures of individual, subjective reactive changes to alcohol intake. Mendelson and Mello (1966) used operant techniques with male alcoholics to observe the behavior sequence following alcohol ingestion. Subjects showed initially mild intoxication with some excessive speech. Moderate intoxication showed speech slurring. Anxiety increased as the blood alcohol levels increased and clients reported greater subjective distress that accompanied increasing ambivalence toward drinking.

Tamerin and Mendelson (1969) used volunteers to look at behavior prior to, during, and following a single, one day period of experimentally induced intoxication to follow fluctuations in anxiety states. Tension relief was found only during the earliest phase of intake and prolonged drinking resulted in progressive depression, guilt, and inner tension. Further evidence for an increase in anxiety following the initiation of a drinking episode comes from Mendelson and Mello (1966) and McNamee (1968)

and his co-workers. It is of interest that contrasting evidence suggests normal, social drinkers do not demonstrate increases in anxiety unless increasing amounts of alcohol are consumed, while alcoholics demonstrate heightened anxiety levels with increasing amounts.

To understand the impact of experimentally manipulating stress or anxiety induction variables during alcohol intake, studies have attempted to assess the clinical relevance of the stress inducing procedures. For example, Higgins and Marlatt (1973) tested the hypothesis that the arousal of anxiety by threat of shock would increase alcohol consumption. Twenty male non-abstinent alcoholics and twenty male social drinkers were engaged in an alcohol taste rating task. High and low levels of state anxiety were induced by threatening subjects with either a painful or non-painful electric shock. It was found that alcoholics consumed significantly more alcohol than social drinkers, but the amounts consumed by both groups were unrelated to the anxiety induction factor. Earlier evidence, however, by both Lienart and Traxel (1959) and Korn (1960) suggested that the reinforcing properties of alcohol were enhanced under conditions of relevant emotional arousal in both human and non-human subjects. The study of Higgins and Marlatt (1973) may have had quite different results if subjects had been exposed to a stressor that had somewhat more clinical relevance than electric shock. More recently, Miller (1974) and his colleagues found that stress induced via role playing of social situations increased the drinking behavior in alcoholic subjects. Finally, Allman, Taylor, and Nathan (1972) suggested that the relationship between stress and alcohol consumption is very complex.

Related factors include personality characteristics, type of stress, self-perceptions, and the context in which it is experienced.

Further support for the significant role of the individual's own subjective assessment of anxiety or distress in the overall behavioral response pattern comes from physiological measures of muscle tension in chronic alcoholics. Steffen, Nathan, and Taylor (1974) studied the relationships among alcohol consumption, self-reported distress, and muscular tension. Subjects were permitted free access to beverage alcohol and were monitored for blood alcohol level, electromyographic response, and subjective distress every other hour of their waking day for twelve days. Pearson product-moment correlations revealed: (1) significant negative correlations between blood alcohol level and electromyographic response; (2) a significant positive correlation between blood alcohol level and subjective distress; and (3) no relationship between electromyographic response and subjective distress. Results thus suggest a complex interplay among the factors of alcohol consumption, self-reported anxiety or distress, and muscular tension, but clearly relate subjective, affective response enhancement to increasing blood alcohol levels.

Since this study concerns re-employment anxiety and since this variable necessarily has social-interactional components, it is important to review controlled drinking research that relates to the impact of social-environmental factors in alcohol abuse anxiety. Allman, Taylor, and Nathan (1972) studied the relationship between alcohol consumption and experimentally imposed stress and sociability as measured by

frequency of group interaction in alcoholics over a 32-day period. Subjects drank most when stress and periods of socialization coincided; they drank least when stress and social isolation occurred together. Stress produced significant increases in tension, depression, and anger; while, alcohol independently increased prevailing levels of depression and anxiety. Nathan and O'Brien (1971) studied the social behavior of 'skid row' alcoholics versus non-alcoholics during a controlled prolonged drinking episode in an inpatient setting. Points earned in an operant paradigm could be spent on alcohol or to escape social isolation. Findings indicate that in this situation alcoholics tended to be isolated before, during, and after drinking. It was thought that continued social isolation may have served as a cue for further alcohol intake despite the choice being available to increase social contact. In a related study (Nathan, 1970) centering on a behavioral analysis of the interaction between alcohol intake and human contact similar findings emerged. Operant data on the temporal and quantitative parameters of prolonged drinking, and on the effects of systematic imposition of socialization and isolation conditions on drinking and social behavior were collected on chronic alcoholic patients. Results were as follows: (1) patterns of drinking and operant working shown by nearly all subjects corresponded in large measure to those shown by chronic alcoholics in their natural environment; (2) when sober, subjects said they drank to decrease anxiety and depression which, however, appeared to increase after a few hours of drinking (as measured by self-ratings on the Mood-Adjective Checklist); and (3) most subjects, sober or intoxicated, seemed to prefer being alone,

even during scheduled socialization; yet typically most subjects initially preferred socialized to isolated drinking. It appears from these three studies that perceived stress or anxiety can have a variable effect on drinking and social contact, depending on the severity level of the actual experienced tension or threat. It should also be observed that this subjective experience is seen as very evident, by the alcoholic's own self-report, prior to the onset of the drinking episode.

There is much evidence for the presence and influence of self-perceived threat in anxiety states associated with a variety of psychiatric disorders (Zuckerman & Spielberger, 1976). Kilpatrick (1976) and his co-workers have shown this to also be the case with chronic alcoholic males. They were observed to exhibit higher levels of emotional lability and susceptibility to self-disclosed psychological threat, and scored higher than normals on the State-Trait Anxiety Inventory. This finding, together with the included summary of anxiety characteristics in controlled drinking studies, adds the significant factor of cognitive self-assessments to the list of important contributors to the overall anxiety levels and stress reactions of the chronic alcoholic. This issue will be addressed in the next section.

## Anxiety as a Cognitive Mediator in Alcoholism

Viewing anxiety in the alcoholic from a cognitive framework has received wide attention. For example, Rice and Schoenfield (1975) attempted to test the hypothesis that anxiety is a cognitive mediator which facilitates behavior suppression in various aversive conditioning

paradigms aimed at decreasing responsivity to alcohol-related stimuli. Anxiety responses were found to vary inconsistently with conditioning paradigms. Polivy, Schueneman, and Carlson (1976) studied separately the pharmacological and cognitive effects of alcohol use by manipulating the subjects' expectancies. It was found that despite alcohol being a pharmacological sedative, the cognition that one is drinking alcohol increases self-perceived anxiety. A sampling of other investigations relating cognitive events to anxiety in the alcoholic concerned such issues as relapse typologies (Litman, Eisner, & Rawson, 1977), defensive styles (O'Leary, Rohsenow, Schaw, & Donovan, 1977) in alcohol abuse, learned response adaptations (Gnepp, 1976), and the work already reviewed on controlled drinking studies that give considerable weight to the impact of self-perceptions on subsequent anxiety states before, during, and following alcohol use.

None of the research reviewed, however, gives a concise theoretical model with which to conceptualize anxiety in the alcoholic condition from a cognitive framework. A useful model to be summarized and adapted for use with an alcoholic population comes from the work of Sarason (1972) on test anxiety.

The aspect of present inquiry into the nature of task-related, or test anxiety concerns the observable tendency for individuals to give self-centered interfering responses under conditions of being assessed or evaluated (Phillips, Martin, & Meyers; 1972). Under stress conditions, it has been noted that individual self-reference statements have both an emotional and a cognitive component (e.g., "I can't do it; I'm too

nervous; or I'll never finish correctly"). Selective attention shows a focus on cues that are personalized, task-irrelevant, and clearly compete in a maladaptive manner with the demands of the external task (Sarason, 1972; Wine, 1971).

In an extension of his earlier work, Sarason has shown that self-preoccupation may interfere at three levels as the person responds or prepares to respond to external tasks. First, it may distort, interrupt, or decrease attention to the environment. Second, self-preoccupation may disrupt the processing of available data from the environment; and third, it may inhibit the selection of appropriate responses. Worry or negative self-assessments are probably demanding of ongoing attention and concentration. Clearly, attention is typically divided between both internal (memories, attitudes) and external cues and the balance seems to have much to do with overall outcome or performance in a stressful situation (Sarason, 1975). Anxiety arises out of the individual's interpretation of life events. Sarason (1975) suggests that this more basic process of self-focusing is what underlies anxiety states.

Other authors, in particular Ellis (1971), have argued that these self-evaluations can occur without the individual's complete conscious awareness. Ellis argues that precipitating events which elicit danger or threat-laden ideation are self-fulfilling because new or similar situations with unpleasant potential get construed as threatening and cause the person to continue to magnify the anxiety provoking ideation. Such cognitive self-perceptions are a source of fear since the actual origins of the negative or threat-inducing cognitions is unrecognized (Marks & Lader, 1973).

By way of contrast, what can be said of successful cognitive management of stressful situations? The classic study of Fenz and Epstein (1962) regarding novice and experienced parachutists' reactions to the stress of the jump provides one answer. Using the TAT as a measure of cognitive events, they found that the least anxious and most experienced jumpers exhibited a high need-cognizance, that is, a need to be inquisitive, curious, to search, and to think about the task or problem at hand. Inexperienced jumpers, however, frequently used denial as a defense mechanism against the fear stimulated by the task. It seems that the least anxious jumpers acknowledged some fear, displayed little affective arousal and, therefore, channelled more energy into appropriate, on-task cognitions concerned with a successful jump.

Analogous work with test anxiety has been pioneered by Meichenbaum (1972), especially in the area of cognitive preparation for stress. He has shown how specific training to increase attention to relevant cues in test anxiety has yielded fewer internal, affective responses and decreased debilitating anxiety while increasing performance. The steps or components in such a program follow a logical progression as follows: (1) information gathering; (2) modeling of appropriate responses to the task; (3) self-monitoring of trial responses; (4) attentional training; (5) relaxation training; and (6) practice and reinforcement. Meichenbaum observes that such a strategy underlies most well-learned and subsequently well-performed responses to a given task.

Anxiety and Alcoholic Relapse

Relapse is a frequent and well documented phenomenon related to the disposition of alcoholic clients following a sober period and is more likely with the chronic, disaffiliated 'skid row' type alcoholic. The concept of the revolving-door alcoholic is commonly associated with such individuals. Whether the prior drinking pattern is intermittent (binge, or episodic drinking periods) or continuous (extended or sustained pattern) it appears that both are related to persistent anxiety states. Tomsovic (1974) argues that binge drinkers tend to begin a drinking episode in response to some type of social obligation such as a job pressure that is aversive and therefore quite anxiety provoking to the individual. Continuous drinkers appear to be seeking a steady, anesthetic, tranquil state that is probably sought to compete with underlying, persistent anxiety.

What is not well documented is the degree to which the alcoholic's work or re-employement plans contribute or relate to subsequent relapse and resumption of prior abuse patterns. Research in predicting the drop-out rate of chronic alcoholics from vocational development programs as a function of anxiety levels apparently is not available. Parallel research in treatment drop-out characteristics from outpatient care might provide some leads. In some respects, the demands of following through on outpatient treatment may be analogous to the demands and threats in following through on a plan for re-employement or career development. Baekeland, Lundwall, and Shanahan (1973) have found that rapid dropouts from therapy were individuals marked by high levels of anxiety,

depression, and somatic and psychosomatic symptoms. Again it is significant, as noted in the previously reviewed research, that anxiety states and disturbed somatic states occur in tandem. If a similar pattern exists in drinking states, without intervention the outlook for the ambulatory chronic alcoholic is very poor. Anxiety appears to fluctuate over time but does not abate in the long-term view, thus contributing to frequent relapse.

It is interesting to contrast the literature on the course of anxiety in non-alcoholic conditions to the above findings. For example, Schapira, Roth, and Kerr (1972) and Kerr, Roth, and Schapira (1974) found that affective disorders characterized by anxiety symptoms appear to follow a fluctuating course with frequent relapse. This was demonstrated over a nearly four-year period. Further, Wheeler, White, and Reed (1950) report a twenty-year follow-up of 173 patients with anxiety disorders. They found that the anxiety symptoms following initial, partial recovery had a mild but persistent course characterized by exacerbations and remissions. Respondents noted that these anxiety symptoms continued to trouble them and had a negative impact on their work adjustment.

There is a strong argument for designing treatment programs geared toward teaching the alcoholic more effective coping behaviors within the context of specific demands (Litman, Eiser, & Rawson, 1977), and this seems especially relevant to the study of sequential anxiety patterns in the alcoholic as they meet the demands of vocational readjustment. In fact, there is some additional evidence that less favorable treatment responses are associated with treatment programs focusing on underlying

personality dynamics and associated conflicts (Kanas, Cleveland, Pokorny, & Miller, 1976). They emphasize that treatment outcome is largely dependent upon both the characteristics of the population treated and the treatment approach. Response to treatment was highly favorable for less symptomatic alcoholics when direct emphasis was given to maintaining oneself in a completely abstinent condition. Less favorable results were observed with more symptomatic, anxious, and neurotic alcoholics when the program was designed to resolve underlying personality disturbances. Other suggestions have been to treat directly in the client's current occupational setting; however, such alcoholics are already placed in the job force and the focus is on readjustment as opposed to vocational re-integration (Edwards, Bucky, & Schuckit, 1977). No data appear to exist identifying and treating the stresses (e.g., anxiety) that accompany the long-term, chronic alcoholic's attempts at re-employement or career development following a history of chronic unemployment.

Research is also rather limited in the study of sequential anxiety features in alcoholic relapse. One study (Hare, 1971) followed a group of 22 chronic alcoholics intensively for up to six months on a weekly outpatient basis. The patients rated levels of anxiety, depression, and alcohol craving on a daily basis. Significant life-change events were recorded in order to relate these later to any drinking episodes. There were approximately three relapses per patient. The overall clinical impression was that relapse episodes occurred suddenly and only in a minority of cases could be linked temporally to some specific stressful event. Also, there was no evidence, based on self-report data, of a

gradual change in mood or self-assessment status in the days preceding relapse.

One possible explanation of the findings in the above study relates to the potential presence of high levels of denial in the self-report on mood states in these alcoholics. Perhaps direct requests for the self-report of mood fluctuations is too threatening and stimulates a defensive reply. In another longitudinal study (O'Leary, Rohsenow, Shaw, & Donovan, 1977) some support for this view is reported. Treatment outcome data suggested that those alcoholics with lower relapse rates had higher levels of denial as measured by the Defense Mechanism Inventory, although denial in general was a primary factor in most alcoholics' defensive structures. It is interesting that the most successful alcoholics (up to one year follow-up) were those who coped with stressors by not confronting the significance of their anxiety. This is a potentially useful treatment finding but does not assist in further understanding how changes in mood and anxiety levels relate to subsequent relapse. In fact, it was suggested by these same authors that treatment efforts be directed away from confrontation of defenses and toward the development of anxiety-reducing coping skills. This is a reasonable plan but requires that the anxiety can be detected first and then correlated in terms of its relative severity to any subsequent relapse episodes. It is possible that by assessing anxiety as a function of somatic disturbance there may be more potential in circumventing the impact of denial, and, thereby, obtain a clearer view of internal fluctuations of tension states.

