This study was designed to assess the utility of the Zuckerman Sensation Seeking Scale with Driving Under the Influence (DUI) offenders by examining the characteristics of those scoring high vs. low on Form V of the Sensation Seeking Scale (SSS-V). Individuals with high scores were hypothesized to be chemically dependent (CD) as identified by the Substance Abuse Subtle Screening Inventory Revised (SASSI-2), while those obtaining low scores were hypothesized to be non-chemically dependent (NCD) on the SASSI-2. Results indicate little support for the SSS-V with the DUI sample. However, the CD group was shown to incur more DUIs on average than the NCD group. Likewise, the CD group was shown to have a greater tendency toward a history of other drug use than the NCD group.
RESPONSES OF MALE DUI OFFENDERS ON THE SENSATION SEEKING SCALE

A Thesis
Presented to
The Division of Psychology and Special Education
EMPORIA STATE UNIVERSITY

In Partial Fulfillment
of the Requirements of the Degree
Master of Science

by
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May 1998
Approved by the Chair of the Division
of Psychology and Special Education

Approved by the Dean of Graduate
Studies and Research
ACKNOWLEDGMENTS

My sincere appreciation to Professors Cooper Holmes, David Dungan, and Howard Carvajal for their proficient contribution toward the development of this thesis. Most of all, I would like to give thanks to my husband Robin and my son Adrian. Without their love, support and many prayers, my achievements would not have been possible.
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CHAPTER 1
INTRODUCTION

For centuries, alcohol and other drugs such as opiates have been used for the relief of physical pain. Unfortunately, since the number of new forms of drugs have been discovered, drug usage has increased as people also search for relief from emotional pain created by conflict, stress, and alienation. As research and health professionals struggle to assist those individuals dealing with drug addiction, only slow progress has been made.

There is an array of mind altering substances and selecting one or two exclusively for research can be a difficult task in itself. However, common sense implies that research should attend to those issues most prevalent in our society. Consequently, research would do best to focus on the drug most used and abused and with the most damaging effects on society: alcohol. Exploring the widespread use of alcohol can determine what factors contribute to its utilization.

Alcohol has been found to be one of the most available, inexpensive, and harmful drugs to ever be legalized. Although society has attempted to regulate alcohol consumption, more and more adolescents are using it. Because of its availability, it is usually the first drug of experimentation among youth, excluding caffeine and nicotine. In 1990, Smith and Smith published Personal Health Choices, which established alcohol as the largest
problem drug among the college population, and noted that alcohol is involved in the greatest amount of problems within this age group (e.g., injuries, unwanted pregnancies, sexually transmitted diseases, and auto accidents). Furthermore, Smith and Smith reported that alcohol is responsible for an alarming number of deaths among young adults. On a national level total alcohol-related traffic deaths have averaged 24,000 per year for the last five years. Driving under the influence of alcohol is the leading cause of death and injury among those under 25 years of age.

The incentives to experiment with alcohol and other drugs are many and range from curiosity to availability of the drug. Since people are motivated in their own unique ways, either intrinsically or extrinsically, it is difficult to ascertain one basic motive by which an individual operates. With the preceding thought as inspiration, the researcher conducted the present study with one objective in mind. It was to search for a common underlying key which seems to motivate people to increase their own state of stimulation or excitement by way of alcohol intoxication.

Literature Review

E. L. Thorndike once stated "everything that exists, exists in some quantity and can therefore be measured" (Zuckerman, 1979, p. 95). Encouraged by the operant approach to sensory deprivation, Zuckerman designed a self-report personality test that would measure individual
differences of stimulation and arousal. His intentions were to discover how these individual differences influenced the choices people made. Zuckerman proposed a personality trait, which he termed the "sensation seeking trait," based upon the earlier drive reduction models which infer the common goal of all primary motivation is to reduce stimulation to a minimum (Zuckerman, Kolin, Price & Zoob, 1964).

Definition of Sensation Seeking

Zuckerman (1979) described the term sensation seeking as a "trait defined by the need for varied, novel, and complex sensations and experiences and the willingness to take physical and social risks for the sake of such experience" (p. 10). Therefore, it is the sensory effects of external stimulation that an individual values and not the external stimulation itself. For example, drugs provide little external stimulation although they can produce maximum internal sensations.

The model eventually developed by Zuckerman (1979) was called Optimal Level of Arousal. It considered the differences among individuals having their own distinct deprivation of biological and psychological stimulation. Basically, the theory proposes that too little stimulation will lead an organism to seek new or added stimuli, while too much stimulation will result in behavior designed to lead the organism back to a state of equilibrium; and ultimately people seek their own optimal level of
stimulation (Musolino & Hershenson, 1977). Consequently a person with a high optimal level of arousal, that is, a high sensation seeker (HSS), would seek out new and exciting experiences while those with a low level of arousal or a low sensation seeker (LSS) would seek to avoid such exciting experiences and keep their level of stimulation to a minimum.

Definition of Chemical Dependency

According to the Diagnostic and Statistical Manual (DSM-IV) the diagnostic criteria for substance dependence are as follows:

A maladaptive pattern of substance use, leading to clinically significant impairment or distress, as manifested by three (or more) of the following, occurring at any time in the same 12 month period: (1) tolerance, as defined; (2) withdrawal, as defined; (3) the substance is often taken in larger amounts or over a longer period than was intended; (4) there is a persistent desire or unsuccessful efforts to cut down or control substance use; (5) a great deal of time is spent in activities necessary to obtain the substance or recover from its effects; (6) important social, occupational, or recreational activities are given up or reduced because of substance use; and (7) the substance use is continued despite knowledge of having a persistent or recurrent physical or
psychological problem that is likely to have been
caused or exacerbated by the substance. (American
Psychiatric Association, 1994, p. 181)

Definition of Substance Abuse

Since not every participant in the present study was
classified as chemically dependent, it is necessary to
define substance abuse. The following are the diagnostic
criteria for substance abuse according to the DSM-IV:

