THE RELATIONSHIP OF SELF-MONITORING, PSYCHOLOGICAL DISTRESS, AND SOCIAL COMPARISON WITH SUBSTANCE USE IN COLLEGE STUDENTS

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CHAPTER I

INTRODUCTION

Substance experimentation appears to be a developmental phenomenon in the United States, and it has become an alarming problem among adolescents. About one in four adolescents meet the criteria for substance abuse; while one in five adolescents meet the criteria for substance dependency (Young, Corley, Stallings, Rhee, Crowley & Hewitt, 2002). Alcohol has been the substance abused most often by adolescents whereas marijuana has been the illicit drug most related to substance use problems. Capture rates, which refers to the percentage of individuals who continue to use substances after trying them, were highest for marijuana, followed by capture rates for amphetamines, ecstasy, and cocaine for adolescents. Furthermore, polysubstance use is of concern. For example**,** early onset of marijuana use predicted regular alcohol use for adolescents (Manning, Best, Rawaf, Rowley, Floyd & Strang, 2002).

College students' use of substances is also a problem, especially during the first two years of their college careers (McMillan & Conner, 2002). Marijuana and alcohol are the substances most likely to be used by college students (Eisenberg & Wechsler, 2003**).** Many students report the reason for drinking alcohol is to get drunk and college student sports fans tend to engage in high levels of binge drinking (Nelson & Wechsler, 2003). Alarmingly, two out of every five undergraduate college students engage in binge drinking (Wechsler, Lee, Kuo, Seibring, Nelson, and Lee, 2002).

Substance use is influenced by a number of factors including biological, psychological, and social/environmental factors. For example, there is evidence of gender differences in substance use. Males are more likely to use substances than females (Young et al., 2002). In addition, individuals who have family members with substance use disorders are at greater risk for having substance use disorder themselves. Psychological factors such as depression have been linked to substance use. In addition, individuals who have substance use disorders are likely to suffer from mood, anxiety, and/or personality disorders (Stinson, Grant, Dawson, Ruan, Huang, Saha, 2005). Social factors such as having friends and/or romantic partners who use substances (Taylor, 2005) and experiencing attachment problems in relationships (Barker & Hunt, 2004) can influence a person's use of substances. In one study (Swendsen, Conway, Rounsaville, & Merikangas, 2002), closeness to mothers was negatively correlated with psychological distress, delinquency, and substance use. Other factors such as low socioeconomic status and being without a spouse were associated with substance use disorders (Stinson et al., 2005). Other psychosocial factors related to substance use include self-monitoring (Perrine and Aloise-Young, 2004; Booth-Butterfield, Anderson, and Booth-Butterfield, 2000), psychological distress (Flynn, Walton, Curran, Blow, and Knutzen, 2004), and social comparison (McShane and Cunningham, 2003; Novak and Crawford, 2001). Of interest in this study are the relationships of social comparison, self-monitoring, and psychological distress with substance use among college students.

Social comparison refers to the associations individuals make with others in order to rank themselves on social status (Allan & Gilbert, 1995). Associations can be upward (e.g., "I am not as good.") or downward (e.g., "I am better than ___."). People tend to

compare themselves to others in order to assess their 1) social rank, 2) their level of attractiveness, as well as 3) their fit with a group.

To date, a few researchers have investigated the relationship between social comparison and substance use, primarily alcohol use. In general, findings indicated that higher levels of social comparison have been associated with more alcohol use in college students (McShane & Cunningham, 2003; Novak & Crawford, 2001).

Self-monitoring refers to self-control of expressive behavior (Snyder, 1974). Self-monitoring can be divided into two groups—high and low. A high self-monitor is an individual who engages in control of expressive behavior to fit in with the immediate environment. A low self-monitor is an individual who engages in little or no self-control of expressive behavior. Both types of self-monitoring styles can be adaptive or maladaptive depending on the situation. For example, high self-monitors tend to make better leaders than low self-monitors (Garland & Beard, 1979) whereas low self-monitors tend to make better romantic partners than high self-monitors (Snyder & Simpson, 1984).

Only a few studies have been conducted to explore the relationship between self-monitoring and substance use and the findings have been mixed. Some researchers have found a significant and positive relationship between self-monitoring and nicotine use in fifth and seventh graders (Perrine & Aloise-Young, 2004) while other researchers have found a significant and negative relationship between these two variables in adolescents (Booth-Butterfield, Anderson, and Booth-Butterfield, 2000). Even fewer researchers have attempted to predict substance use by self-monitoring type. To date, researchers have predicted marijuana use in college students for low self-monitors (Bauman &

Geher, 2002). More research is needed to better understand the relationship between self-monitoring and substance use among college students.