One additional study was located using non-alcoholic subjects (college students) that attempted to relate anxiety and frequency of drinking or what could be termed non-alcoholic relapse (Smart, 1968). A simple linear relationship could be predicted on the basis of anxiety reduction theories but this relationship was not observed. A curvilinear relationship was predicted because studies on motivation and learning show that the highest performances on learning tasks occur at intermediate levels of drive. Drinking frequency in college students was, indeed, curvilinearly related to scores on the Manifest Anxiety Scale. Those intermediate in anxiety were the most frequent drinkers (relapse prone), whereas those at higher and lower levels of drive drank less frequently. No relationship was found between Manifest Anxiety scores and the amount typically consumed. In light of these findings, it would be a value to repeat this study with an alcoholic population while controlling for the type of anxiety inducing variables present (e.g., re-employment stressors).

From these studies, one can conclude that excessive alcohol injestion and anxiety are positively related. In summary, it appears that alcoholic anxiety or tension states are persistent though fluctuating in nature and difficult to measure, especially when not related to relevant external and internal demands and stressors.

## Re-employment as a Treatment Stress in Chronic Alcoholics

Current understanding of anxiety trends during treatment for chronic alcoholism has mostly been derived from single-instance or pre-

test, post-test measurements of manifest and state-trait anxiety. These measurements have largely come from self-report instruments and behavioral check-lists. For example, Rohan, (1972) studied MMPI and Taylor Manifest Anxiety scores at admission and discharge from a hospital alcohol treatment program that had an average length of stay of 69 days. It was found that the Taylor Manifest Anxiety scores were significantly lower at discharge. The employement status pre- and post-treatment was not investigated, and it would have been of value to determine if lower anxiety levels at discharge were related to employment dispositions. It may be that general or trait anxiety had lessened but that anxiety in response to specific real-world problems (state anxiety) such as employability may have gone undetected without relevant stimulus arousal or temporal cueing to the self-report measuring device. That is, evaluation of anxiety levels at single points in time is difficult to interpret because there is little control over situational variables that fluctuate with time. Further, response modes of self-report anxiety scales usually are limited to generalized anxiety characteristics rather than to a variety of more delimited indicators of anxiety such as autonomic arousal modes, cognitive modes of distress and excitation. In this same study (Rohan, 1972) the MMPI data supported the notion of a psychopathic personality adjustment in 65 percent of the sample showing problem areas of excessive tension (anxiety), suspiciousness, somatic preoccupation, introversion, and overreaction to stimulation. Anxiety fluctuations secondary to such personality difficulties would seem to be highly variable with ongoing fluctuations of situational stressors.

Of further importance, isolated, one-time measurement of manifest anxiety has not proved useful in attempting to discriminate treatment successes and failures in residential chronic alcoholic populations. Hague, Donovan, and O'Leary (1976) found no differences based on Taylor Manifest Anxiety Scale scores and a number of additional measures in terms of differential treatment dispositions: (1) those who discontinued treatment after a two-week evaluation period; (2) those who chose to remain for a 60-day treatment program, but who discontinued prior to completion; and (3) those who completed the 60-day program. This, then, also argues for studying alcoholic anxiety states in relationship to ongoing situational stressors with a repeated measures strategy. This may assist in uncovering alterations in self-perceived stress that are not monitored by single-instance or pre-, post-test measurements of anxiety.

Important situational stressors facing the chronically unemployed, long-term alcoholic are the demands associated with progress toward re-employement. Development of work seeking strategies and the potential adjustment to employment tasks represents a clear shift in the chronic alcoholic's style of living. Such a shift necessarily requires processing of new situations, an examination of self-capacities and skills, and a review of alternative means and plans for addressing the new demands of employment that cannot be totally predicted in advance. This set of circumstances found in vocational rehabilitation programs competes with the existing habit of daily or periodic alcoholic episodes.

Another way of conceptualizing this situation comes by way of current stress theory. Cox (1978) defines stress as a complex and dynamic

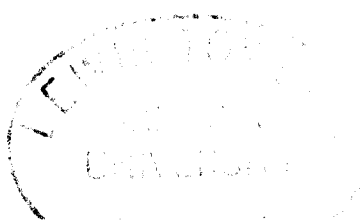
interaction between actual coping capacity, perceived capacity, actual task demand, and perceived demand. Any imbalance gives rise to an emotive experience (e.g., anxiety) and a stress response that has physiological, cognitive, and behavioral components. The perceived state or internal perceptual factor allows for the operation of a wide variety of organismic variables. The imbalance is probably accompanied by a wide variety of subjective emotional responses, physiological changes, and cognitive assessments that combine in a unique manner to produce the anxiety state.

These foregoing theoretical positions can be used to develop a framework from which to investigate temporal changes in anxiety states of the chronic alcoholic as he attempts vocational re-development. Consider, for example, a chronic alcoholic in residential treatment who is about to select a vocational plan that is available through the program. He is faced with the following alternatives: (1) academic school; (2) job-skills training (such as is available through the Illinois Department of Vocational Rehabilitation, CETA, or Jewish Vocational Services); or (3) independent job search. Such alternatives place the alcoholic in a position from which he must gather relevant information, integrate this with past experience, and select a plan; or he must leave the decision-making field, that is, chose not to decide and withdraw from the program. The alcoholic's anxiety state is likely, under such circumstances, to vary with the actual and perceived demands of the task balanced against perceived and available capacities. The manifestation of debilitating anxiety is also likely to vary as a function of time as differential task demands become known and as the reverie of any self-preoccupation process,

focusing on internal cues and remembrances of prior vocational behaviors, enters the alcoholic's experience.

There is evidence from the previously reviewed literature on controlled drinking research that anxiety states, based on self-report measures, tend to increase prior to the onset of a drinking episode (Nathan, 1970; Steffen, Nathan, & Taylor, 1974). However, the linking of these anxiety fluctuations to real-world demands has been limited to rather generalized social-situational pressures and not to re-employment stressors. It was the purpose then of this investigation to attempt to identify anxiety fluctuations in the chronically unemployed, chronic alcoholic as he faces re-employement or vocational re-development opportunities.

It is necessarily difficult to evaluate for the presence or absence of individual anxiety experiences that bear on re-employment issues in the typically well-defended chronic alcoholic. Since previous research strongly suggests a significant correlation between affective arousal and physiological state, it appears more feasible to utilize somatic correlates of anxiety (and accompanying self-preoccupation processes) because the symptoms are more readily available for self-report. That is, male alcoholics appear to more readily frame their anxiety experiences in somatic terms than in psychological ones (Litman, 1974). Before studying anxiety trends, it was necessary to develop a measure demonstrating vocational-development anxiety in chronic alcoholics by self-reported distress-related somatic and affective arousal symptoms.



Such a measure was constructed by this author to empirically determine if selected career development situations evoke greater avoidance reactions from unemployed residential chronic alcoholics (less than 30 days of treatment) compared to alcoholics with more then one month of residential treatment, non-addicted employed males, and unemployed undergraduate students (see Appendix A). A modified version of the S-R Inventory of Anxiousness (Endler, Hunt, & Rosenstein, 1962) was used to measure somatically related approach-avoidance difference scores for four imagined career development situations: Considering entering a career; Entering a work training program; Beginning school; Going on a job interview. It was found that of the two alcoholic groups, only those with less than 30 days of treatment demonstrated consistently greater career development conflict when compared to the college group and to the employed males group. The measure appeared to be sensitive to detecting self-reported anxiety arousal as cued by vocational development situations. What was not clear from this pilot study is why alcoholics in the first phase of treatment manifest higher levels of career conflict and whether there is a trend across time in their self-perceived reactions to the demands a typical vocational rehabilitation program that may place them at high risk for relapse.

## Purpose of Study and Hypotheses

The following study investigated anxiety trends in early treatment in order to establish a more descriptive understanding of how vocational development choices impact on the chronic alcoholic beginning residential

treatment. The purpose was to identify and measure, via a self-report format, any fluctuations over time in anxiety states of chronic alcoholics as they approached and addressed re-employment and career development opportunities and choices.

Since the major interest of this study concerned anxiety trends, as opposed to single-instance comparisons of anxiety scores, the following hypotheses were formulated in terms of anxiety trends across the various vocational commitment time periods for three groups of alcoholics recently admitted to an intermediate care treatment program. The anxiety scores for the three groups are hypothesized to diverge across time in a significant manner as specified in the general descriptive and statistical terms given as follows:

1. For the low vocational demand group (control group): Anxiety scores on the two self-report measures will be a linear function of time without significant variation across time or vocational commitment levels. Trend analysis will reveal the absence of any trend since the anxiety means (the dependent variable) will not be significantly influenced by temporal vocational commitment levels (independent variable).

2. For the intermediate vocational demand group: Trend analysis of anxiety scores on the two self-report measures across vocational commitment levels will reveal

the presence of a nonlinear trend. It is hypothesized that the trend of the anxiety scores will demonstrate a negative quadratic relationship. That is, use of orthogonal polynomial coefficients for fitting the trend will reveal a significant quadratic component.

3. For the high vocational demand group: Trend analysis of the anxiety scores across vocational commitment levels will reveal the presence of an increasing linear trend.

The proposed trend characterstics presumes a significant interaction effect between groups and commitment levels in a repeated measures analysis of variance of anxiety scores.

Rationale for the above hypotheses concerned the following: The control group or the group with the least vocational re-development stress should demonstrate reasonably invariant self-reported anxiety over the short time interval of the study. The treatment groups, however, should demonstrate fluctuations in anxiety states but with different characteristics. The intermediate vocational demand group was expected to show increasing anxiety following being informed of a pending vocational interview that exists as one of the five vocational commitment levels. However, post-interview scores should reveal a decrease in anxiety since there is no immediate vocational decision or commitment to a specified plan which leads to career-development eventualities as provided in the interview describing the various vocational choices. Such

a pattern of increasing and then decreasing anxiety mean scores for the vocational commitment levels can be recognized by a quadratic trend in the data. In contrast, the high vocational demand group was expected to demonstrate a linearly accelerated increase in self-reported anxiety in view of the increasing demands brought upon the alcoholic by a forced vocational commitment situation in which they were required to choose one of the available plans for re-employment.

In addition, self-reported anxiety means collapsed across the vocational levels should reveal significantly greater scores for the treatment groups when compared to the control group. The overall mean anxiety scores for the high demand group are expected to be significantly greater than those of the intermediate demand group.

# CHAPTER III

# METHOD

## Subjects

The subjects were 53 male alcoholics who were successive admissions to a state-funded, 37-day, Intermediate Care residential alcohol treatment facility operated by the Salvation Army in the Uptown Community of Chicago. Of these, eight did not remain long enough to complete the study.

This particular facility is in a severely economically depressed subcommunity of Uptown; one which has received the migration and displacement of a large number of former 'skid row' chronic alcoholics from the West Madison Street area of Chicago. The clients can be generally described as having experienced chronic use of alcohol to a degree that has severely negatively impacted on individual economic, social-psychological, and physical well-being. These male clients are characteristically undomiciled prior to the current treatment admission and have a history of multiple alcohol-related treatment exposures in public-aided, no fee-for-service facilities. Alcoholic relapse is frequent in their treatment history, and they have typically become dependent upon public and private charitable services and funds in order to maintain a subsistence level of living.

Subjects were limited in age range from 21 to 55 and had to be physically able to work. Alcoholics admitted to the program who were

currently on veteran's or social security disability were excluded from this study. These selection criteria resulted in the exclusion of six subjects. The mean age of this subject sample was 35.8 years (standard deviation = 8.9 years). The modal marital status was never married (40.0 percent) and a combined category of those separated or divorced accounted for 57.8 percent of the sample. The mean education level was 10.2 years (standard deviation = 1.6 years). Thirty percent had completed high school as opposed to 15 percent who had not completed eighth grade. The typical occupation was unskilled or semi-skilled laborer with a mean time since last employment of 4.3 months (standard deviation = 4.8 months). The mean length of time spent on the last permanent employment was 3.2 months (standard deviation = 3.5 months). The average income over the last year was less than 2,000 dollars and 87 percent admitted to past use of temporary labor pools. Prior exposure to an alcoholic work-rehabilitation program was admitted to by 35.5 percent of the sample. Among those subjects, the mean number of prior alcohol-related admissions to both hospital and intermediate care facilities was 2.6 (standard deviation = 1.6), while 24.4 percent had one or more previous admissions to this same program. Finally, the mean number of years of self-reported chronic alcohol abuse was 8.7 (standard deviation = 4.8 years).

## Treatment Program

The treatment facility is a 16-bed unit with an additional six to eight bed Extended Care Unit for those men who complete the intermediate program and wish to remain for the purpose of completing their employment

or vocational plans. Referrals to the initial program come primarily from local community detoxification centers, and clients are required to have been alcohol-free for at least five days as documented by the referring agency. Self-referred individuals are also admitted, but in accord with program policy must report to a counselor in an outpatient clinic of the same facility in a sober condition for three to five days before being accepted. At any one time, approximately 20 to 30 percent of the program members will have been former clients of this same residential program.

At intake to the Intermediate Care Program a thorough social, vocational, and drinking history or update is obtained and the clients are required to list current problems to be addressed and short- and long-range goals to be pursued while in treatment. The following relevant demographic data is also obtained: age, marital status, education, former occupation, time since last employed, income level, public-aid status, recent use of labor pools, length of last permanent employment, self-reported length of time that alcohol has been a serious problem, number of prior alcohol-related institutionalizations (hospital or non-medical treatment), prior participation in a vocational training program and counselor rating of the client's commitment to seek career development.

Clinical criteria for admission are limited as follows: Voluntary basis only, at least 18 years old, free of major disabling medical and/or psychiatric problems, and evidence of alcohol addiction as assessed by the counselor. Multiple re-admissions are permitted because of the high-risk nature of prospective clients. Upon admission to the Intermediate Care Program, residents are assigned a paraprofessional counselor (B.A. level)

who acts as a coordinator for a treatment plan, the initial phase of which is developed over the first week of the program. The first week is considered an orientation and evaluation week during which the client meets with his individual counselor but does not participate in any of the regular programming except for a housekeeping work detail.

The treatment plan developed during the first week consists of a problem-oriented outline of specific behavioral difficulties related primarily to self-perceptions/self-image, interpersonal relations, vocational adjustment, and past addiction patterns. The Multi-dimensional Assessment and Planning Form - MAP (Hammond & Stanfield, 1976) is used for conceptualizing determinates of problems and outlining proposed approaches for solutions. Prevailing mood, cognitive and emotional state are noted by the counselor as is the current family and environmental context of the client. The MAP form is expanded, updated and modified throughout the treatment program and is reviewed twice in staffings and regularly by the individual counselor during the 37-day Intermediate Care Program.

Treatment modes include individual and group counseling (Ph.D. supervised) with the focus varying from instructional to insight-oriented approaches. Alcoholic's Anonymous is a major component with meetings both within the residence and in affiliated existing community AA groups. These groups and twice-a-week meetings with the counselor are required of clients. In addition, considerable focus is placed on employment needs as a specialized counselor is on staff with specific training in vocational rehabilitation. This counselor has an assessment interview at the

midpoint of the program to inform the client about existing job or training opportunities, to offer assistance in this area or specific referrals, and to attempt to clarify for the client and staff the resident's current vocational potential. Those clients without a minimal employment history and with limited marketable skills are referred to existing agencies for more sophisticated vocational evaluation and guidance. The treatment program makes available to the clients four different vocational or career-development alternatives that are initiated at the client's request following completion of the first three weeks of the Intermediate Care Program. The vocational alternatives include: (1) a job skills evaluation and training experience through such agencies as Goodwill Industries, the Illinois Department of Vocational Rehabilitation, Jewish Vocational Services, or the CETA program; (2) direct referral to a trade school program for such job skills training as welding, auto mechanics, or spray painting, among many others; (3) enrollment in an academic program for the purposes of obtaining a high school diploma or for pursuing college credit; and (4) an independent job hunt with some supportive structuring and guidance by the center's staff.