A maladaptive pattern of substance use leading
to clinically significant impairment or distress,
as manifested by one (or more) of the following,
occuring within a 12 month period: (1) recurrent
substance use resulting in a failure to fulfill
major role obligations to work, school, or home
(e.g., repeated absences or poor work performance
related to substance use; substance-related
absences, suspensions, or expulsions from school;
neglect of children or household); (2) recurrent
substance use in situations in which it is
physically hazardous (e.g., driving an automobile
or operating a machine while impaired by substance
use); (3) recurrent substance-related legal
problems (e.g., arrests for substance-related
disorderly conduct); and (4) continued substance
use despite having persistent or recurrent social
or interpersonal problems caused or exacerbated by
the effects of the substance (e.g., arguments with
spouse about consequences of intoxication, physical fights); the symptoms have never met the criteria for Substance Dependence for this class of substance. (American Psychiatric Association, 1994, pp. 182-183)

Development of the SSS-V and the SASSI-2

In 1964, Zuckerman, Kolin, Price and Zoob first developed what they called the Sensation Seeking Scale (SSS). Form I of the SSS consisted of 54 items written in a forced choice format. Form I was given to 268 male and 277 female undergraduates and, after factor analysis, Form II was created (Zuckerman, 1979). Form II consisted of 34 items, 22 items that were common to the general scale and 12 additional items corresponding to one sex and not the other. Consequently, Form III was developed using 50 items from Form I and an additional 63 new items. Ultimately the development of four basic subscales was originated giving rise to Form IV.

The first subscale, Thrill and Adventure Seeking, consists of items describing a desire to engage in risky and adventurous activities such as mountain climbing or parachute jumping. The second subscale, Experience Seeking, describes the desire for new experiences usually through a nonconforming lifestyle. It usually involves areas like music, art and travel. The third subscale, Disinhibition, describes the desire for or the enjoyment of uninhibited activities such as parties, social drinking and numerous...
sexual encounters. The final subscale, Boredom Susceptibility, describes the disfavor of monotonous, repetitive activities and the desire for the unpredictable and the spontaneous (Zuckerman, 1979). Form IV contained 72 forced-choice items including the General scale derived from Form II and the four subscales previously detailed.

Zuckerman (1979) established reliability and validity based on undergraduate samples of male and female psychology students. Because of problems such as cultural differences, Zuckerman constructed Form V which contains a total score and 10 items for each subscale based on a 40 item measurement. Most research currently utilizes this form.

The Substance Abuse Subtle Screening Inventory (SASSI) developed by Miller in the early 1980s originally consisted of 52 true-false questions on one side with 12 alcohol-related and 14 drug-related items on the other (Miller, 1985). The true-false questions appear to be unrelated to chemical abuse whereas the 26 alcohol and drug related items require the subject to self disclose. The SASSI has since been revised to contain 62 true-false questions. The Mental Measurements Yearbook (1994) notes that the items on the SASSI were empirically derived from other scales such as the Minnesota Multiphasic Personality Inventory, the Psychological Screening Inventory, and the Michigan Alcoholism Screening Test. The subtle items on the scale relate to a variety of behaviors including those related to
needs, interests and values. Overt questions concerning the use of substances are related to substance abuse only.

The SASSI-2 consists of 7 subscales. Two additional scales are Face Valid Alcohol and Drug Scales. These scales are distinctly scored and intended to show whether the client's preference is for alcohol or other drugs (Kerr, 1994).

The first of the SASSI-2 subscales is the Obvious Attributes Scale which is intended to measure the willingness of the client to admit to problems related to substance abuse. The second, the Subtle Attributes Scale, is especially resistant to faking. It is intended to measure the client's predisposition to alcohol and drug dependence. The third is the Defensiveness Scale. This scale is intended to identify whether a person is a defensive abuser or a defensive non-abuser. The fourth scale is Family vs. Controls Scale. It is intended to be a measure of codependency. The fifth scale is the Supplemental Addiction Measure which measures a level of defensiveness similar with substance abusers, and the sixth scale entitled Correctional Scale is used to determine the likelihood of ongoing legal problems. The seventh scale is the Random Answering Pattern Scale which yields a score indicating random responding by the client (SASSI, 1995).

There are many advantages to using the SASSI-2 other than its ability to detect faking. The SASSI-2 is inexpensive, written at the fifth grade reading level, takes
approximately 10 to 15 minutes to administer, and can be hand scored in minutes (SASSI Institute, 1995). According to Cooper and Robinson (1987), the SASSI-2 is unique and seems quite promising because it acquires reliable information directly from the client and is able to detect alcoholics denying their condition, unlike the MAST and the MacAndrew Alcoholism Scale (MAC).

Reliability

Split-half reliability of the SSS form V 40 item scale ranged from 0.83 to 0.86. With the exception of the ES scale which fell to about 0.75, all other subscales have remained consistent with Form IV in terms of reliability. In fact, the reduction of items from Form IV to Form V has generated a total score with improved reliability over that of Form IV's General Scale. Additionally, Form V has proved a remarkable score of 0.94 on 3-week retest reliability (Zuckerman, 1979).

Kilkunas (1988) conducted the only study of test-retest reliability without using the face valid scales. The study consisted of 24 subjects over a 4- to 6-week time interval, and results were moderate to good test-retest reliability. Reliability coefficients were the following: OAT, 0.87; SAT, 0.91; DEN, 0.86; ALC/DRUG, 0.78; and FAH, 0.76.

Validity

The SSS-V has been positively correlated with several behaviors such as drinking, smoking, and careless sexual activity. Numerous studies indicate a high correlation
between the SSS-V and drug and alcohol usage. One such study was done by Jaffe and Archer (1987) which compared the MMPI, SSS-V, and drug and alcohol abuse scales. The results indicated that the SSS-V was the most powerful predictor of use in 7 out of 10 drug categories. It was also very effective in predicting use of more than one drug.

Although the SASSI-2 has been available for a short time only, its reputation for accurately measuring substance abuse is excellent. Cooper and Robinson (1987) stated that "Miller's studies have been 89% to 97% accurate in classifying abusers, with only a 5% to 10% rate of misclassification of nonabusers. Additionally, the SASSI-2 has a concurrent validity of .62 with the MacAndrew Scale" (p. 181). However, with so few studies, there is a need for more validation especially involving specific target populations.

Jaffe and Archer (1987) examined the ability of five assessment techniques to accurately measure drug usage among college students. The sample consisted of 125 female and 61 male undergraduate students. The results clearly indicated that among the predictors used in the study, the sensation seeking trait was selected as the primary motive for drug use.