Social comparison and self-monitoring appear to be subtle forms of adaptation to the environment. Failure to adapt to one's surroundings may cause psychological distress, making one more vulnerable to use substances.

Psychological distress is any type of emotional suffering, which can include depression, anxiety, anger, grief, and so forth. Psychological distress (i.e., general distress, depression, anxiety, psychosis) has been positively correlated with substance use in research literature among adolescents and adults **(**e.g**.,** Broman, 2005, Geisner, Larimer & Neighbors, 2004; Luthar & Becker, 2002; Ong & Walsh, 2001).

More research is needed to understand the factors that influence substance use experimentation and substance use in college students. Given the rates of alcohol and drug use among college students as well as the importance of peers and social relationships during college, it is important to understand how college students' feelings (i.e., psychological distress), their views of themselves in relation to others (i.e., social comparison), and their self-control of expressive behavior (i.e., self-monitoring) may be related to their use of substances.

Purpose of the Study

The purposes of this study were to 1) explore the relationships between and among social comparison, self-monitoring, and psychological distress with substance use among college students 2) explore social comparison, self-monitoring, and psychological distress as possible predictors of substance use among college students and 3) explore the effects of social comparison, self-monitoring, and psychological distress by substance use

risk groups (i.e. minimal risk of having a substance use disorder and vulnerable to risk of having a substance use disorder).

Significance of the Study

Substance use may be a coping strategy to deal with perceived social inferiority, the attempts to control and manage expressive behavior, and feelings of psychological distress. If so, counseling and student personnel services could be geared towards the preoccupation of impression management and expressive behavior, psychological distress, and social adequacy may be warranted.

Research Questions and Hypotheses

1) What are the bivariate relationships between and among self-monitoring, psychological distress, social comparison, and substance use? It was hypothesized that there would be significant positive bivariate relationships between among self-monitoring, psychological distress, and substance use, but also significant negative bivariate relationships between social comparison (lower scores indicate more downward comparisons in relation to others) and the following variables: psychological distress, self-monitoring, and substance use.

2**)** What is the nature of linear relationship of social comparison and self-monitoring with substance use in college students? It was hypothesized that self-monitoring and social comparison would have a significant linear relationship with substance use in college students.

3) What is the nature of linear relationship of social comparison and self-monitoring with substance use in college students above and beyond the contribution of psychological distress to substance use? It was hypothesized that self-monitoring and social

comparison would have a significant linear relationship with substance use in college students above and beyond the contribution of psychological distress to substance use. 4) Are there significant substance use risk group difference (i.e., individuals who are at minimal risk for a substance use disorder and those who are vulnerable to risk of having a substance use disorder) in terms of social comparison, psychological distress, and self-monitoring? It was hypothesized that there would be significant substance use risk group differences (i.e., between individuals who are at minimal risk for a substance use disorder and those who are vulnerable to risk of having a substance use disorder) in terms of social comparison, psychological distress, and self-monitoring. In particular, it was hypothesized that students who were vulnerable to risk of having a substance use disorder would report higher levels of psychological distress and self-monitoring but lower levels of social comparison.

Assumptions

There were several general assumptions associated with conducting this study. First, it was assumed that participants would complete the questionnaire in an honest fashion. Second, it was assumed that the participants would complete the questionnaires without significant distractions, given that this was an on-line study. Third, it was assumed that the Self-Monitoring Scale, the Social Comparison Scale, the Distress, Anxiety, and Stress Scale-21, the Simple Screening Instrument for Substance Abuse, and the Adolescent Alcohol and Drug Involvement Scale were reliable and valid measures of self-monitoring, social comparison, psychological distress, and substance use respectively. Finally, it was assumed that undergraduate student participants from a

regional southern university were representative of undergraduates from other educational institutions in the United States.

There are also several statistical assumptions. First, it was assumed that the variables (self-monitoring, psychological distress, social comparison, and substance use) had a linear relationship. Second, it is assumed that the residuals from the variables had a normal distribution and that the dependent variables had equal levels of variance across the range of predictor variables.

Definition of Terms

Psychological distress - any type of negative emotional state that results in an unpleasant feeling (Henry & Crawford, 2005). Psychological distress will be measured by the Depression Anxiety Stress Scale-21 (DASS-21) which has three subscales: depression, anxiety, and stress (Lovibond & Lovibond, 1995). In this study, the total DASS-21 score was used to measure levels of psychological distress in college students.