Near the conclusion of the 37-day program, each resident participates in the development of an after-care plan that includes vocational intentions and continuing treatment issues that may be unresolved at the completion of the program. Clients completing the program to this point are typically admitted to the Extended Care Program (three month duration), another residential, post-intermediate care facility, or seek independent living with outpatient follow-up. Clients

participating in other agency aftercare treatment are followed for a three month period to ensure that the client receives proper services via the referral placement.

Early discharge from the program may occur for several reasons. First, any client involved in either self-reported or discovered drinking is required to leave the residence. Second, a client is terminated in the event of evident need for acute medical or psychiatric intervention. And third, a client may be asked to leave the program if staff determines that he is unable to profit from the program. This last reason is most likely to occur near the end of the orientation week and is based on the client's reaction to the program requirements. In addition, clients cannot be detained in the program against their will and are allowed to leave at any time.

Procedures

All groups were asked at intake for their written permission and cooperation in filling out "various research questionnaires" that were to be given during their stay. Clients were allowed the choice to refuse to participate in this study without affecting their status on the program. The self-report measures and their administration are elaborated on in the Instruments section. All subjects volunteered and were assigned successively to each of two treatment groups and one control group until there was a total of fifteen in each group. Within one to two days following admission, the subjects were informed by their respective counselors as to the vocational aspects of the program. The manner and

type of information given to subjects represented the independent variable, with three levels of induced vocational demand.

The assignment of the groups based on three levels of induced career-development demand was designed to reflect the actual vocational choice stresses facing the alcoholic over time as he participates in a vocational rehabilitation process typical of many alcohol treatment programs. The major difference here was the condensing of the temporal component to a two week period in order to make the groups comparable and, therefore, be able to observe for any potential differences in anxiety trends for the various groups. The first group or the intermediate vocational demand group paralleled existing treatment programming and received the following information:

> As part of the overall treatment program, we will schedule a meeting with a special vocational counselor in order to discuss vocational training and job opportunities available through this program and to discuss your own interests and plans regarding employment.

The date of the interview was then set with the client approximately seven to eight working days from the admission date. Questions were deflected by the individual counselor regarding specifics of this meeting or details about the vocational opportunities. The 'special vocational counselor' was the principle investigator of this study.

The high vocational demand group received the following information:

> As part of the overall treatment program, we will schedule a meeting with a special vocational counselor in order to discuss vocational training and job opportunities available through this program and to discuss your own interests and plans regarding employment. It will be necessary for you to choose one of

> the vocational plans available after you and the counselor have discussed them. This is necessary in order to get your job plan going quickly.

Again, the date of the interview was set and any client inquiries were deferred to the vocational counselor.

The third group, a control group was considered the low vocational demand group and received the following information:

> As part of the overall treatment package, this program makes available to you some opportunities for job training, vocational development, and re-employment. We will begin to look into these opportunities with you in about two weeks. Although it is good to be thinking about your job plans now, we would like you to use the first two weeks to become comfortable with the format of the program.

Again, employment-oriented questions were delayed for answering and deferred for two weeks.

At the appointed time, the vocational interview was held for the intermediate and high vocational demand groups. This consisted of a 10-15 minute explanation of the four vocational plans available: (1) a job skills evaluation and training opportunity; (2) a trade school referral; (3) academic training; or (4) an independent job search. A general description was given of the step-by-step process of these referrals, the length of the program, what requirements exist under the various alternatives, and examples of what vocational endpoints could be anticipated under the various choices. Clients in both the treatment groups were then invited to discuss their own current plans and interests regarding employment. Subjects in the intermediate vocational demand group were then told that information gained by the interviewer would be shared with their primary counselor and he, in turn, together with the

client, would begin to develop a more final vocational plan over the next three weeks of the program. In contrast, the high vocational demand group members at the end of the interview were handed a form (Appendix B) listing the four plans and asked to mark one choice. After the high vocational demand subjects marked their choice, they signed and dated the form. They were then told that they would be discussing this plan in greater detail with their respective counselor and developing their plans over the next three weeks of the program. Debriefing of only the high vocational demand subjects was necessary since the intermediate vocational demand and control groups were treated along traditional program lines with a slight, though not atypical, delay in the vocational interview for the control group. High vocational demand subjects were informed after the final self-report measure that their vocational decision could be re-negotiated and other alternatives re-examined with their primary counselor.

Measures

The use of a short intelligence screening test was deemed necessary in order to demonstrate equality of groups on this factor and to detect any individuals having severe cognitive deficits. In view of limited staff time and the likely low level of receptiveness of the clients to intelligence testing, the selected screening device was Scale B of the 16-Personality Factor Questionnaire, a 13-item general intelligence measure (Cattel, Eber, & Tatsuoka, 1970). This scale was administered as part of the general intake procedures as previously described. The mean score for

the entire sample was 5.3 scale units (standard deviation = 1.7) with only two scores falling below four; therefore, most subjects were in the average range of intelligence (a scale score of 5 to 6 units).

The principal self-report instrument used for the detection of employment related anxiety states was a modification of the S-R Inventory of Anxiousness (Endler, Hunt, & Rosenstein, 1962) developed in a pilot study (see Appendix A). The inventory was structured on the basis of both situations modified for the vocational development choices of this study and modes of response (felt distress, exhilaration, and autonomic-physiologic reactivity). The four imagined vocational situations presented to the client were: "You are considering going back to work; You are going on a job interview; You are going back to school to further your education; You are going to participate in a work training program". The clients were required to answer the same items for each imagined career-development situation. The order of presentation of the four situations was randomized across subjects in each group. The major advantage of such an instrument is that the components of variance attributable to subjects, situations, and modes of response and their interactions can be isolated. Moreover, since much of the previously reviewed literature on alcoholic anxiety states argues for the substantial impact of environmental stressors, it seemed beneficial to utilize an instrument that measures anxiety as a function of various situational determinants and allows for different response dimensions within a given situation. Further, this instrument demonstrated in the pilot study (Appendix A) a capacity to detect significantly more career

development anxiety in high-risk Intermediate Care clients than in the Extended Care residents and in the control groups.

The Profile of Mood States (POMS) (McNair, Lorr, & Droppleman, 1971) was employed as a partial means for examining generalized anxiety and mood states across time. It is a 65-item, 5-point adjective rating scale developed to measure subjective aspects of affect. The current form is a refinement of earlier forms developed by Nowlis and Green (1957) based on repeated factor analyses of 100 adjective items. Instructions tell the patient that "below is a list of words that describe feelings people have" and that for each word he must select one of five responses that best indicates how he has been feeling "during the past week including today". This instruction was modified for this study by requiring the patient to respond based only upon "today's feelings".

In the development of the POMS scale, six factors were extracted and replicated in a series of investigations on 2,000 male and female subjects. The six factors are tension-anxiety, depression-dejection, confusion, anger-hostility, vigor, and fatigue. Both internal consistency and test-retest reliabilities have been reported (McNair & Lorr, 1964). Test-retest correlations range from .61 to .69 based on pre- and post-treatment measures which introduces a confounding factor that lowers the coefficients. Internal consistency reliabilities range from .74 to .92 as reported by the same authors. In addition, similar factor structures found in two other studies support the current reliability findings (Lorr, Daston, & Smith, 1967; Lorr, McNair, & Weinstein, 1964).

One of the reasons for the selection of the POMS was that a previous study (Lorr, McNair, & Weinstein, 1964), in which the mood scales reflected changes across time in treated groups and in which an untreated group did not show change, indicated that the measure may not be affected by a repeated measures response set. Secondarily, the POMS was chosen in view of its well established factor structure that includes a somatic component related to fatigue and vigor as well as a generalized tension or stress factor. This facet is particularly important in view of previous research indicating a strong somatic component in alcoholics' self-reported anxiety experiences.

The self-report measures of anxiety were administered within the format of a multiple time-series design (Campbell & Stanley, 1963) with the added feature of two treatment groups - the high and intermediate vocational demand groups. The control group was represented by the low vocational demand group. Efforts were made to assure that no significant differences existed initially across groups on relevant subject variables and these sample characteristics are presented in the Results section.

The two self report measures of anxiety were administered at five commitment levels as follows: (1) Day 1, at intake, the first day of admission to the intermediate program (pre-instructional level); (2) Day 3/4, immediately following the notice of a vocational interview date (post-instructional level); (3) Day 6/7, one day prior to the vocational interview (pre-interview level); (4) Day 9/10, one day following the vocational interview (initial post-interview level), and (5) Day 12/13, four days after the interview (final post-interview level). A single day

alternative date for the post-instructional level was established for practical considerations concerning client and staff availability. Given that the date of the interview was set within eight days from the admission date, the total time elapsing across the vocational commitment levels ranged from twelve to thirteen days.

In addition, a staff questionnaire was completed at the pre-instructional level before the interview, and after the final testing. This measure utilized a seven-point scale and included the following five questions: (1) How anxious is the client; (2) What is the client's level or degree of participation in the program; (3) How cooperative is the client; (4) What degree of energy is the client directing toward vocational concerns; and (5) To what extent is the client likely to drop out of the program. This measure was given for clinical comparison to the self-reported measures of vocational stress and generalized anxiety. Two raters were used in order to establish an inter-rater reliability value. The reliability coefficient was found to be .86 in using two ratings for 17 of the 53 subjects across the three rating sessions.

# CHAPTER IV

# RESULTS

## Group Demographic Comparisons

One-way analyses of variance for ratio data and chi-square analyses for categorical data were performed on the following demographic variables to establish group comparability: age, $F$ (3, 49) = .14, $p < .93$, marital status, $\chi^2(12) = 11.2$, $p < .50$, education, $F$ (3, 49) = .28, $p < .85$, occupation, $\chi^2(24) = 17.1$, $p < .85$, time since last employment, $F$ (3, 49) = .65, $p < .59$, income, $\chi^2(12) = 10.9$, $p < .50$, use of labor pools, $\chi^2(3) = .57$, $p < .90$, years chronic alcoholic, $F$ (3, 49) = .37, $p < .77$, prior admission rate, $F$ (3, 49) = 1.41, $p < .25$, prior participation in work rehabilitation programs, $\chi^2(3) = .18$, $p < .98$, intelligence screening test, $F$ (3, 49) = .04, $p < .98$, and recidivist status with the same program, $\chi^2(3) = 1.31$, $p < .75$. In no instance did the three treatment groups differ significantly from each other or from the drop-out group on any of these variables. Means and standard deviations on these variables are provided in the Methods chapter. A trend was observed in the data that indicated the drop-out group was younger than the combined treatment groups (30.7 years versus 36.7 years), but this difference did not reach statistical significance, $t$ (28) = 1.38, $p < .10$. In addition, the treatment groups and the drop-out groups were comparable on the initial staff questionnaire ratings regarding prediction of the client's anxiety level, $F$ (3, 49) = 1.55, $p < .21$, degree of participation and cooperation

in the program, $F$ (3, 49) = 1.78, $p < .16$, vocational energy, $F$ (3, 49) = 1.12, $p < .35$, and the likelihood of attrition, $F$ (3, 49) = .14, $p < .93$. As will be described later, this group comparability based on the subsequent staff ratings was maintained following treatment intervention.

S-R Inventory of Anxiousness: A Repeated Measures Analysis of Variance

Using the S-R Inventory of Anxiousness modified for imagined career development situations as the dependent measure, vocational anxiety (demand) scores on four career-related alternatives (Going on an interview, Returning to school, Entering a work-training program, Going back to work) were obtained within three treatment groups (low, intermediate, high vocational demand) and repeated across five occasions during a two-week time period (vocational commitment levels). The anxiety scores were difference scores resulting from the subtraction of three vocational approach-keyed questions from eleven vocational avoidance-keyed questions comprising the modified version of the S-R Inventory of Anxiousness (see Appendix A for Inventory description). Increasing scores indicate increasing avoidance behavior based on subject self-report.

A 3(Groups) x 4(Career Alternatives) x 5(Occasions) repeated measures analysis of variance was performed on approach-avoidance scores using the BMDP Biomedical Computer Program P-Series (Dixon & Brown, 1979), specifically program BMDP2V. This design conforms with a split-plot factorial design (Kirk, 1968) which has one between-block treatment and two within-block treatments. The three vocational demand groups

represent the between block factor while the four levels of the modified S-R Inventory of Anxiousness and the five vocational commitment occasions represent the within-block factors. This analysis was performed in order to describe potential between group differences occurring across time. The results of the repeated measures analysis of variance is summarized in Table 1.

This analysis yielded a significant main effects for the S-R Inventory, $F$ (3, 126) = 3.52, $p < .02$, and the vocational commitment levels, $F$ (4, 168) = 19.41, $p < .01$. Of more importance for this investigation, significant interactions were found between treatment groups and vocational commitment levels (days of testing), $F$ (8, 168) = 6.35, $p. < .01$, and between S-R Inventory levels and commitment levels, $F$ (12, 504) = 5.13, $p < .02$. This finding confirms the hypothesized presence of group vocational anxiety scores interaction across time. Figure 1 illustrates graphically the nature of the interaction between treatment groups (vocational demand levels) and commitment levels.