Zuckerman, Neary, and Brustman (1970) investigated the correlation between the SSS-IV and smoking, drugs, alcohol, and sexual behavior. Form IV of the SSS was administered to 505 undergraduates psychology students. The experience
seeking factor was reported to be related to an interest in drugs while the disinhibition factor was more characteristic of an interest in alcohol and a variety of social stimulation including sex. This study found that 62% of high SS males and 21% of low SS males had used marijuana while 72% of high SS males had experienced sexual intercourse as compared to 30% of the low SS group. Furthermore, high SS males tended to report more alcohol use than low SS males on the alcohol scale and scored higher on the cigarette smoking scale, although the difference was not significant.

Zuckerman (1986) reported a study using a sample of 1095 college students and 350 naval personnel as part of a large scale survey of personality and drug use. Responses suggest mood elevation and social disinhibition as primary motives for drinking.

Schall, Weede, and Maltzman (1991) conducted a study using 160 university dormitory residents. Questionnaires were administered in order to locate predictors of alcohol consumption. The Disinhibition subscale was the single best predictor ($r = .40$) of alcohol consumption by the men.

Earleywine and Finn (1991) used the SSS-V to examine the relationship between behavioral disinhibition and alcohol consumption. One hundred and seven undergraduate men were used in the study. Resulting data indicated correlations between personality measures and alcohol use ranged in magnitude from .18 to .50.
Alterman (1990) correlated alcohol consumption in young adults as part of a study examining a sample of 98 college men. A wealth of information was received by self-reports, the MAC, the MAST, and the SSS-V. Among the sample 40 percent could be described as problem drinkers. Results indicated the Disinhibition and the Experience Seeking scales to be consistently correlated with drinking behavior, with correlations for Disinhibition ranging in magnitude from .39 to .47. Furthermore, "heavy drinkers were twice as likely as abstainers to have fathers who were heavy or problem drinkers" (p. 96).

Cognitive motivations (e.g., reduction of negative affect, enhancement of positive affect, social cohesion, and addiction) were examined with the SSS-V as a long-term predictor of alcohol abuse (Stacy, Newcomb, & Bentler, 1993). Sensation seeking significantly predicted cognitive motivations from adolescence to adulthood although adolescent cognitive motivations did not significantly predict sensation seeking in adults. High sensation seeking was implied to have increased sensitivity to certain types of reinforcement in which sensitivity is made manifest by cognitive processes. In other words, when a high sensation seeker uses alcohol or drugs, the reinforcing properties of that behavior give rise to cognitive motivation. A strong predictive effect of the Disinhibition scale on Driving While Intoxicated (DWI) behavior was also found.

Henderson, Goldman, Coovert, and Carnevalla (1994)
explored the relationship between sensation seeking and alcohol consumption. The sample consisted of 246 female and 214 male undergraduate students. They were given several questionnaires on alcohol use, expectancies, and the SSS-V. Results indicate alcohol expectancy to act as a significant, partial mediator of the relationship between sensation seeking and alcohol consumption. Additionally, sensation seeking was found to have a direct influence on the consumption of alcohol. High sensation seekers (HSS), those individuals whose total SSS-V score was greater than 20, reportedly expected greater effects of alcohol on behavior than did their counterparts. Moreover, HSS were inclined toward alcohol because of the other aspects of sensation seeking associated with alcohol such as seeking excitement and novel situations.

Baker, Beer and Beer (1991) assessed 29 high school honor students by administering the MacAndrew Alcohol Scale, the Coopersmith Self-esteem Inventory, and the Sensation Seeking Scale (Form V). Scores on alcoholism and sensation seeking were significant and positive ($r = .57$), suggesting a tendency towards alcoholism may be associated with seeking stimulation from the environment. Johnson (1989) correlated personality characteristics of light, moderate, and heavy drinking women. Fifty-five college females were asked to complete a series of personality questionnaires including the SSS-V. Heavy drinkers scored higher on sensation seeking than light or moderate drinkers. Furthermore,
certain personality characteristics distinguished heavy drinkers from those who consumed light to moderate. Mookherjee (1986) also compared personality traits of 1630 white men convicted of DWI. Alcoholics were more inclined toward sensation seeking than non-alcoholics. Likewise, there is an inclination for certain traits to be more evident in alcoholics than in other psychopathological disorders. Such traits include aggression, dependence, and low self esteem. Hesselbrock and Hesselbrock, (1992) examined personality traits and reported significant interaction effects between the relationship of Antisocial Personality Disorder (ASP) and a family history of alcoholism on the SSS-V. The group of ASP men with a family history of alcoholism had a tendency to score higher on the total SSS-V score than its three counterpart groups.

SSS and Drunk Driving

Zuckerman (1978) equates drug abuse with a high risk game. Thus, to drink heavily and drive is a high risk criminal activity with the potential for destroying lives. Driving under the influence (DUI) of alcohol is a prevalent problem especially among the youth in society. Arnett (1990) reported "in 1986, adolescents (age 16-24) comprised 18.7% of the licensed drivers, but 38.7% of the drunk drivers involved in fatal accidents" (p. 541). A study completed by Arnett investigated drunk driving behavior in relation to sensation seeking and egocentrism among 180 young adult males. Results revealed a strong relationship
between drunk driving and sensation seeking, with significance to the total score and all scales except the ES scale.

Although not everyone convicted of DUI is a problem drinker, more than half of DUI offenders are considered to be alcoholics. Yu and Williford (1993) report a study with a sample of convicted drunk drivers in which 75% were diagnosed as alcoholics or problem drinkers.

McMillen, Pang, Wells-Parker, and Anderson (1992) compared drinking drivers' personality traits, social responsibility, and sensation seeking. The sample consisted of 132 male and female college students. HSS took more risks after presumed alcohol consumption while LSS took fewer risks after presuming to drink.

McMillen, Adams, Wells-Parker, Pang and Anderson, (1992) examined personality traits and behaviors of drunk drivers. Using a interview format, 358 first time DUI offenders and 141 DUI multiple offenders were compared. Multiple offenders had a higher level of hostility, sensation seeking, depression, and mania than the first time offenders.

A study by Furnham and Saipe (1993) investigated the personality correlates of convicted drivers. Convictions correlated negatively with both Thrill ($r = -0.19$) and Boredom Susceptibility ($r = -0.31$) factors, suggesting convicted drivers seek higher levels of thrill and arousal in order to attain the optimal level of stimulation.
McMillen, Smith and Wells-Parker (1989) considered the effects of alcohol and sensation seeking on risk taking while driving. Ninety-six undergraduate men and women were given the SSS-V preceded by a beverage containing various levels of alcohol or a placebo before tested in a driving simulator. Findings revealed risk taking, as measured by cars passed or lane changes, to be higher among HSS who believed to have consumed alcohol than the HSS who believed they had no alcohol to drink. Likewise, Jaccard and Turrisi (1987) offer support by reporting HSS are likely to act impulsively and take risks while tuning out signs of external danger. Therefore, inebriated HSS are more likely to make errors in judgement based on external cues than their sober counterparts.

Stacy, Newcomb, and Bentler (1991) examined the effect of personality on the drinking behavior of 614 men and women. The SSS-V, other personality measurements (e.g., hostility, social conformity, and depressive tendencies), a history of alcohol consumption, and driving behavior were obtained. Sensation seeking predicted drunk driving behavior in men ($r = .25$) although not among women. If men conform to same sex role models who take risks while driving, then their high risk behavior of driving while drunk satisfies their sensation seeking impulses.

Several studies on gender differences with regard to drinking and driving behavior have shown men being convicted of drunk driving much more often than women. Farrow and
Brisling (1990) report research suggesting an extremely high prevalence of high risk driving among boys, including competitive driving and driving while intoxicated. Additionally, research shows women less often cited for drunk driving than men. In most cases, women stopped for drunk driving may be warned rather than arrested.

**SSS and Other Drugs**

Although alcohol is the focus of this literature review, this investigator was interested in the relationship between HSS and other drugs. According to Zuckerman (1979), individuals vary as to their drug of choice although social trends influence drug use. Zuckerman also suggests that HSS seek to use illegal drugs merely because of the risk.

Galizio, Gerstenhaber, and Friedensen (1985) studied the correlates of sensation seeking in alcoholics. The sample consisted of 74 alcoholic clients in treatment. The subjects completed a battery of instruments entitled the "Interest and Preference Survey." HSS group reported higher monthly frequencies of marijuana use and a regular pattern of use with opiates, stimulants, sedatives, tranquilizers, and hallucinogens. The LSS group reported essentially no experience with any illegal drug except tranquilizers, and most had been prescribed.

Khavari, Mabry, and Humes (1977) found elevated marijuana in examining personality and hallucinogen use among 298 adult men and women. Analysis of data revealed the use of hallucinogenics, particularly marijuana ($r = .73$).
and hashish ($r = .21$), to be associated with a person's need to seek out new and exciting experiences. Furthermore, the use of marijuana is more inclined to be adopted in the search for new experiences, likely due to its ready availability.

**SSS and Extraverted Behavior**

A number of studies have implied that sensation seeking is an aspect of other traits such as extraversion. Zuckerman, Bone, Neary, Mangelsdorff, and Brustman (1972) tested correlates of the SSS in seven studies and two replications using undergraduates. Results showed significant correlations ($r = .35$ to $.52$) of the SSS with personality scales (e.g., Minnesota Multiphasic Personality Inventory, and 16 Personality Factor Questionnaire) and imply the general sensation seeking trait is associated with an impulsive, nonconforming, uninhibited, dominant type of extraversion, although not particularly related to the socialization type of extraversion. Haapasalo (1990) reported sensation seeking and extraverted behavior to be typical of men, regardless of their age, but not typical of older women.

Other traits correlated with sensation seeking include antisocial personality characteristics. McCourt, Gurrera, and Cutter (1993) reported individuals who score high on the Disinhibition subscale of the SSS-V also tend to exhibit antisocial behaviors.

Sensation seeking has clearly been established to be
associated with behaviors that seek pleasure and avoid discontentment. Norman and Fenson (1970) reported HSS tend to describe themselves as discontent, pleasure seeking and, overall, unstable, while LSS tend to describe themselves as complacent, calm and stable. One would expect HSS to portray themselves as unstable in all areas of life. Interestingly, Musolino and Hershenson (1977) investigated whether people engaged in high risk occupations would seek or choose highly stimulating leisure activities more than those employed in low risk occupations. Air traffic controllers (N = 100) were compared to 78 college students and civil service workers. Results showed the high risk-taking group of workers scored significantly higher than the low risk-taking group of workers on all five measures of the Sensation Seeking Scale. People who are employed in high risk occupations also prefer leisure and social activities of an exciting nature.

**SSS and Age**

Zuckerman (1979) predicted age differences would occur in research using the sensation seeking scale. Based on observations in animal and human species, Zuckerman suggested that sensation seeking increases with age until some time during adolescence and then slowly decreases with age. Zuckerman and Eysenck (1978) performed a study supporting the age decline with the SSS-V and twins ranging in age from 16 through 70. The most notable subscale score changes as a function of age were found on the Thrill and
Adventure Seeking and the Disinhibition subscales. Mean scores on the Thrill and Adventure Seeking subscale declined progressively from 7.3 to 3.3 with age and 8.2 to 3.4 on the Disinhibition subscale for men. Regression analysis revealed age to account for 21% of variance on the Thrill and Adventure Seeking subscale and 18% on Disinhibition subscale for both sexes. The usual rationale for the age decline is that most people grow conservative as they mature. However, Zuckerman proposes biological correlates such as cortical activity and gonadal hormones may alter sensation seeking with age (Zuckerman, 1979).

Although there are several studies supporting the age decrease, Zuckerman and Carol (1977) found no correlation between age and the SSS IV scales for 80 drug abusers between the ages of 20 and 29. Another study examined 29 high school students and differences between grade levels were assessed by analysis of variance which indicated significant effects on sensation seeking scores. Baker, Beer and Beer (1991) report juniors and seniors scoring higher on sensation seeking than sophomores (seniors’ \( \bar{X} = 18.30, \text{SD} = 5.40 \); juniors’ \( \bar{X} = 17.63, \text{SD} = 4.47 \); sophomores’ \( \bar{X} = 10.50, \text{SD} = 4.90 \)).