The commitment levels or days of testing given in Figure 1 are as previously discussed: Day 1 - at intake; Day 3/4 - post-instructional; Day 6/7 - pre-interview; Day 9/10 - initial post-interview; and Day 12/13 - final post-interview. It is clear from Figure 1 and Table 2 (the individual mean comparisons will be described later) that the vocational anxiety or demand scores vary differently under different treatment groups and differ across commitment levels. The graphs suggest an increasing level of vocational anxiety from Day 1 through Day 12/13 and from the low to the high vocational demand group. Given the significant

Table 1

Repeated Measures Analysis of Variance for Approach-Avoidance Difference Scores on the Modified S-R Inventory of Anxiousness

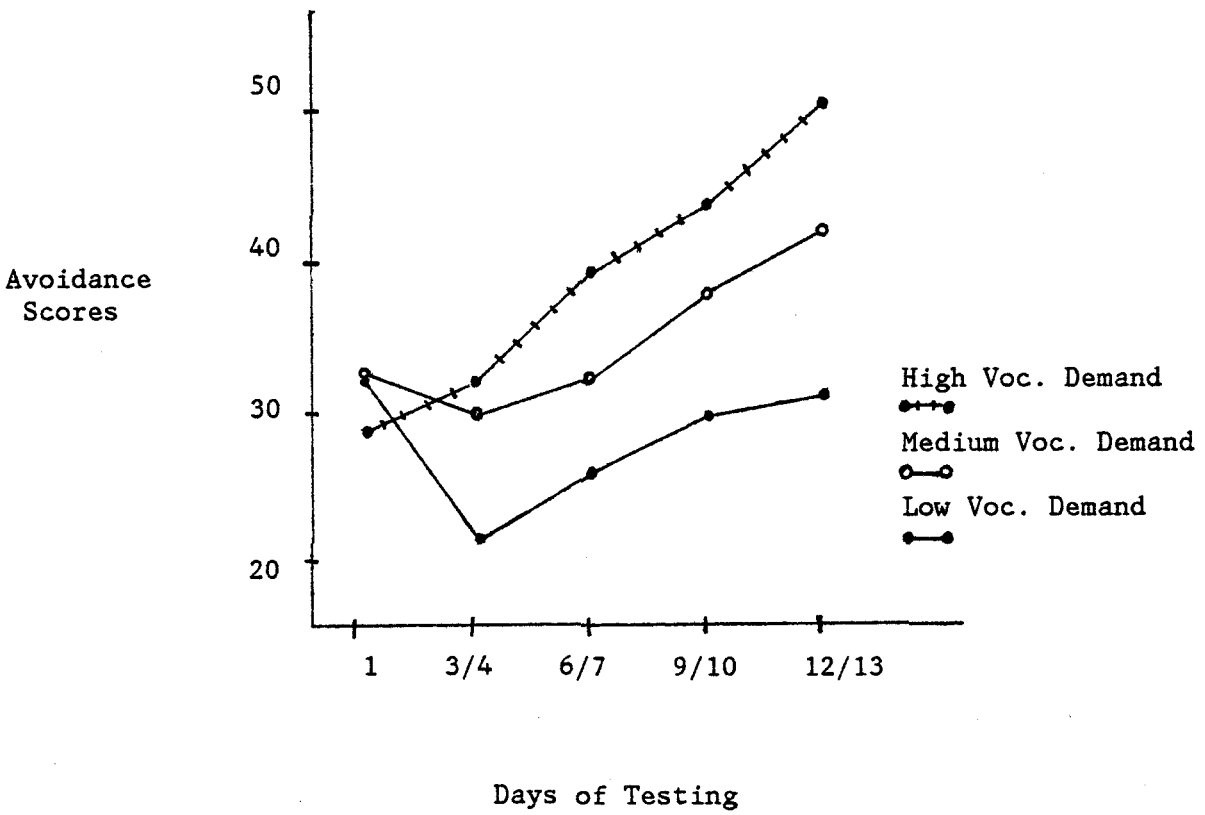
| Source | Sum of Squares | df | Mean Squares | F |
|---|---|---|---|---|
| Voc. Demand (A) | 101.80 | 2 | 50.90 | 1.88 |
| Subject Within Groups Error | 1138.05 | 42 | 27.09 | |
| S-R Inventory (B) | 27.05 | 3 | 9.17 | 3.52* |
| AB | 6.00 | 6 | 0.99 | 0.38 |
| B x Subject Within Groups | 328.51 | 126 | 2.61 | |
| Commit. Level (C) | 92.32 | 4 | 23.08 | 19.41** |
| AC | 60.44 | 8 | 7.56 | 6.35** |
| C x Subject Within Groups | 199.74 | 168 | 1.19 | |
| BC | 23.57 | 12 | 1.96 | 5.13** |
| ABC | 5.37 | 24 | 0.22 | 0.58 |
| BC x Subject Within Groups | 193.14 | 504 | 0.38 | |

* $p < .02$

** $p < .01$

Figure 1

Treatment Group Approach-Avoidance Scores Across Vocational Commitment Levels[a]




[a]Note: the vocational interview took place on Day 8.

Table 2

Means and Standard Deviations of Approach-Avoidance Difference Scores with Significant Across Group Comparisons

| Treatment Period | | Vocational Demand Group | | |
|---|---|---|---|---|
| | | Low | Medium | High |
| Day 1 | M | 32.13 | 32.67 | 28.13 |
| | SD | 20.65 | 19.87 | 16.26 |
| Day 3/4 | M | 22.20 | 29.67 | 31.93 |
| | SD | 11.82 | 16.69 | 14.35 |
| Day 6/7 | M | 25.93 | 31.73 | 38.27 |
| | SD | 14.06 | 17.23 | 14.34 |
| | | 1,2* | 2 | 1 |
| Day 9/10 | M | 27.93 | 36.67 | 42.60 |
| | SD | 14.09 | 15.94 | 14.36 |
| | | 3,4 | 4 | 3 |
| Day 12/13 | M | 29.33 | 41.80 | 48.00 |
| | SD | 15.98 | 16.61 | 14.57 |

* Like superscripts indicate a significant mean difference at the .05 level using Tukey's Test.

interaction between groups and commitment levels, a simple effects analysis was conducted to determine at which levels of the group and day factor the vocational avoidance scores significantly differed.

Simple Effects Analysis For Group by Commitment Level Interaction. Table 3 gives the simple effects analysis of avoidance scores collapsed across levels of the S-R Inventory. In other words, a total avoidance score was calculated by combining the four imagined vocational choice scores. Inspection of Table 3 indicates that the three treatment groups did not significantly differ from each other until Day 9/10 and Day 12/13; that is, vocational anxiety scores for the high demand group were significantly greater when compared to the low demand group at the initial post-interview, $F$ (2, 42) = 3.24, $p < .05$, and final post interview, $F$ (2, 42) = 5.32, $p < .01$, levels of vocational commitment. In addition, vocational avoidance scores within a given group across the five vocational commitment periods were significant for each of the treatment groups; intermediate, $F$ (4, 168) = 7.28, $p < .01$, and high, $F$ (4, 168) = 20.54, $p < .01$, demonstrating a significant range of reported distress over the two week time period encompassing the treatment period.

Since the treatment groups were shown in the simple effect analysis to differ in vocational anxiety at the fourth and fifth commitment period, it was of value to determine which pairs of means accounted for this significance. Therefore, a post hoc analysis of pairwise comparisons at these two commitment levels was conducted. Table 2 gives the mean avoidance scores and significant pairwise comparisons for the three treatment groups.

Table 3

Analysis of Variance of Approach-Avoidance Difference Scores for Simple Effects of Group by Commitment Level Interaction

| Source | Sum of Squares | df | Mean Squares | F |
|---|---|---|---|---|
| Voc. Demand (A) | | | | |
| Commitment Level (C) | | | | |
| Between Subjects | | | | |
| A at C1 | 272.12 | 2 | 136.06 | 2.13 |
| A at C2 | 189.04 | 2 | 94.52 | 1.48 |
| A at C3 | 285.46 | 2 | 142.73 | 2.24 |
| A at C4 | 412.23 | 2 | 206.12 | 3.24* |
| A at C5 | 677.91 | 2 | 338.95 | 5.32** |
| Within Cell | | | | |
| Pooled Error | 13,377.86 | 42 | 63.70 | |
| Within Subjects | | | | |
| C at A1 (low) | 209.52 | 4 | 52.38 | 4.41* |
| C at A2 (int.) | 346.21 | 4 | 86.55 | 7.28** |
| C at A3 (high) | 977.07 | 4 | 244.27 | 20.54** |
| AC | 604.42 | 8 | 75.55 | 19.41** |
| C x Subjects | | | | |
| Within Group | 1,997.41 | 168 | 11.89 | |

* $p < .05$

** $p < .01$

These results indicate that the following pairwise comparisons were significantly different: the low and intermediate, $t$ (42) = 3.84, $p < .05$, and the low and high, $t$ (42) = 6.49, $p < .01$, vocational demand groups at the fourth commitment level; and the low and intermediate, $t$ (42) = 5.52, $p < .01$, and the low and high, $t$ (42) = 8.26, $p < .01$, groups at the fifth commitment level (refer to Figure 1).

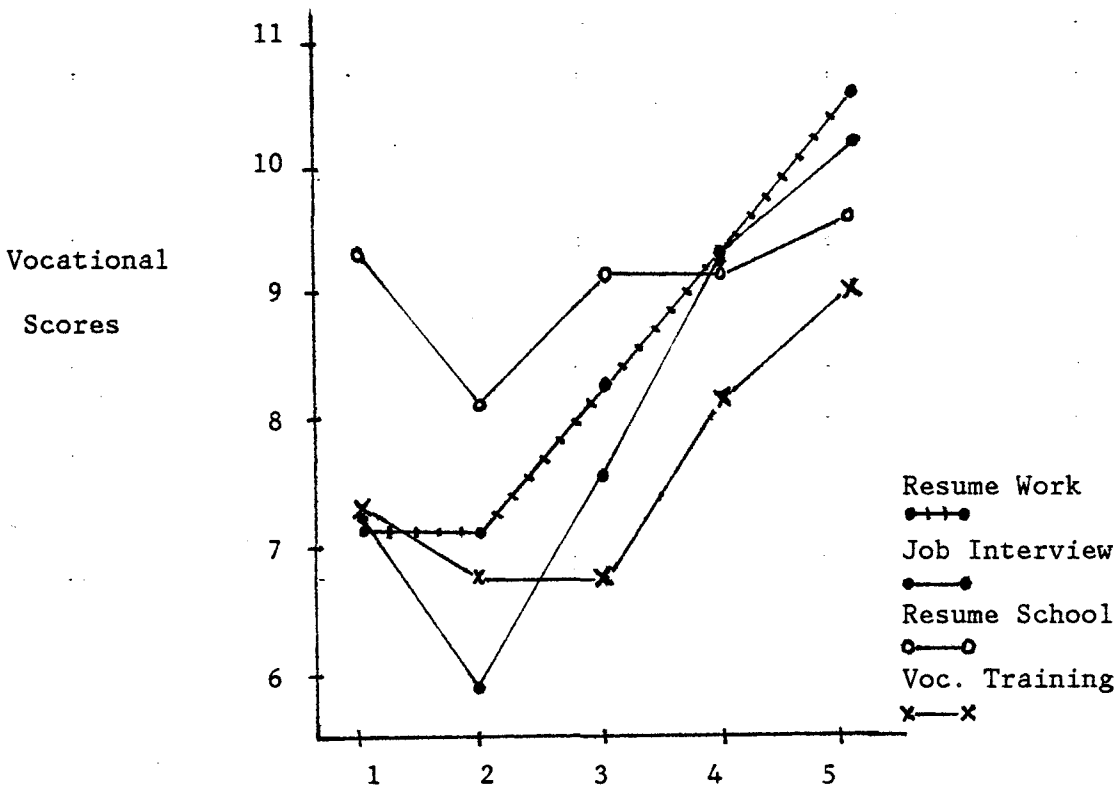
These results indicate that there is a significant increasing spread or range of avoidance scores as one moves from the low to high vocational demand group. The detection of an increasing pattern of approach-avoidance scores supports the hypothesis concerning increasing vocational anxiety for the high demand group but does not support the proposed negative quadratic relationship for the intermediate vocational demand group. Also, it appears from the trend of the group means (Table 2) that the control group is stable across time after the second testing period. This control group characteristic and the significant interaction of groups with commitment levels, $F$ (8, 168) = 6.35, $p < .01$, will be clarified by a trend analysis to be presented later.

S-R Inventory by Commitment Levels Interaction. The other significant interaction in Table 1 involves the four levels of the self-report measure and the days of testing, $F$ (12, 168) = 5.13, $p < .01$. Figure 2 graphically represents this interaction for avoidance scores collapsed across groups.

The graph in Figure 2 demonstrates increasing anxiety scores across time for three of the four imagined career situations with the

Figure 2

Vocational Approach-Avoidance Scores for Imagined Career Development Situations



school choice showing the least range of fluctuation with time. Means and standard deviations of the four career situations are presented in Table 4. A simple effects analysis was performed (Table 5) to determine at which points along the repeated measure commitment factor the four subtests were significantly discriminating the avoidance motive. During the first, $F$ (3, 168) = 5.94, $p < .01$, second, $F$ (3, 168) = 4.69, $p < .01$, and third $F$ (3, 168) = 5.20, $p < .01$, vocational commitment periods at least two of the four imagined career situations produced significantly different avoidance scores. Following the third testing, the S-R Inventory of Anxiousness modified for career development situations did not produce discriminable scores on the four subtests, since the fourth, $F$ (3, 168) = 1.84, $p < .25$, and fifth, $F$ (3, 168) = 3.11, $p < .10$, commitment periods were not significant. Within a given subtest across commitment days, only the imagined school situation, $F$ (4, 168) = 2.48, $p < .25$, failed to produce significantly different scores across time. These data reflect the individual responses of the four imagined career situations on the S-R Inventory of Anxiousness to the experimental conditions of vocational stress over time.

Trend Analysis of the Group by Commitment Level Interaction. Since the hypotheses included predictions regarding trends for the avoidance scores for the three groups over time, a trend analysis was completed on total avoidance scores for the S-R Inventory of Anxiousness. These results are summarized in Table 6.

Reference to Figure 1 and the significant commitment factor, $F$ (4, 168) = 20.48, $p < .01$, in Table 6 indicates that the trend of the repeated

Table 4

Means and Standard Deviations of Approach-Avoidance Difference Scores for Imagined Career Development Situations

| Treatment Period | | Imagined Career Situations | | | |
|---|---|---|---|---|---|
| | | Interview | School | Training | Work |
| Day 1 | M | 7.27 | 9.31 | 7.33 | 7.20 |
| | SD | 4.72 | 6.27 | 5.10 | 5.11 |
| Day 3/4 | M | 5.91 | 8.16 | 6.78 | 7.16 |
| | SD | 3.60 | 5.71 | 3.62 | 3.74 |
| Day 6/7 | M | 7.71 | 9.07 | 6.76 | 8.33 |
| | SD | 4.21 | 5.60 | 3.58 | 4.22 |
| Day 9/10 | M | 9.24 | 9.18 | 8.07 | 9.27 |
| | SD | 4.13 | 5.22 | 3.41 | 4.42 |
| Day 12/13 | M | 10.27 | 9.69 | 9.00 | 10.76 |
| | SD | 3.97 | 5.46 | 4.26 | 4.79 |

Table 5

Analysis of Variance of Approach-Avoidance Scores for Simple Effects of S-R Inventory by Commitment Level Interaction

| Source | Sum of Squares | df | Mean Squares | F |
|---|---|---|---|---|
| S-R Inventory (B) | | | | |
| Commitment Level (C) | | | | |
| Between Subjects | | | | |
| B at C1 | 147.50 | 3 | 49.17 | 5.94* |
| B at C2 | 116.68 | 3 | 39.89 | 4.69* |
| B at C3 | 129.40 | 3 | 43.13 | 5.20* |
| B at C4 | 45.80 | 3 | 15.26 | 1.84 |
| B at C5 | 77.40 | 3 | 28.80 | 3.11 |
| Pooled Error | | | 8.28 | |
| Within Subtests | | | | |
| C at B1 (Interview) | 523.75 | 4 | 130.93 | 22.40* |
| C at B2 (School) | 57.98 | 4 | 14.49 | 2.48 |
| C at B3 (Training) | 163.67 | 4 | 40.92 | 7.00* |
| C at B4 (Work) | 413.63 | 4 | 103.41 | 17.69* |
| BC | 235.78 | 12 | 19.65 | 5.13* |
| Pooled Error | | | 5.84 | |

* $p < .01$

Table 6

Trend Analysis for Approach-Avoidance Difference Scores

| Source | Sum of Squares | df | Mean Squares | F |
|---|---|---|---|---|
| Vocational Demand (A) | 413.59 | 2 | 206.79 | 1.90 |
| Subject Within Group Error | 4,572.65 | 42 | 108.87 | |
| Commitment Level (C) | 373.32 | 4 | 93.33 | 20.48** |
| C-Linear | 287.28 | 1 | 287.28 | 27.48** |
| C-Quadratic | 60.82 | 1 | 60.81 | 14.69** |
| C-Cubic | 21.22 | 1 | 21.22 | 9.13** |
| Difference in Linear Trend | 189.51 | 2 | 94.75 | 9.13** |
| Difference in Quadratic Trend | 25.51 | 2 | 12.75 | 3.08 |
| Difference in Cubic Trend | 13.19 | 2 | 6.59 | 2.84 |
| C x Subject Within Group | 765.54 | 168 | 4.56 | |
| C x Subjects Within Group (Linear) | 439.12 | 42 | 10.46 | |
| C x Subjects Within Group (Quadratic) | 173.89 | 42 | 4.14 | |
| C x Subjects Within Group (Cubic) | 97.58 | 42 | 2.32 | |

* $p < .05$
** $p < .01$

measure, the vocational avoidance score, is primarily accounted for by a linear component, $F$ (1, 168) = 27.48, $p < .01$, (with 76.9 percent of the variance accounted for by the linear component of the day of testing factor). Similarly, the significant group by commitment level interaction is accounted for by the significant difference in linear trend, $F$ (2, 42) = 9.13, $p < .01$, among the three groups with the high vocational demand category having the greatest linear rise (a 28.13 to 48.00 avoidance score range) in vocational anxiety over the days of testing as seen in the mean values given in Table 2. This contrasts with the low vocational demand group range of 22.20 to 32.13 and an intermediate demand group range of 29.67 to 41.80. These results support the trend hypotheses for the control and high vocational demand groups in that the curves are represented by a linear function, constant for the control group and positively increasing for the high demand group. The hypothesis regarding the intermediate vocational demand group was not confirmed since the difference in quadratic trend was insignificant, $F$ (2, 42) = 3.08, $p < .50$.