SSS and Race

There are few studies showing the relationship between the SSS-V and racial background. Jaffe and Archer (1987) tested 125 female and 61 male undergraduates to identify predictors of drug use from the SSS-V. Whites and Asians
scored higher than Blacks on the SSS-V. Subsequent tests revealed Whites used tobacco more frequently than either Asians or Blacks, and Whites and Asians used alcohol more frequently than Blacks. Furthermore, Whites reported higher levels of drug use than Blacks in four drug categories.

Purpose of Study

The present research used Form V of Zuckerman's Sensation Seeking Scale (SSS-V) to determine whether the scale could predict chemical dependency in adult males convicted of Driving Under the Influence (DUI). The purpose of the study was to assess the practical validity of the SSS-V with DUI offenders by examining the characteristics of those scoring high versus low on the SSS-V. Individuals with high scores were hypothesized to be chemically dependent (CD) as identified by the SASSI-2, while those obtaining low scores were to be identified as non chemically dependent (NCD) on the SASSI-2.

Research Questions

The SSS-V consists of four categories, each with its own score. The subtests are Thrill and Adventure Seeking (TAS), Experience Seeking (ES), Disinhibition (Dis), and Boredom Susceptibility (BS). There are four subscores and a total SSS score included in the entire scoring procedure (Zuckerman, 1979). The author of this study questioned whether the Dis or ES subtest scores would differentiate between those subjects who were identified as chemically dependent and those who were identified as non chemically
dependent. Along with this question, the researcher of this study questioned whether or not HSS would have incurred more DUIs on the average compared to the LSS. Finally, would HSS on average have a history of other drug use distinct from alcohol as compared to the LSS?

**Significance of Problem**

Studies that focus on the sensation seeking trait of an individual expect a strong positive correlation between sensation seeking behavior and drug use. If that correlation is found, mental health professionals who treat addiction can create new ways for the chemically dependent person to acquire stimulation through the environment rather than turning to drugs. According to Zuckerman (1994), certain treatment programs in California have begun to use sky diving as part of the treatment plan with former heroin addicts reporting experiences like the ones caused by the drug heroin. Zuckerman admits that one cannot go sky diving everyday although the best treatment for a drug abuser may be an interesting and stimulating job rather than a boring, monotonous one. He suggested that sensation seekers should hold jobs dealing with people rather than objects, pointing out the fact that many recovering addicts become counselors.

In addition to better treatment planning, studies on sensation seeking behavior and chemical dependency can bring about a more precise profile of the characteristics of a drug dependent person or someone at risk to become dependent on drugs. In terms of prevention, reports and studies
(Kerr, 1994; Zuckerman, 1994) have indicated that both the SSS-V and the SASSI-2 have been tested and proven to be effective with adolescents 12 years through adulthood. The SASSI-2 offers an adolescent version of the adult form.
CHAPTER 2

METHOD

Sample

The target population for the present study was individuals who had previously abused a chemical substance. The sample involved 50 men who had previously been arrested for Driving Under the Influence (DUI) at least once. The sample of 50 was divided into two groups: chemically dependent and non-chemically dependent. The DUI offenders were referred by the court to receive a DUI evaluation upon sentencing. The referrals were made to an agency for evaluation within the district of the DUI occurrence. The age of subjects ranged from 18 through 46. The sample consisted of residents of Lee County in Florida since subjects were selected from a greater region beyond the city limits of Ft. Myers, Florida. No women were used in the study because they were not available in sufficient number.

Design

A 2 x 2 mixed factor analysis of variance (ANOVA) was used in the analysis of data. Classification (chemically or non-chemically dependent), was the between-subjects independent variable, and Subscale (experience seeking and disinhibition) was the within subjects independent variable.

Instrument

The instrument used in this research was Form V of Zuckerman’s SSS (Appendix A). It is a 40 item forced-choice
self-report which required approximately 12 to 20 minutes to complete. The instructions require the participant to choose which of two statements for each item better describes his behavior. The SSS-V is divided into four subscales, Thrill and Adventure Seeking (TAS), Experience Seeking (ES), Disinhibition (Dis), and Boredom Susceptibility (BS). Scoring of the SSS-V yields a total score and four subscale scores. A scoring key is used to determine if an item can be scored for a particular subscale and one point is given for each answer corresponding to the scoring key for that subscale item. Each subscale is comprised of 10 items with a range of possible scores from 0 to 10. The total score may be obtained by summing the four subscale scores and can range from 0 to 40. The internal reliabilities of the SSS-V ranged from 0.83 to 0.86, with the exception of the ES scale which is about 0.75. The SSS-V has been correlated positively with several behaviors such as drinking, smoking, and sexual promiscuity with numerous studies indicating a strong relationship between the SSS-V and drug and alcohol use.

Procedure

Before the study began, an application to the Human Subjects Review Board at Emporia State University was submitted and approved. The sample was solicited from adult male clients who had appeared for a DUI evaluation at Aim Target, Ft. Myers, Florida. Aim Target is a local agency
whose main function is the evaluation and treatment of substance abusers.

When clients arrived for the DUI evaluation, they were required to fill out several forms such as substance abuse assessments including the SASSI-2. The information on the SASSI-2 determined if the subject was to be classified as chemically dependent or non-chemically dependent. It was expected that some of the men would be abusers of alcohol and not dependent, thus characterizing them as non-chemically dependent. After subjects had completed the forms pertaining to the DUI Evaluation, they were given the opportunity to take part in the present research project.

Participants were informed as to the purpose of the study, expectations of participants, assurance of anonymity, and opportunity for individual results if desired. Those individuals who agreed to take part in the study were asked to sign a consent form before beginning the SSS-V (Appendix B). Prior to completing the sensation seeking form, they were asked to give demographic information about themselves on a separate form (Appendix C). The form was given a number that would automatically identify the subject from that point forward. They were then asked to carefully read the instructions on the Zuckerman Sensation Seeking Form and follow the directions exactly as they were written, answering all 40 items. Upon completion of the SSS-V, subjects were informed of the approximate time when individual results would be made available.
CHAPTER 3
RESULTS

The results were obtained by administering the Zuckerman Sensation Seeking Scale Form V (SSS-V) to 50 men previously arrested for driving under the influence of alcohol. The data were compared to the information collected from the Substance Abuse Subtle Screening Inventory (SASSI-2).