Mood Disturbance Score Analysis

The second dependent measure was the sum of the six factor scores from the Profile of Mood States (POMS) test (McNair, Lorr, & Droppleman, 1971). These authors recommend a total mood disturbance estimate when a global estimate of affective state is desirable. First, the total mood disturbance scores were correlated with the total vocational anxiety scores from the S-R Inventory of Anxiousness giving a product-moment

correlation coefficient, $r$ (43) = .42, $p < .01$, establishing a significant association between the two dependent measures, but one accounting for only 17.6 percent of the variance among anxiety scores. Despite the significant correlation between these two measures of affective disturbance during the vocational demand period, it was deemed instructive to perform a repeated measures analysis of variance for the mood scores to compare the results and score trends with those obtained for the first dependent measure tailored specifically for vocational stress. Table 7 gives the results of the repeated measures analysis.

Figure 3 illustrates the mean values (Table 8) for the total mood scores across time for the treatment groups. As with the S-R Inventory of Anxiousness, a significant main effect for commitment level, $F$ (4, 168) = 7.61, $p < .01$, and a significant group commitment level interaction, $F$ (8, 168) = 2.41, $p < .05$, was found. It appears from Figure 3 that for the medium and high vocational demand groups, there was a slow increase in overall mood disturbance across time; and, for the low demand group, a decreasing then increasing trend in mood scores was observed (see Table 8).

Given the significant interaction between groups and commitment levels on the mood disturbance scores, a simple effects analysis was conducted to determine at what points the mood scores of the groups significantly differed. Table 9 gives the simple effects analysis of mood scores.

Table 9 demonstrates that the total mood disturbance scores do not differ significantly across groups at any level of the five commitment

Table 7

Repeated Measures Analysis of Variance for
Total Mood Disturbance Scores
on the POMS

| Source | Sum of Squares | df | Mean Squares | F |
|---|---|---|---|---|
| Vocational Demand (A) | 583.93 | 2 | 291.96 | 1.44 |
| Subject Within Group Error | 8,517.09 | 42 | 202.79 | |
| Commitment Level (B) | 280.23 | 4 | 70.06 | 7.61** |
| AB | 177.48 | 8 | 22.18 | 2.41* |
| B x Subject Within Group | 1,546.37 | 168 | 9.20 | |

* $p < .05$
** $p < .01$

Figure 3

Group POMS Mood Disturbance Scores Across Vocational Commitment Levels

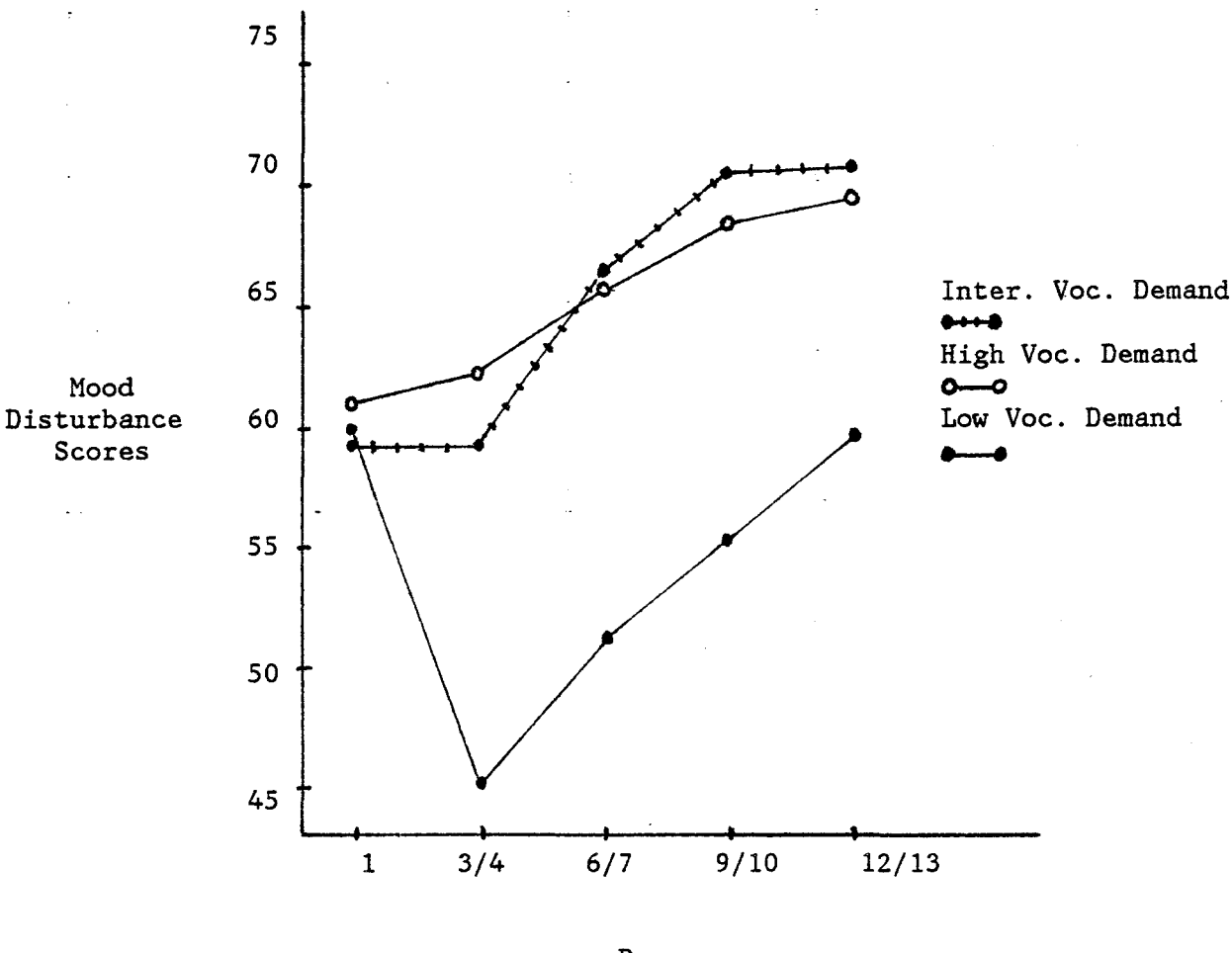


Table 8

Mean POMS Mood Disturbance Scores for Groups

| Treatment Period | | Vocational Demand Group | | |
|---|---|---|---|---|
| | | Low | Medium | High |
| Day 1 | M | 1* 60.00 | 3 59.67 | 61.67 |
| | SD | 24.76 | 21.77 | 20.87 |
| Day 3/4 | M | 1,2,3 45.60 | 4 59.46 | 63.80 |
| | SD | 22.89 | 23.91 | 20.14 |
| Day 6/7 | M | 52.47 | 67.53 | 66.33 |
| | SD | 25.32 | 20.89 | 20.51 |
| Day 9/10 | M | 3 56.27 | 3,4 70.73 | 67.20 |
| | SD | 22.35 | 20.37 | 20.38 |
| Day 12/13 | M | 2 59.67 | 3,4 70.73 | 68.93 |
| | SD | 22.42 | 20.78 | 20.03 |

* Like superscripts indicate a significant mean difference between pairs at the .05 level using Tukey's Test

Table 9

Analysis of Variance of POMS Mood Disturbance Scores for Simple Effects of the Group by Commitment Level Interaction

| Source | Sum of Squares | df | Mean Squares | F |
|---|---|---|---|---|
| Vocational Demand (A) | | | | |
| Commitment Level (B) | | | | |
| Between Subjects | | | | |
| A at B1 | 34.45 | 2 | 17.23 | 0.04 |
| A at B2 | 2,534.18 | 2 | 1,267.09 | 2.64 |
| A at B3 | 2,103.64 | 2 | 1,051.82 | 2.19 |
| A at B4 | 1,706.54 | 2 | 853.27 | 1.78 |
| A at B5 | 1,057.90 | 2 | 528.95 | 1.10 |
| Within Cell | | | | |
| Pooled Error | 20,126.82 | 42 | 479.21 | |
| Within Subjects | | | | |
| B at A1 | 2,144.40 | 4 | 536.10 | 5.82* |
| B at A2 | 3,820.49 | 4 | 955.12 | 10.38* |
| B at A3 | 493.80 | 4 | 123.45 | 1.34 |
| AB | 1,774.78 | 8 | 221.85 | 2.41* |
| B x Subjects | | | | |
| Within Group | 15,463.74 | 168 | 92.05 | |

* $p < .01$

periods. However, the mood scores do show a significant variation across commitment days within the low, $F$ (4, 168) = 5.82, $p < .01$, and intermediate, $F$ (4, 168) = 10.38, $p < .01$, vocational demand groups but not across the high demand group, $F$ (4. 168) = 1.34, $p < .50$. Possibly, the POMS dependent measure of generalized mood disturbance is not as sensitive to the fluctuations in vocational anxiety as observed in the analysis of the modified S-R Inventory of Anxiousness scores across time.

Since the low and intermediate vocational demand groups produced significant variation in mood disturbance scores across the five commitment levels, it was instructive to determine which pairs of means accounted for this significance. Table 8 gives significant pairwise comparisons on mood disturbance scores for the three treatment groups.

From Table 8 it can be seen that the sharp decrease in mood disturbance scores at the post-instructional level (Day 3/4) accounted for all significant pairwise comparisons within the low vocational stress group. Day 1 was significantly different from Day 3/4, $F$ (5, 168) = 3.17, $p < .01$, and Day 3/4 was significantly different from Day 9/10, $F$ (5, 168) = 2.60, $p < .05$, and Day 12/13, $F$ (5, 168) = 2.51, $p < .05$. What is indicated is a significant rise in overall affective disturbance from Day 3/4 to the two post-interview time periods. For the intermediate demand group, both the post-interview commitment levels were significantly greater in mood disturbance scores when compared to the initial and post-instuctional levels. That is, Day 1 was significantly different from Day 9/10, $F$ (5, 168) = 2.75, $p < .05$, and Day 12/13, $F$ (5, 168) = 2.75, $p < .05$. Similarly, Day 3/4 differed significantly from

Day 9/10, $F$ (5, 168) = 2.71, $p < .05$, and Day 12/13, $F$ (5, 168) = 2.71, $p < .05$. The high group showed no significant variation in mood disturbance scores across time.

Trend Analysis of Mood Disturbance Scores. In order to define the nature of these graphically represented fluctuations in mood disturbance scores, a trend analysis was performed. Table 10 gives the results of this analysis.

As anticipated from Figure 3, Table 10 shows a significant linear, $F$ (1, 168) = 12.60, $p < .01$, and cubic trend, $F$ (1, 168) = 7.22, $p < .05$, for total mood scores across time. The significant cubic component is related to the decreasing, increasing, then leveling off of the mood scores for the low vocational demand group and to some degree the medium vocational demand group. In addition, the significant group-commitment level interaction, $F$ (8, 168) = 2.41, $p < .05$, is accounted for primarily by a significant difference in quadratic trend, $F$ (2, 42) = 5.41, $p < .01$, among the three groups across time. This finding demonstrates a difference in trend types between the two dependent measures. Each appears to have a clearly significant positive linear trend concerning the combined anxiety or mood scores as measured across time, but the interaction term is best accounted for by a difference in linear trends when the S-R Inventory is the dependent measure and by a difference in quadratic trends when the POMS is used as the dependent measure.

Although the POMS and S-R Inventory mean anxiety scores demonstrate similar graphic trends, the simple effects and trend analysis

Table 10

Trend Analysis of POMS Mood Disturbance Scores

| Source | Sum of Squares | df | Mean Squares | F |
|---|---|---|---|---|
| Vocational Demand (A) | 583.93 | 2 | 291.96 | 1.44 |
| Subject Within Group Error | 8,517.09 | 42 | 202.79 | |
| Commitment Level (B) | 280.23 | 4 | 70.06 | 7.61** |
| B-Linear | 188.09 | 1 | 188.09 | 12.60** |
| B-Quadratic | 23.41 | 1 | 23.41 | 2.73 |
| B-Cubic | 53.36 | 1 | 53.36 | 7.22* |
| AB | 177.48 | 8 | 22.18 | 2.41* |
| Difference in Linear Trend | 42.49 | 2 | 21.24 | 1.42 |
| Difference in Quadratic Trend | 92.79 | 2 | 46.39 | 5.41** |
| Difference in Cubic Trend | 36.81 | 2 | 18.41 | 2.49 |
| B x Subjects Within Group | 1,546.37 | 168 | 9.20 | |
| B x Subjects Within Group (Linear) | 627.21 | 42 | 14.93 | |
| B x Subjects Within Group (Quadratic) | 360.17 | 42 | 8.58 | |
| B x Subjects Within Group (Cubic) | 310.25 | 42 | 7.39 | |

* $p < .05$
** $p < .01$

revealed important differences concerning the value of the control group for POMS scores. The gradual rise in control group mood disturbance scores from Day 3/4 to Day 12/13 (from 45.60 to 59.67 factor units) prevented the establishing of a constant baseline for comparison. Thus, both the treatment groups and the control group demonstrated increasing mood disturbance and the curves of the factor scores did not significantly diverge across time, unlike the results obtained for the S-R Inventory.

Analysis of Tension-Anxiety and Fatigue Factor Scores on the POMS

Of special interest were two of the factor scales on the POMS, the Tension-Anxiety scale (T) and the Fatigue-Inertia scale (F). The T-scale is defined by adjectives descriptive of heightened musculoskeletal tension (e.g., tense, shaky, restless, on edge, uneasy). The F-scale represents a mood of weariness, low energy, and lack of inertia (e.g., worn-out, listless, sluggish, weary, blushed). Combining these two scales appeared useful since prior reported literature suggested that the alcoholic's self-report of anxiety or affective agitation is usually made manifest in terms of frequent somatic-correlated complaints, as opposed to more "psychologically-minded" references to inner emotional turmoil. Therefore, the scores from these scales were combined and a repeated measures analysis of variance was completed across vocational commitment levels to observe for group and trend differences. The analysis is presented in Table 11.