The results were analyzed in a 2 x 2 mixed factor analysis of variance. The mean for each factor was calculated along with the standard deviation. The main effect and interaction means for Classification and Subscale are shown in Table 1.

The analysis of variance for Classification (chemically and non-chemically dependent) and Subscale (experience seeking (ES) and disinhibition (Dis)) yielded three calculated $\varepsilon$s. One $\varepsilon$ specifying the significance of the variation caused by each of the independent variables and a third concerning their interaction. The results of main effect for Classification was significant, $\varepsilon(1, 96) = 3.50$, $p < .05$. Non-chemically dependent participants scored higher than chemically dependent participants.

Omega squared ($\omega^2$) was performed on the significant $\varepsilon$ for the purpose of examining effect magnitude. Omega squared is not affected by sample size unlike the $\varepsilon$ statistic. The $\omega^2$ for the classification main effect was .005, which is a small effect.
Table 1

**Means and Standard Deviations for Experience Seeking (ES) and Disinhibition (Dis) Scores by Chemically Dependent (CD) and Non-Chemically Dependent (NCD) Classifications**

<table>
<thead>
<tr>
<th></th>
<th>ES</th>
<th>Dis</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Class</td>
<td>M  SD n</td>
<td>M  SD n</td>
<td>M  SD n</td>
</tr>
<tr>
<td>CD</td>
<td>4.83 1.34 24</td>
<td>3.83 2.03 24</td>
<td>4.33 1.69 48</td>
</tr>
<tr>
<td>NCD</td>
<td>5.00 1.24 26</td>
<td>4.39 1.94 28</td>
<td>4.70 1.60 52</td>
</tr>
<tr>
<td>Total</td>
<td>4.92 1.29 50</td>
<td>4.12 1.99 50</td>
<td>4.52 1.64 100</td>
</tr>
</tbody>
</table>
The main effect for Subscale was significant, $F(1, 96) = 3.50$, $p < .05$. The mean ES score was greater than the mean Dis score. The $\omega^2$ for the Subscale main effect was .005, which is a small effect.

The interaction between Classification and Subscale was not significant, $F(1, 96) = 0.00$, $p > .05$. At the beginning of the research study, the researcher questioned whether the ES or Dis subscale scores would differentiate between those subjects identified as chemically dependent and non-chemically dependent. The null hypothesis stated that the ES and Dis subscale scores would not differentiate between the CD and NCD classifications. Results indicated no significant interaction effect, thus causing the null hypothesis to be accepted.

The overall research hypothesis stated that the SSS-V would have validity with DUI offenders. Individuals with high scores were hypothesized to be chemically dependent as identified by the SASSI-2, while those obtaining low scores were hypothesized to be non-chemically dependent on the SASSI-2. Results show both classification and subscale to be associated with significant variation between groups although no interaction between them was found. Consequently, the overall research hypothesis could not be supported.

The researcher questioned whether or not HSS attained more DUIs on average than LSS. The results showing DUI means and standard deviations are presented in Table 2. A
Chi-Square was used to find the significance between the LSS and HSS DUI scores. Results were significant, $X^2(1, N = 200) = 44.32, p < .01.$, with LSS group showing a larger number of DUI occurrences with 48 as compared to 20 occurrences in the HSS group. Interestingly, the CD group showed a greater number of DUI occurrences with 40 when compared to 28 in the NCD group, $X^2(1, N = 200) = 23.38, p < .01.$ This result essentially correlates with past research on drinking and driving.

Finally, the researcher examined whether or not HSS on average would have a history of other drug use distinct from alcohol as compared to the LSS. These results are shown in Table 3. Since the data were not specifically scored but rather based on a yes/no answer, a value had to be given to determine numerical results. The answer "no" was given a value of zero and the answer "yes" was given a value of one. The raw scores suggest that the LSS group had a slightly higher tendency toward other drug use distinct from alcohol than that of the HSS. Chi-Square indicated a significance, $X^2(1, N = 50) = 8.34, p < .01.$ Another significant difference seems to be the CD group in comparison with the NCD group, $X^2(1, N = 50) = 3.00, p < .10.$ Similar to DUI findings, the CD group suggest a greater tendency toward a history of other drug use when compared with the NCD group. At the beginning of this study, it was hypothesized that individuals considered to be HSS would also be identified as CD and that those considered to be LSS would be identified
Table 2

Mean Number of Driving Under the Influence Occurrences and Standard Deviations for Chemically Dependent (CD) and Non-Chemically Dependent (NCD) by Low Sensation Seeker (LSS) and High Sensation Seeker (HSS) Classifications

<table>
<thead>
<tr>
<th>Class</th>
<th>CD</th>
<th>NCD</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>SD</td>
<td>n</td>
</tr>
<tr>
<td>LSS</td>
<td>1.70</td>
<td>.46</td>
<td>34</td>
</tr>
<tr>
<td>HSS</td>
<td>1.50</td>
<td>.50</td>
<td>6</td>
</tr>
<tr>
<td>Total</td>
<td>1.67</td>
<td>.47</td>
<td>40</td>
</tr>
</tbody>
</table>
Table 3
Mean Number of Men Using Other Drugs Distinct from Alcohol and Standard Deviations for Chemically Dependent (CD) and Non-Chemically Dependent (NCD) by Low Sensation Seeker (LSS) and High Sensation Seeker (HSS) Classifications

<table>
<thead>
<tr>
<th>Class</th>
<th>CD</th>
<th>NCD</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M  SD</td>
<td>M  SD</td>
<td>M  SD</td>
</tr>
<tr>
<td></td>
<td>n</td>
<td>n</td>
<td>n</td>
</tr>
<tr>
<td>LSS</td>
<td>.70 .46</td>
<td>.50 .25</td>
<td>.64 .41</td>
</tr>
<tr>
<td></td>
<td>14 6</td>
<td>6</td>
<td>20</td>
</tr>
<tr>
<td>HSS</td>
<td>1.00 .00</td>
<td>.43 .50</td>
<td>.66 .38</td>
</tr>
<tr>
<td></td>
<td>4 6</td>
<td>6</td>
<td>10</td>
</tr>
<tr>
<td>Total</td>
<td>.77 .40</td>
<td>.46 .40</td>
<td>.85 .40</td>
</tr>
<tr>
<td></td>
<td>18 12</td>
<td>30</td>
<td></td>
</tr>
</tbody>
</table>
as NCD. It was determined that of the 24 CD individuals, 20 were considered to be LSS and 4 were considered to be HSS. Furthermore, it was determined that of the 26 NCD individuals, 12 were considered to be LSS and 14 were considered HSS.

By examining the results, little support was established to conclude that the SSS-V has practical validity with the DUI population in this particular sample. Although there was statistical significance shown between groups within classification and subscale factors, the results suggest that the sensation seeking trait actually tends to be correlated with those offenders scoring NCD on the SASSI-2.
CHAPTER 4
DISCUSSION

A statistically significant difference between both Classification (chemically and non-chemically dependent) and Subscale (experience seeking and disinhibition) groups were determined. Results suggested that the non-chemically dependent DUI offenders scored significantly higher on the ES and Dis subscales of the SSS-V than their counterparts. These findings do not support past research that shows a connection between the Dis and ES subscale score and chemical dependency. This suggests that experience seeking behaviors such as drinking, partying, and sexual variety, may actually manifest in risk-taking behaviors rather than chemical dependency in general. Additionally, the results on Classification suggested that both CD and NCD groups had a tendency to score higher on the ES subscale than the Dis subscale.

The results on the interaction between Classification and Subscale independent variables indicated no significant difference between them. This finding established little support for the use of the SSS-V with the DUI offender population. The researcher therefore assumed there is no distinct difference between DUI offenders and their desire to seek out new experiences, regardless of their level of dependency on chemical substances.

Previous findings on the Dis and ES subscales led the researcher to infer a stronger association between the total
HSS score and the CD group rather than Dis and ES scores and the CD group. Furthermore, the researcher questioned the accuracy of the scores on the SSS-V. For example, the SASSI-2 produced a total of 10 profiles in which the individual had been identified as having a high level of defensiveness. Interestingly, all 10 of the profiles were classified as LSS while 8 out of 10 were considered to be CD. If all eight of the CD individuals were discovered to actually be dishonest HSS, the rate of HSS may have been much higher than originally determined. Consequently, this would effect the relationship between HSS and CD, particularly the Dis and ES subscale scores.

The results showing the total mean scores of DUI occurrences are highly supportive of past research on drinking and driving behavior. The CD group was found to incur more DUIs on average than did the NCD group, although LSS had significantly more DUIs than HSS. These results demonstrate a higher tendency for CD individuals to be arrested for DUI, thus offering support for past research (Stacy, Newcomb, & Bentler, 1991). Likewise, these findings lend support to the high sensation seekers being more chemically dependent.

The results on the number of men with a history of other drug use displays a significant relationship between the CD group and tendency toward other drug use distinct from alcohol. Interestingly, these findings also suggest
support for the correlation between the sensation seeking trait and chemical dependency.

A thorough analysis of all data has led the researcher to determine that the overall findings were somehow affected by the level of accuracy of the SSS-V to obtain valid information. With a significant level of defensiveness revealed by the subject profiles on the SASSI-2, the researcher considered a different outcome may have been possible. Nevertheless, the results of the current study could not establish the utility of the SSS-V with the DUI offender sample. On the other hand, the researcher suggested construct validity has been established using the SASSI-2 with the present sample.

The results of the present study may encourage future researchers to focus more attention on the assessment of honesty. An assessment tool can only be as accurate as its input. The detection of honesty in the present study is supported by the research completed on the SASSI-2. Miller (1985) suggested that the SASSI-2 correctly classifies CD individuals with greater than 90% accuracy overall, with about 2% error rate of misclassification of the non-chemically dependent, in all cases of validation studies (Cooper & Robinson, 1987). The SASSI-2 could prove to be a prominent screening tool in terms of accuracy and its subtle ability to detect faking.

Studies such as the present one and others (Kinder, 1990) where focus has been on smaller samples, tend to make
it difficult to generalize results. The researcher suggests that the current study be reproduced with a much larger sample including both male and female subjects from various geographical regions and socioeconomic levels. It is recommended that the SSS-V be more closely examined for its detection of honesty. In addition, the researcher would suggest that the SASSI-2 be more closely investigated for its seemingly high level of accuracy.
References


Kerr, B. (1994). Substance Abuse Subtle Screening Inventory. In J. C. Conoley & J. C. Impara (Eds.), *The supplement to the eleventh mental measurements yearbook* (pp. 249-251). Lincoln, NE: University of Nebraska.


APPENDIX A

ZUCKERMAN SENSATION SEEKING SCALE

DIRECTIONS: Each of the items below contain two choices, A and B. Please circle the letter before the choice which most describes your likes or the way you feel. In some cases you may find items in which both choices describe your likes or feelings. Please choose the one which better describes your likes or feelings. In some cases you may find items in which you do not like either choice. In these cases mark the choice you dislike least. Do not leave any items blank. All of your responses will be strictly confidential.

It is important you respond to all items with only one choice, A or B. We are interested only in your likes or feelings, not in how others feel about these things or how one is supposed to feel. There are no right or wrong answers as in other kinds of tests. Be frank and give your honest appraisal of yourself.

1. A. I like "wild" uninhibited parties.
   B. I prefer quiet parties with good conversation.

2. A. There are some movies I enjoy seeing a second or even a third time.
   B. I can't stand watching a movie that I've seen before.

3. A. I often wish I could be a mountain climber.
   B. I can't understand people who risk their necks climbing mountains.

4. A. I dislike all body odors.
   B. I like some of the earthy body smells.

5. A. I get bored seeing the same old faces.
   B. I like the comfortable familiarity of everyday friends.

6. A. I like to explore a strange city or section of town by myself, even if it means getting lost.
   B. I prefer a guide when I am in a place I don't know well.

7. A. I dislike people who do or say things just to shock or upset others.
   B. When you can predict almost everything a person will do and say he or she must be a bore.
8. A. I usually don't enjoy a movie or play where I can predict what will happen in advance.
   B. I don't mind watching a movie or play where I can predict what will happen in advance.