Table 11 shows a significant main effect for groups, $F$ (2, 42) = 4.39, $p < .02$, and commitment levels, $F$ (4, 168) = 24.94, $p < .01$, and a

Table 11

Repeated Measures Analysis of Variance for Combined Tension-Anxiety and Fatigue Factor Scores from the POMS

| Source | Sum of Squares | df | Mean Squares | F |
|---|---|---|---|---|
| Vocational Demand (A) | 256.41 | 2 | 128.21 | 4.39* |
| Subject Within Group Error | 1,227.57 | 42 | 29.23 | |
| Commitment Level (B) | 178.58 | 4 | 44.65 | 24.94** |
| A x B | 55.09 | 8 | 6.89 | 3.85** |
| B x Subject Within Group | 300.76 | 168 | 1.79 | |

* $p < .02$

** $p < .01$

significant interaction, $F$ (8, 168) = 3.85, $p < .01$. These results are presented graphically in Figure 4. In view of the significant interaction term, a simple effects analysis was conducted and is presented in Table 12.

Table 12 demonstrates a significant difference between groups on Tension-Anxiety and Fatigue scores at the post-instructional, $F$ (2, 42) = 4.04, $p < .05$, pre-interview, $F$ (2, 42) = 8.43, $p < .01$, and initial post-interview, $F$ (2, 42) = 5.73, $p < .05$, vocational commitment levels. In addition, within each treatment group a significant variation in scores was obtained across vocational commitment levels. Means, standard deviations and pairwise comparisons of Tension-Anxiety and Fatigue factor scores were obtained and are presented in Table 13.

From Table 13 and Figure 4, it is evident that the intermediate and high vocational demand groups were nearly identical in terms of the Tension-Anxiety and Fatigue factor scores as measured across time. The following pairwise comparisons were significantly different: the low and intermediate, $t$ (42) = 2.12, $p < .05$, and the low and high, $t$ (42) = 2.15, $p < .05$, demand groups at Day 3/4; the low and intermediate, $t$ (42) = 2.31, $p < .05$, and the low and high $t$ (42) = 2.33, $p < .05$, groups at Day 6/7; and the low and intermediate, $t$ (42) = 2.37, $p < .05$, and the low and high, $t$ (42) = 2.39, $p < .05$, groups at Day 9/10. Thus, the low demand group demonstrated significantly lower Tension-Anxiety and Fatigue scores following the instructional period and continuing through the pre-interview and initial post-interview periods but did not differ significantly from the intermediate and high stress groups at the final testing period.

Figure 4

POMS Tension-Anxiety and Fatigue Factor Scores Across Vocational Commitment Levels

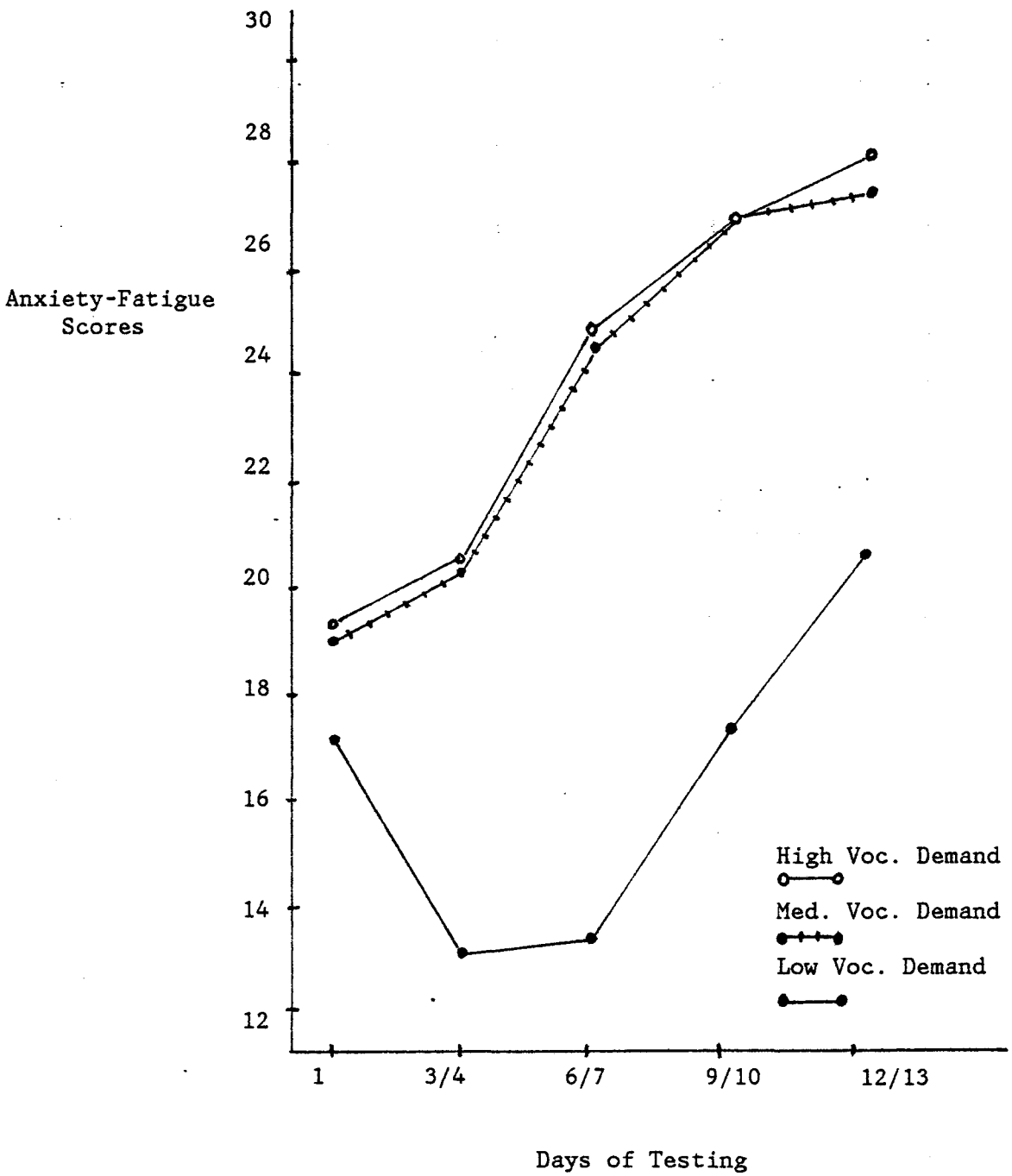


Table 12

Simple Effects Analysis for POMS Tension-Anxiety and Fatigue Factor Scores

| Source | Sum of Squares | df | Mean Squares | F |
|---|---|---|---|---|
| Vocational Demand (A) | | | | |
| Commitment Level (B) | | | | |
| Between Subjects | | | | |
| A at B1 | 15.52 | 2 | 7.76 | 0.11 |
| A at B2 | 587.92 | 2 | 293.96 | 4.04* |
| A at B3 | 1,226.98 | 2 | 613.49 | 8.43** |
| A at B4 | 834.18 | 2 | 417.09 | 5.73* |
| A at B5 | 450.54 | 2 | 225.27 | 3.09 |
| Within All | | | | |
| Pooled Error | 3,056.67 | 42 | 72.78 | |
| Within Subjects | | | | |
| B at A1 | 628.90 | 4 | 157.23 | 8.78** |
| B at A2 | 831.69 | 4 | 207.92 | 11.62** |
| B at A3 | 876.20 | 4 | 219.05 | 12.24** |
| AB | 550.99 | 8 | 68.87 | 3.85** |
| B x Subjects | | | | |
| Within Groups | 3,007.60 | 168 | 17.90 | |

* $p < .05$

** $p < .01$

Table 13

Mean POMS Tension-Anxiety and Fatigue Factor Scores

| Treatment Period | | Vocational Demand Group Low | Medium | High |
|---|---|---|---|---|
| Day 1 | M | 17.80 | 18.93 | 19.13 |
| | SD | 8.21 | 7.46 | 7.69 |
| | | 1,2* | 1 | 2 |
| Day 3/4 | M | 13.33 | 20.93 | 21.07 |
| | SD | 10.75 | 8.94 | 8.95 |
| | | 3,4 | 3 | 4 |
| Day 6/7 | M | 13.73 | 24.20 | 25.33 |
| | SD | 8.86 | 8.61 | 8.33 |
| | | 5,6 | 5 | 6 |
| Day 9/10 | M | 17.67 | 26.80 | 26.80 |
| | SD | 9.32 | 7.77 | 8.15 |
| Day 12/13 | M | 21.13 | 27.60 | 28.07 |
| | SD | 8.26 | 7.67 | 8.41 |

* Like superscripts indicate a significant mean difference between pairs at the .05 level using Tukey's Test.

Trend Analysis of Tension-Anxiety and Fatigue Factor Scores. As with the previous dependent measures, a trend analysis was performed on the Tension-Anxiety and Fatigue factor scores from the POMS to determine the nature of the fluctuation in these scores across time. The results are given in Table 14.

Table 14 shows a significant increasing linear trend, $F$ (1, 42) = 57.63, $p < .01$, for Tension-Anxiety and Fatigue factor scores as expected from inspection of the graph in Figure 4. The marginally significant cubic component, $F$ (1, 42) = 4.65, $p < .05$, is a function of collapsing scores across the three groups. The interaction of group scores with commitment levels is accounted for by the significant difference in quadratic trend, $F$ (2, 168) = 9.88, $p < .01$. These results are very similar to those obtained for overall mood disturbance scores and indicate for the intermediate and high vocational demand groups a linearly increasing self-reported frequency of somatic indicators of anxiety across the two week time period of the study. As with the overall POMS mood disturbance scores the Tension-Anxiety and Fatigue Factor scores for the control group were unstable across time; and, therefore, the comparison strength of this low vocational demand group was reduced.

Staff Questionnaire Analysis

The staff ratings of vocational anxiety and estimates of program participation and cooperation were analyzed by a repeated measures analysis of variance. No significant variation was found between groups, $F$ (1, 3) = 2.18, $p < .23$, across commitment levels, $F$ (2, 6) = .43, $p < .67$,

Table 14

Trend Analysis of POMS Tension-Anxiety and Fatigue Factor Scores

| Source | Sum of Squares | df | Mean Squares | F |
|---|---|---|---|---|
| Vocational Demand (A) | 2,564.11 | 2 | 1,282.06 | 4.39* |
| Subjects Within Group Error | 12,275.73 | 42 | 292.28 | |
| Commitment Level (B) | 1,785.80 | 4 | 446.45 | 24.94** |
| B-Linear | 1,670.42 | 1 | 1,670.42 | 57.63** |
| B-Quadratic | 53.16 | 1 | 53.16 | 2.78 |
| B-Cubic | 59.77 | 1 | 59.77 | 4.65* |
| B-Quartic | 2.46 | 1 | 2.46 | 0.23 |
| AB | 550.99 | 8 | 68.87 | 3.85** |
| Difference in Linear Trend | 153.88 | 2 | 76.04 | 2.65 |
| Difference in Quadratic Trend | 378.47 | 2 | 189.23 | 9.88** |
| Difference in Cubic Trend | 6.63 | 2 | 3.32 | 0.26 |
| Differenc ein Quartic Trend | 12.02 | 2 | 6.01 | 0.57 |
| B x Subjects Within Group | 3,007.60 | 168 | 17.90 | |
| B x Subjects Within Group (Linear) | 1,217.40 | 42 | 28.99 | |
| B x Subjects Within Group (Quadratic) | 804.45 | 42 | 19.15 | |
| B x Subjects Within Group (Cubic) | 540.40 | 42 | 12.87 | |
| B x Subjects Within Group (Quartic) | 445.35 | 42 | 10.60 | |

* $p < .05$
** $P < .01$

(time), or between the five types of questions asked of clients, $\underline{F}$ (4, 12) = .75, $\underline{p} < .57$. In addition, no interactions were observed and a trend analysis did not demonstrate any significant trend in the scores across time or between treatment groups.

# CHAPTER V

## DISCUSSION

The purpose of this investigation was to document changes over time of career-associated anxiety and relate these changes to the demands associated with a residential, high-risk chronic alcoholic treatment program that emphasizes vocational re-development. The avoidance reactions to specific career development situations were examined by use of a modified version of the S-R Inventory of Anxiousness (Endler, Hunt, & Rosenstein, 1962). In addition, overall mood state was monitored by use of the Profile of Mood States (McNair, Lorr, & Droppleman, 1971). An earlier pilot study (Appendix A) had demonstrated significantly greater vocationally-cued career development anxiety in newly admitted residential alcoholics as compared to those clients on an extended care segment of the program that focuses on the continuing pursuit of vocational plans and goals set down in the first 30 days of the program. This study extends the single instance measure of vocational anxiety in the pilot study to a repeated measure of anxiety states on the intermediate care program (30-day duration) over a two week duration.

There is evidence from controlled drinking research that anxiety states, based on self-report measures, tend to increase prior to the onset of drinking behavior (Nathan, 1970; Steffen, Nathan, & Taylor, 1974). The relating of these anxiety state changes to real-world, re-employment demands was attempted by a trend analysis. The observed trends in anxiety

states and avoidance reactions are self-reported distress patterns which presumably accumulate in intensity with time on the program as the alcoholic client is progressively made more aware of vocational rehabilitation alternatives and confronted with increasing demands associated with a commitment to seeking re-employment. In other words, as re-employment task demands became known, a concomitant increase in anxiety was observed although some differences from the hypothesized trends were found and will be examined.

Review of Findings from the S-R Inventory of Anxiousness

The results of the analysis of variance and trend analysis on avoidance scores from the S-R Intentory of Anxiousness confirm only in part the hypotheses put forth. As hypothesized for the control group of subjects under least vocational demand, the trend of the avoidance scores across the five commitment levels did not vary significantly from the second testing through the fifth testing session (final post-interview level) and represents essentially a linear trend without a significant positive or negative slope and without significant variation across time. The significant decrease in avoidance scores occurring from Day 1 to Day 3/4 may be the result of the initial elevated self-report of anxiety that is a function of the intake experience and which is seen to dissipate by the second testing period. An alternative explanation of this rapid and significant drop in avoidance scores followed by no significant changes for the rest of the experiment may be the non-threatening nature of the vocational instructional set given to the control group. It appears that

the control group is sufficiently stable to be of use as a baseline for comparing the other two groups.

The intermediate vocational demand group did not manifest a negative quadratic trend as hypothesized, but rather demonstrated a gradual increasing, essentially linear rise in vocational avoidance scores. Again, as in the control group, a drop in scores from Day 1 to Day 3/4 was noted but was not found to be significant. For the high vocational demand group a confirmation of the hypothesis concerning an increasing positive linear trend was observed.

One method for clarifying the observed trends is to contrast the three curves at the various vocational commitment levels. Post hoc analysis reveals that the three groups did not report significantly different levels of self-reported vocational anxiety during the first three testing periods; that is, at intake, post-instructional, and pre-interview commitment levels. Only following the vocational interview on day eight did the groups diverge significantly. On Day 9/10 (one/two days following the interview) the control group was significantly less anxious in responding to imagined career development situations than either the intermediate or high vocational demand groups who were not measurably different from each other. This same condition persisted into the fifth commitment level (Day 12/13) indicating that the intermediate and high demand groups were not distinguishable, although the trend was for the high demand group to exceed the intermediate group at the second through fifth commitment levels.

Two ways of interpreting the observed trends in vocation-specific anxiety across groups, given in the statistical summary of Table 6, are discussed below. Clearly, there is group comparability at intake and through the first three testing occasions which span a one week time period. One could speculate that the significant divergence of scores at Day 9/10 and continuing through Day 12/13 is a product of the vocational interview session alone, which occurred at Day 8. The other alternative is the presence of accumulative effects of the initial instructions and program participation, leading to a combination of these events (and the interview) becoming stressful over time. This last case seems the more appropriate explanation since though there are no significant differences across groups within the first three commitment levels, it is evident from the data and the graph of mean avoidance scores that a divergent trend is developing at the second commitment level (Day 3/4) and is continued for the next ten days.