9. A. I have tried marijuana or would like to.
   B. I would never smoke marijuana.

10. A. I would not like to try any drug which might produce strange and dangerous effects on me.
    B. I would like to try some of the new drugs that produce hallucinations.

11. A. A sensible person avoids activities that are dangerous.
     B. I sometimes like to do things that are a little frightening.

12. A. I dislike "swingers"
     B. I enjoy the company of real "swingers."

13. A. I find that stimulants make me uncomfortable.
     B. I often like to get high (drinking liquor or smoking marijuana).

14. A. I like to try new foods that I have never tasted before.
     B. I order the dishes with which I am familiar, so as to avoid disappointment and unpleasantness.

15. A. I enjoy looking at home movies or travel slides.
     B. Looking at someone's home movies or travel slides bores me tremendously.

16. A. I would like to take up the sport of water-skiing.
     B. I would not like to take up water-skiing.

17. A. I would like to try surf-board riding.
     B. I would not like to try surf-board riding.

18. A. I would like to take off on a trip with no pre-planned or definite routes, or timetable.
     B. When I go on a trip I like to plan my route and timetable fairly carefully.

19. A. I prefer the "down-to-earth" kinds of people as friends.
     B. I would like to make friends in some of the "far-out" groups like artists or "hippies."

20. A. I would not like to learn to fly an airplane.
     B. I would like to learn to fly an airplane.
21. A. I prefer the surface of the water to the depths.
   B. I would like to go scuba diving.

22. A. I would like to meet some persons who are homosexual
   (men or women).
   B. I stay away from anyone I suspect of being "queer."

23. A. I would like to try parachute jumping.
   B. I would never want to try jumping out of a plane
      with or without a parachute.

24. A. I prefer friends who are excitingly unpredictable.
   B. I prefer friends who are reliable and predictable.

25. A. I am not interested in experience for its own sake.
   B. I like to have new and exciting experiences and
      sensations even if they are a little frightening,
      unconventional or illegal.

26. A. The essence of good art is in its clarity, symmetry
   of form and harmony of colors.
   B. I often find beauty in the "clashing" colors and
      irregular forms of modern painting.

27. A. I enjoy spending time in the familiar surroundings
   of home.
   B. I get very restless if I have to stay around home
      for any length of time.

28. A. I like to dive off the high board.
   B. I don’t like the feeling I get standing on the high
      board (or I don’t go near it at all).

29. A. I like to date members of the opposite sex who are
   physically exciting.
   B. I like to date members of the opposite sex who share
   my values.

30. A. Heavy drinking usually ruins a party because some
   people get loud and boisterous.
   B. Keeping the drinks full is the key to a good party.

31. A. The worst social sin is to be rude.
   B. The worst social sin is to be a bore.

32. A. A person should have considerable sexual experience
   before marriage.
   B. It’s better if two married persons begin their
   sexual experience with each other.
33. A. Even if I had the money I would not care to associate with flighty persons like those in the "jet set."
   B. I could conceive of myself seeking pleasure around the world with the "jet set."
34. A. I like people who are sharp and witty even if they do sometimes insult others.
   B. I dislike people who have their fun at the expense of hurting the feelings of others.
35. A. There is altogether too much portrayal of sex in movies.
   B. I enjoy watching many of the "sexy" scenes in movies.
36. A. I feel best after taking a couple of drinks.
   B. Something is wrong with people who need liquor to feel good.
37. A. People should dress according to some standards of taste, neatness, and style.
   B. People should dress in individual ways even if the effects are sometimes strange.
38. A. Sailing long distances in small sailing crafts is foolhardy.
   B. I would like to sail a long distance in a small but seaworthy sailing craft.
39. A. I have no patience with dull or boring persons.
   B. I find something interesting in almost every person I talk with.
40. A. Skiing fast down a high mountain slope is a good way to end up on crutches.
   B. I think I would enjoy the sensations of skiing very fast down a high mountain slope.
APPENDIX B

INFORMED CONSENT

Please read this consent form. If you have any questions ask the test administrator and he/she will answer the question.

You are invited to participate in a study investigating the relationship between substance abuse and sensation seeking behavior. You will be completing a self report form called the Sensation Seeking Scale. You will be asked to read the directions before answering the items on the form. There are a total of 40 items on the form and the entire form can be completed in approximately 12 to 20 minutes. The purpose of this study is to discover better treatment methods for substance abuse.

Prior to completing the Sensation Seeking form, you will be asked to give information about yourself on a separate form. This form will be given a number and from that point you will be identified by a number. This is done in order to protect your privacy. The information on the form will only be used by the investigating student to determine whether factors such as age, race, and history seem to effect responses. Your participation in this research project is entirely voluntary. Should you wish to terminate your participation, you are free to do so at any point. There is no risk of discomfort involved in the completion of this study. Your participation in this study has absolutely no effect on your DUI Evaluation results. If you have any questions feel free to ask the administrator.

Thank you for your participation.

I, ____________________________________________, have read the above information and have decided to participate. I understand that my participation is voluntary and that I may withdraw at any time after signing this form should I choose to discontinue participation in this study.

(Signature of Participant)  (Date)

(Signature of Administrator)

THIS PROJECT HAS BEEN REVIEWED BY THE EMPORIA STATE UNIVERSITY COMMITTEE FOR THE PROTECTION OF HUMAN SUBJECTS.
APPENDIX C

Demographic Information

Name (Please Print)______________________________
Age____________
Level of Education__________________________
Total number of DUI's you have received____________
Have you ever used a drug other than alcohol?(Y/N)_____ 
Client Number for research__________
I, Pamela Marie Jenkins, hereby submit this thesis/report to Emporia State University as partial fulfillment of the requirements for an advanced degree. I agree that the Library of the University may make it available for use in accordance with its regulations governing materials of this type. I further agree that quoting, photocopying, or other reproduction of this document is allowed for private study, scholarship (including teaching) and research purposes of a nonprofit nature. No copying which involves potential financial gain will be allowed without written permission of the author.

Signature of Author

May 11, 1998

Date

Responses Of Male DUI Offenders On The Sensation Seeking Scale

Title of Thesis/Research Project

Signature of Graduate Office Staff

May 14, 1998

Date Received