This finding is useful in demonstrating the relative impact of vocational stressors on employment-keyed anxiety trends but does not provide quantitative information on the contributions made to vocational anxiety that might be related to such factors as amount of knowledge about vocational alternatives, prior treatment effects, the impact of programmatic, required career choices, and adjustment to other aspects of the residential program. It is likely, however, that the scheduled vocational interview (occurring between commitment levels three and four) had a measurable contribution to increasing the divergent characteristic of the group trends given the stable characteristic of the control group

over the second through the fifth commitment period. The required vocational choice in the high demand group contributed significantly to accruing self-reported stress but did not do so to an extent that made this group distinguishable from the intermediate vocational demand group. What is important about these data is the identification and description of an increasing trend in alcoholic vocational avoidance behavior that is in part related to specific vocational stressors. From this study, it is not possible to weigh the effect of this increase in anxiety on subsequent relapse behavior or degree of later vocational success since the subjects were not followed beyond the two-week time period of the investigation. To the extent that this is an applied, exploratory survey, it should be noted that interpretations of observed trends would require cross-validation before being clearly accepted. In partial defense of the current findings, however, the time interval within the repeated measures is quite short and decreases the plausibility of effects from extraneous, non-treatment relevant effects.

The group differences, then, support the presence of induced vocational demands that elevate self-reported anxiety in newly admitted residential alcoholics. The control group shows that the anxiety can be mitigated by withholding information about program vocational requirements. It may be that merely cueing the alcoholic's attention to future vocationally relevant tasks (provide specific facts) raises state anxiety. This finding is similar to those noted by Tomsovic (1974) who argued that binge drinkers tend to begin a drinking episode in response to some specific social obligation that is a focused issue in the

individual's life at the point of relapse. Further, the information provided about future rehabilitation tasks may trigger cognitive self-perceptions which are an immediate source of fear (Ellis, 1971; Marks & Lader, 1973).

Having established vocationally-cued avoidance behaviors in alcoholics participating in a work-rehabilitation program, it would be of future interest and potentially valuable from a treatment standpoint to use scores from the S-R Inventory of Anxiousness (vocationally modified) to predict degree of risk for participation in vocational programming in intermediate care clients who are within the first two weeks of the program. Those manifesting greater scores could be traced across time and compared to those men demonstrating low avoidance scores. If the scores were shown to be predictive of future chance of success in the vocational re-development aspect of the program, then certain alterations in the treatment regimen for the high risk group could be attempted.

In another sense, the trend data of this study confirm across time the results of the pilot study (Appendix A) in which a single measure in time demonstrated that intermediate care clients (less than 30 days on the program) were significantly more vocationally anxious than those men who were on the extended care program and well into their vocational rehabilitation plan. The unknown selection factors that contribute to a client at least beginning to enact re-employment seeking behaviors may be partially detectable through the use of the S-R Inventory of Anxiousness early in the treatment process. It may be that a significant selection factor is the client's degree of negative self-perception since this

cognitive state has been shown to be related to alcoholic relapse (Gnepp, 1976; Kilpatrick, 1976). The theoretical model utilized here comes from Sarason's (1975) work which has suggested that self-preoccupation may interfere with attention to task, the processing of available data from the environment, and the selection of appropriate coping responses. Anxiety, then, as measured by somatic factors, arises out of the individual's unique interpretation of life events.

A confirming, secondary sign of increasing anxiety across time was observed in the significant interaction of commitment levels with the four levels of the S-R Inventory of Anxiousness (see Figure 2). It can be seen that at the same time the overall group avoidance scores were comparable, that is, during the first three commitment levels, the four imagined career-development situations (e.g., Going back to work; Entering a job training program) of the test were producing discriminable scores. Thus, clients were initially reacting differentially to the type of vocational situation. It was only after the interview (level 4) that the clients reacted similarly to all four career-related situations. This is indicative of a heightened anxiety response that is primarily demonstrated by the increasing avoidance scores for the intermediate and high vocational demand groups. This decrease in discrimination among the four situations can be taken as a sign of decreasing cognitive attention to detail as the anxiety response presumably becomes more global in nature. This process is similar to the one described by Meichenbaum (1972) regarding cognitive alterations in response to stress. This evidence provides further argument for designing treatment programs

geared toward teaching the alcoholic more effective coping behaviors within the context of specific demands (Litman, Eiser, & Rawson, 1977) as there appears to be a sequential rise in anxiety in the chronic alcoholic as he meets the accumulating demands of vocational readjustment.

Alternatively, the lack of significant differences among the four types of career situations at commitment levels four and five could be a statistical artifact. That is, as the anxiety scores increase they may reach the ceiling of measurement for the S-R Inventory of Anxiousness, thus collapsing group means at the testing occasions.

Profile of Mood States Trends

There is a striking similarity in the graphical representation of the group mean scores for the S-R Inventory of Anxiousness and the POMS, but statistically important differences were found and require interpretation. First, across groups on the POMS no significant variation in mean mood disturbance scores was found at any of the five vocational commitment levels. This contrasts with the S-R Inventory results which showed significant variation in mean vocational avoidance scores across groups for the fourth and fifth commitment levels. What possibly accounts for this is the fact that the more global measure of anxiety or affective disruption in the POMS screens out the situation specific, somatically-correlated anxiety arousal found on the S-R Inventory measurements at the last two commitment levels. This would make sense in light of the earlier work that suggested anxiety in alcoholics is best detected by somatic cues (Litman, 1974; Woodruff, Guze, & Clayton, 1972). It should be emphasized

that the observed trends in the S-R Inventory are a function of chronic alcoholics responding to a 14-item questionnaire that is heavily weighted in terms of somatic disturbance. Thus, in this study we see increasing agreement with bodily disturbance statements on the S-R Inventory for the intermediate and high vocational demand groups while the more global statements on the POMS cueing generalized anxiety, tension, depression, and confusion are not clearly differentiated by the groups across time. Further, this finding appears to confirm the advantages argued for by Endler and Hunt (1962) in the development of the S-R Inventory of Anxiousness because the component of variance attributable to cued situations seems to play the key role in producing differential score patterns on the two instruments.

Next, significant within-group variations in mood disturbance across time are present only in the control and intermediate demand groups as measured by the POMS. The control group showed the same significant drop and rise in mood disturbance seen in the S-R Inventory over the first three testing sessions (Day 1 to Day 6/7) giving further indication that the intake process is an immediately, relatively stressful time compared to the next few days of the program. Alternatively, the gradual rise in the POMS and S-R Inventory scores of the control group over the two week duration of the study could be demonstrating the accumulation of stress or anxiety as a function of uncontrolled internal and external stressors. A review of the significant pairwise comparisons in Table 8 and the trend analysis (Table 10) suggests a more definitive positive quadratic trend for the control group when evaluated by the POMS. This can be contrasted

with the more linear trend describing the mean scores from the S-R Inventory which is situation specific to vocational stressors. This suggests that, in part, these two measures are tapping two different, though only subtly separate components of anxiety arousal in chronic alcoholics. The quadratic trend of the POMS scores fits an overall pattern of alcoholic tension shifts (in response to a minimally stressful, initial program commitment) that is very briefly mood stabilizing followed by a definite increase in global affective disturbance over the first two weeks of program exposure. The linear function of the control group S-R Inventory scores, however, demonstrates (when contrasted with the vocationally stressed groups) a situation specific, relatively stable baseline trend that allows for the significant divergence of the group curves. This outcome follows from the fact that the career-development demands stimulated and measured by the structure of the S-R Inventory are screened from view when taking a more global measure of affective disturbance as in the case with the POMS. The cognitive model seems to apply effectively here in terms of describing situation-cued, self-perceived threat that is identifiable from state measures of anxiety, an observation similar to the conclusions of Kilpatrick (1976) and Gnepp (1976) on the role of cognitive mediators in the alcoholic's reaction and adaptation to stress.

Tension-Anxiety and Fatigue Factor Scores

Having found confirming evidence for approaching the detection of chronic alcoholic vocational anxiety trends by using a situationally-

cued, somatically-correlated instrument, it was reasoned that those subtests of the POMS that possess somatically-linked items might better detect the anxiety fluctuations specific to the vocational stress intervention. A content review of two of the factor scales on the POMS, Tension-Anxiety and Fatigue-Inertia, revealed many items that could be seen as having a significant somatic component. Significant separation was achieved between the control group and the treatment groups but the significant divergent trend in avoidance scores seen with the S-R Inventory of Anxiousness was not achieved with Tension-Anxiety and Fatigue scores because of the rapid rise in these scores during the last three commitment levels in the control group. In other words, a stable baseline for comparison did not develop. Contrasting the two curves for the control group, one using all POMS subtests and the other using only those related to anxiety and somatic disturbance, demonstrates the usefulness of the selected subtests in monitoring the accumulation of anxiety or self-perceived stress in chronic alcoholics early in the treatment process. The quadratic trend of the Tension-Anxiety and Fatigue factor scores occurring in subjects without manifest, current vocational stressors probably best describes the underlying mood disturbance shifts in newly admitted, high-risk, chronic alcoholics.

## Conclusions

This study then provides some description over time of the anxiety and mood disturbance states that accompany the high-risk, chronic alcoholic's attempts at re-employment or career development following a

history of chronic unemployment. The usefulness of a dependent measure keyed to vocational development situations was made evident by the anxiety score patterns achieved on the S-R Inventory of Anxiousness. Further, these scores showed clear differences from the overall mood disturbance score patterns (POMS) which did not discriminate among the three groups but indicated increasing affective arousal over time. This pattern of gradual, increasing mood disturbance on the POMS was enhanced by viewing only those factored subtests that have evident somatic correlates according to the suggestion of previous investigators (Litman, 1974; Woodruff, Guze, & Clayton, 1972).

The linearly increasing trends found for the vocationally stressed groups (as contrasted with the low demand, control group) on the S-R Inventory supports the previously reviewed literature on controlled drinking research that anxiety states, based on self-report measures, tend to increase prior to the onset of a drinking episode (Nathan, 1970; Steffen, Nathan, & Taylor, 1974). Recalling that attrition rates in the program under study and in similar alcoholic vocational rehabilitation facilities are above 70 percent by the end of the 30-day, intermediate care first phase, leads one to the probable conclusion that the observed increases in both generalized affective arousal and vocationally-cued avoidance anxiety are predictive of the high-risk potential for relapse in this selected group of chronic alcoholics. Multiple and repeated measures for trend description were used for the first known time in studying alcoholic vocational anxiety state fluctuations and seem to be particularly advantageous over single-instance, pre-test, post-test

measures of anxiety shifts during treatment. These advantages pertain to the value of the multiple time series design in which the experimental effect is twice demonstrated, once against the control trend and once against the pre-treatment values in the time series (Campbell & Stanley, 1963).

This type of approach should prove useful in subsequent research that could relate this increase in affective disturbance to relapse behavior, especially in those programs addressing the needs of the high-risk, unemployed, chronic alcoholic. The institution of differential treatment efforts may be more effectively begun given a better understanding of the chronic alcoholic's response pattern to specific program stressors over time.

In this study further support was found for the position taken by O'Leary and his co-workers (1977) that treatment efforts be directed away from confrontation and the interpretation of defenses and toward the acquisition of anxiety-reducing coping strategies, in this case, fitted to the demands of vocational rehabilitation. This suggests adoption of the Cox (1978) model of stress dynamics in that heightened anxiety is related to typical coping capacity and self-perceived coping capacity balanced against typical task demand and perceived task demand. Since any imbalance is likely to give rise to enhanced affective disturbance which serves to cue resumption of drinking, treatment efforts may be more beneficial when narrowed to behavioral instances of this imbalance.

Finally, one of the most important by-products of the observed anxiety trends is the need for careful pacing of vocational demands early

in the treatment process, since this study clearly demonstrates the immediacy of affective arousal due to the exposure to specific vocational requirements. In fact, this finding argues for careful individualized vocational rehabilitation planning in which there is sufficient flexibility present to allow for delays or accelerations in the program sequence. Rigid programming is likely to prevent accommodation to variable re-employment stresses and probably, in part, accounts for the high attrition rates of chronic alcoholics involved in residential, vocationally-keyed treatment.

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# APPENDIX A

# APPENDIX A

## ADAPTATION OF THE S-R INVENTORY OF ANXIOUSNESS FOR RE-EMPLOYMENT ANXIETY A PILOT STUDY

The purpose of this pilot study was to develop a self-report measure of anxiety directed at specific situational conditions surrounding re-employment and career development demands in the rehabilitation of chronic alcoholics. More specifically, the purpose of this study was to empirically determine if career development situations evoke significantly greater avoidance reactions from unemployed residential alcoholics and hospitalized heroin addicts compared to control groups of non-addicted employed males and unemployed undergraduate students. It was hypothesized that both alcoholics and heroin addicts would demonstrate reliably more career development conflict than employed non-addicted males and unemployed college students.

### Method

#### Subjects

Subjects from two alcoholic groups were drawn at random from a metropolitan, private residential alcohol treatment program operating under state contracts. The program consists of a 16-bed, 30 day Intermediate Care Unit (ICU), and a 20-bed Extended Care Unit (ECU). The ICU clients are first detoxed at associated agencies before admission to the program. Nine and eight subjects were drawn from the ICU and ECU,

respectively. The mean age of the ICU clients was 35.8 years (range = 21 to 51; SD = 9.3). The ECU clients had a mean age of 39.5 years (range = 29 to 50; SD = 6.7).

Twelve heroin addicts were drawn at random from an inpatient drug treatment unit at a veterans hospital. Their mean age was 26.6 years (range = 21 to 38; SD = 4.4). A nonequivalent control group of 13 undergraduate students with mean age of 22.6 years (range = 17 to 35; SD = 4.4) was chosen from a metropolitan university in the same locale. An additional nonequivalent control group of 13 employed psychiatric staff aids from a large state hospital with mean age of 32.4 years (range = 23 to 47; SD = 8.4) was chosen for comparison purposes.

## Materials and Procedures

All subjects anonymously completed a modified version of the S-R Inventory of Anxiousness (Endler, Hunt, & Rosenstein, 1962). With this instrument, subjects self-report their expected level of anxiety along 14 dimensions using a five-point scale after imagining a potentially threatening situation (Table 1). Moderately high reliability and validity coefficients have been obtained for this inventory (Endler & Hunt, 1966). In this study, appropriately weighted approach factor scores and avoidance factor scores were determined. Endler, Hunt, and Rosenstein (1962) found that the avoidance factor score "combines feelings of distress with disruption of action, with responses that tend to avoid the situation, and with physiological responses associated with emotional distress" (p. 26). On the other hand, the approach factor score is composed of modes of responding characterized by exhilaration, enjoyment,

Table 1

S-R Inventory of Anxiousness Test Items

| | | | |
|---|---|---|---|
| 1. | Heart Beats Faster | 8. | Enjoy the Challenge |
| 2. | Get an Uneasy Feeling | 9. | Mouth Gets Dry |
| 3. | Emotions Disrupt Action | 10. | Become Immobilized |
| 4. | Feel Exhilirated and Thrilled | 11. | Stomach Feels Full |
| 5. | Want to Avoid Situation | 12. | Seek Such Experiences |
| 6. | Perspire | 13. | Have Loose Bowels |
| 7. | Need to Urinate Frequently | 14. | Experience Nausea |

and approach. Approach-minus-avoidance difference scores were then calculated for the following four imagined situations: Considering going back to work; Entering a work training program; Beginning school; Going on a job interview. The lower the obtained difference score, the greater the avoidance behavior exhibited in these imagined conflict situations. The order of the instructions was randomly determined for each subject.

Specifically, all subjects in the alcohol and heroin groups were presented with the following instructions:

> We are interested in asking you some questions about career development. Most persons have personal attitudes and feelings evoked by specific career development situations such as going to school, beginning work, etc. The questionnaire in front of you will present four career development situations that I would like you to imagine in your mind. After vividly imagining these situations, answer all questions honestly as you would if you were actually a participant in your imagined scene. All responses will be kept confidential and the data obtained from this study will be used to better the stay of new men on the program. Are there any questions?

Subjects in the college and employed male groups received the same instructions with the exception of ending with the comment that all responses would be kept confidential. The subjects then answered all questions.

## Results

Men on ICU, ECU, and the employed males were significantly older than both the heroin addicts and the college students (all $p < .01$) but not significantly different from each other. The heroin addicts did not reliably differ in age from the college students. In addition, because of the differences in age across treatment groups the dependent measure, the

approach-minus-avoidance difference score, was correlated with age and found not to be significant.

A 4x5 analysis of variance was then performed on the mean approach-avoidance difference scores for the groups and instructional independent variables. This ANOVA, presented in Table 2, demonstrated a significant main effect for both the group and instructional variables. Table 3 summarizes the mean difference scores for the various levels of these independent variables and these means have also been plotted in Figure 1 for comparison purposes.

It was of interest to investigate the overall approach-avoidance difference scores collapsed across the instructional levels. Thus, a one-way ANOVA for groups was conducted and found significant, $F$ (3, 28) = 18.65, $p < .001$. The Duncan Multiple Range Test was applied to investigate individual mean differences. Table 4 provides a summary of these results and also gives the individual group means collapsed across instructional levels (group means presented along main diagonal).

Inspection of Table 4 shows that the ICU mean score was significantly less than ECU, employed, college and heroin groups mean scores, in order. Similarly, the heroin mean score was significantly greater than ECU, college, employed and ICU mean scores respectively.

A one-way analysis of variance was also computed for overall instructional means and found significant, $F$ (3, 28) = 3.26, $p < .025$. Table 5 summarizes the group means, plotted along the diagonal, and the results of the Duncan Multiple Range procedure. Inspection of this table reveals that the only significant individual mean differences for the

Table 2

Analysis of Variance for Approach-Avoidance Difference Scores

| Source of Variation | Sum of Squares | df | Mean Squares | F | P |
|---|---|---|---|---|---|
| Group | 92.61 | 4 | 23.15 | 15.33 | .01 |
| Instruction | 19.42 | 3 | 6.47 | 4.28 | .01 |
| Group X Instruction | 7.20 | 12 | .60 | .40 | .86 |
| Residual Error | 295.15 | 196 | 1.51 | | |
| Total | 414.38 | 215 | 1.93 | | |

Table 3

Mean Approach-Avoidance Difference Scores

| Group | Consider Work | Work Training | Consider School | Job Interview | Row Means |
|---|---|---|---|---|---|
| College | 1.47 | 1.98 | 2.50 | 1.24 | 1.80 |
| ICU | 0.40 | 1.01 | 0.99 | 0.54 | 0.74 |
| ECU | 1.61 | 1.74 | 1.87 | 1.15 | 1.59 |
| Heroin | 2.81 | 3.14 | 2.64 | 2.08 | 2.66 |
| Employed | 1.75 | 2.15 | 1.92 | 1.52 | 1.83 |
| Column Means* | 1.68 | 2.09 | 2.05 | 1.37 | |

*Increasing values indicate greater approach behavior as measured by the S-R Inventory of Anxiousness.

Figure 1. Mean Approach-Avoidance Scores for Treatment Groups.

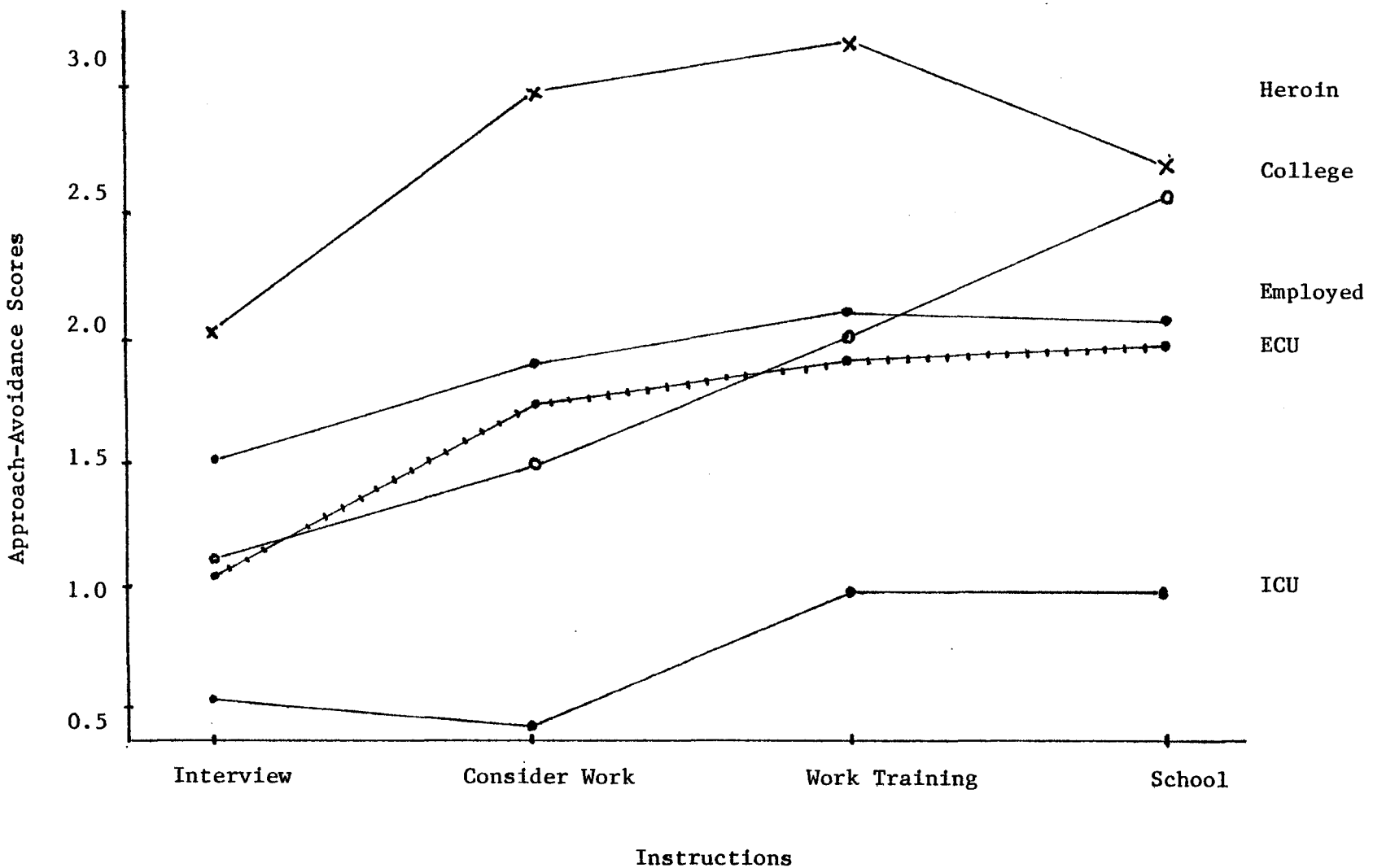

Table 4

Group Approach-Avoidance Means with Post-Hoc Testing

| | ICU | ECU | College | Employed | Heroin |
|---|---|---|---|---|---|
| ICU | .73 | | | | |
| ECU | * | 1.59 | | | |
| College | * | * | 1.79 | | |
| Employed | * | - | - | 1.83 | |
| Heroin | * | * | * | * | 2.66 |

* Indicates significant difference at the .05 level using Duncan's Multiple Range Procedure. Group means are printed along main diagonal.

Table 5

Instructional Approach-Avoidance Means with Post-Hoc Testing

| | Consider Work | Work Training | School | Interview |
|---|---|---|---|---|
| Consider Work | 1.68 | | | |
| Work Training | N.S. | 2.09 | | |
| School | N.S. | N.S. | 2.05 | |
| Interview | N.S. | * | * | 1.37 |

* Indicates significant difference at the .05 level using Duncan's Multiple Range Procedure. Means are printed along the main diagonal.

instructional variables were the "Interview" situation differing from the "Work Training" and "School" instructions.

Simple Effects Analyses

In order to assess the ability of the various levels of career development anxiety measures to be differentiated both between and within treatment groups, a simple-effect analysis of variance was conducted. The results are provided in Table 6. For simplicity of presentation the A-factor refers to groups with level b1 (considering work), b2 (work training), b3 (school), and b4 (interview). Similarly, the B-factor refers to instructions with level a1 (college), a2 (ICU), a3 (ECU), a4 (heroin), and a5 (employed males).

Reference to Figure 1 in explaining the results of the simple-effects ANOVA demonstrates that each instructional level is significantly differentiating among at least two of the four treatment groups (reference to Figure 1 throughout may be helpful in visualizing the comparisons). Within a given treatment group, however, only the college students showed significant variation across the four instructional levels.

Post-hoc analysis using Tukey's Highest Significant Difference (HSD) test was applied next to investigate differences between individual level means in order to determine which means accounted for the overall significant F-test in the simple-effects analysis. Within interview instructional level only, the ICU - Heroin comparison was significant ($p < .05$). For the "Considering Work" instruction, both ICU and college groups were significantly different from the heroin group ($p < .05$).

Table 6

Analysis of Variance for Simple Main Effects[a]

| Source | Sum of Squares | df | Mean Squares | F | P |
|---|---|---|---|---|---|
| Groups (A) | 92.61 | 4 | 23.15 | 15.33 | .01 |
| A at b1 | 36.88 | 4 | 9.22 | 6.11 | .01 |
| A at b2 | 26.09 | 4 | 6.52 | 4.32 | .01 |
| A at b3 | 19.24 | 4 | 4.81 | 3.19 | .01 |
| A at b4 | 16.60 | 4 | 4.15 | 2.75 | .05 |
| Instructions (B) | 19.42 | 3 | 6.47 | 4.28 | .01 |
| B at a1 | 14.30 | 3 | 4.77 | 3.16 | .01 |
| B at a2 | 3.68 | 3 | 1.23 | 0.81 | N.S. |
| B at a3 | 4.07 | 3 | 1.36 | 0.90 | N.S. |
| B at a4 | 8.84 | 3 | 2.95 | 1.95 | N.S. |
| B at a5 | 4.26 | 3 | 1.42 | 0.94 | N.S. |
| AB | 7.20 | 12 | 0.60 | -- | -- |
| W in cell | 295.15 | 196 | 1.51 | -- | -- |

[a]Note: Refer to Table 2 and Figure 1 to better conceptualize the meaning of these simple effects analyses.

Within the "Work Training" level both ICU and ECU were significantly different from the heroin group ($p < .05$). And finally, for the "School" instruction, the ICU group differed significantly from the college and heroin groups ($p < .05$). Similar application of Tukey's HSD test within the college group showed a significant ($p < .05$) difference between the "Interview" and the "School" instructions.

Discussion

It is suggested from the analyses of variance and post-hoc testing that only for the ICU group of alcoholics was the initial hypothesis confirmed. That is, of the two alcoholic groups and the heroin groups only the ICU subjects demonstrated consistently greater career development conflict than the non-equivalent control groups of college students and employed males. Under no instructional level (i.e., imagined career development situation) did the ECU group differ significantly from the college group. It appears that within the small groups studied here, the men who had been involved in treatment less than 30 days manifested greater vocational approach-avoidance anxiety than those men having successfully completed the ICU program and who moved to the ECU follow-up program. Clearly, the most immediate explanation for this result lies in a selection effect. That is, men most motivated for treatment and therefore staying longer on the program, demonstrate less anxiety regarding career development--an integral component in the ECU treatment package.

Following a review of the results, ICU-to-ECU attrition rates were investigated indicating that approximately 20 to 30 percent of the admissions to ICU complete the 30-day program and then move to the ECU program. (There is a near 100% acceptance rate of men completing ICU and applying to ECU.) This finding strengthens the selection hypothesis in explaining the ICU-ECU vocational differential.

Given the non-equivalent nature of the control groups, there are alternative hypotheses for the high similarity between the ECU group, the employed males, and the college group. If movement through the ECU program is viewed as increasing proximity to involvement in employment seeking behavior, one would expect greater and accompanying anxiety. The question then becomes whether it is the treatment interventions on ICU and ECU that reduce vocational avoidance, or whether the men on ECU simply deny the anxiety associated with increasing pressures to rejoin the work force. Given the nature of the control groups, this question cannot be answered. It seems advisable in subsequent studies to include a matched group of recently employed alcoholic males to help clarify this issue. It would also be of interest to manipulate the amount and length of treatment for the alcoholic group.

Of particular interest is the finding for the heroin group. Collapsing across instructional levels, the heroin group showed significantly greater approach motive than any of the other three groups. One possible explanation for this lies in the lifestyle of the addict. Many are successful in "street behavior" and see no value or reward in pursuit of career development. Therefore, when faced with hypothetical situations, they monitor little or no overt anxiety or conflict.

In terms of the discriminative effectiveness of the instrument, some clear differences between group-scoring characteristics were obtained. Across the instructional levels, an upward trend in the approach motive was noticed from the Interview level (least approach) to the School situation. This finding makes intuitive sense in that the Interview situation is the most anxiety inducing. Combining the five treatment groups showed that the Work Training and School situations were significantly greater in approach motive than the Interview level.

Thus, the findings of this study appear to demonstrate the presence of elevated anxiety levels as measured by specific, imagined career development situations in chronic alcoholics who are early in the residential treatment process. The use of a modified version of the S-R Inventory of Anxiousness keyed to vocational-situational demands has been found to be effective in detecting and monitoring cued re-employment anxiety.

# APPENDIX B

APPENDIX B

Vocational Choice Form

Instructions: Please mark one of the choices listed below for your vocational plan.

_____: 1. A job skills evaluation and training program (Example: CETA, DVR, Jewish Vocational Services).

_____ 2. A trade school referral for learning a new trade or reviewing a previously practiced trade.

_____ 3. A return to school to further your academic education.

_____ 4. An independent job search.

_____ _____

Date Name

APPROVAL SHEET

The dissertation submitted by James Dowding, has been read and approved by the following committee:

Dr. Thomas P. Petzel, Director
Associate Professor, Psychology, Loyola

Dr. Patricia A. Rupert
Assistant Professor, Psychology, Loyola
Director of Clinical Training

Dr. Leroy A. Wauck
Professor, Psychology, Loyola
Dean of Social Sciences

The final copies have been examined by the director of the dissertation and the signature which appears below verifies the fact that any necessary changes have been incorporated and that the dissertation is now given final approval by the Committee with reference to content and form.

The dissertation is therefore accepted in partial fulfillment of the requirements for the degree of Doctor of Philosophy.

4/20/81
Date

Thomas P. Petzel
Director's Signature