Self-monitoring – an adaptive type of self-control over expressive behavior (Snyder, 1974). Self-monitoring will be measured by the Self-Monitoring Scale (SMS) which includes three factors: expressive self-control, social stage presence, and other-directedness (Synder & Gangestad, 1986). In this study, the total SMS score was used to measure levels of self-monitoring in college students.

Social comparison – an adaptive function that individuals use with others in order to rank themselves on social status (Allan & Gilbert, 1995). Social comparison will be measured by the Social Comparison Scale (SCS) which includes three subscales: social rank, attractiveness, and group fit. In this study, the total SCS score was used to measure levels of social comparison in college students.

Substance abuse – a maladaptive pattern of substance use that results in significant adverse consequences for the user (American Psychiatric Association, 2000). Substance abuse will be measured by the Simple Screening Instrument for Substance Abuse (SSI-SA; Winters & Zenilman, 1994). Consequences of substance abuse refer adverse outcomes related to substance use.

Substance dependence – a maladaptive pattern of substance use that results in significant impairment of cognition, behavior, and/or physiology for the user (American Psychiatric Association, 2000).

Substance use – the use of a drug, a medication, or a toxin (American Psychiatric Association, 2000). Substance use will be measured by the Adolescent Alcohol and Drug Involvement Scale (AADIS; Moberg, 2005). In this study, the total score of the AADIS drug use history grid was used to assess substance use levels in college students.

Substance use risk — the level of risk of substance use identified by cutoff scores for the SSI-SA and AADIS measures. College students were classified into the "minimal risk" of substance use group if they scored less than 4 on the SSI-SA and less than 37 on the AADIS; college students were classified into the "substance use risk" group if they scored 4 or higher on the SSI-SA or if they scored 37 or higher on the AADIS.

CHAPTER II

REVIEW OF LITERATURE

The theories and research findings related to substance use, self-monitoring, social comparison, and psychological distress issues for college students were reviewed in this chapter.

Theories of substance use

There are many theories of substance use in the literature. However, theorists differ on the explanation of the etiology and maintenance of substance use problems. The theories presented in this chapter include biological theories, psychodynamic theories, sociocultural theories, behavioral theories and cognitive-behavioral theories.

Biological theorists postulate that substance use has a genetic component and can be passed down as a trait from one generation to the next (Nolen-Hoeksema, 2004). Biological theorists also explain how substances change neuron pathways in the brain, resulting in a sense of need to use a substance (Kalat, 2004). Specifically, most drugs either increase the release of dopamine or decrease the reuptake of dopamine, because dopamine is considered to be a pleasure chemical that is released in the nucleus accumbens. The nucleus accumbens is thought to be a pleasure area in the brain, so the user experiences a feeling of satisfaction after using a substance.

Psychodynamic theorists explain substance use in terms of emotional discomfort or psychic structures. Some suggest that individuals use substances because they are

uncomfortable with their emotions, so any unpleasant feeling could trigger the substance use (Futterman, Lorente & Silverman, 2005). Other psychodynamic theorists believe that: (a) substance users have strict superegos and the users need substances to cope with the superego's demands, (b) substance abuse is caused by an inadequate ego, and/or (c) drugs serve as a form of defense against intrapsychic conflict (Hesselbrock, 1999). In other words, psychodynamic theorists may argue that (a) substance users have strict and harsh methods of evaluation and need substances to handle the methods of evaluation, (b) individuals use substances because their sense of reality is maladaptive due to the ego's inability to regulate the id and superego, and/or (c) substances are a coping strategy for psycho-emotional conflict.

Sociocultural theorists attempt to explain substance use as the result of distress and an environment that supports substance use including family, peers, and society. Peer influence is a common factor in substance use in that peer groups tend to influence individual members' thoughts and behaviors about alcohol and substance use (Nolen-Hoeksema, 2004). This influences the individual's motivation for using a substance. Another sociocultural factor of substance abuse is ties to family and community. Familial bonds and community ties can buffer adolescents from using substances, so lack of healthy family and community bonds and values may be a cause of substance use and other deviant behaviors. It is important to note that in order for a family or community bond to occur, the individual must be given a chance to interact with the family or the community in ways which are viewed as positively rewarding. If interactions are negative or lacking, then the individual may develop a pattern of substance use (Hesselbrock, 1999).

Behavioral theorists explain substance use behavior in terms of classical and operant conditioning. Classical conditioning occurs when an unconditioned stimulus is paired with an unconditioned response. The unconditioned response then becomes a conditioned response. Substances are viewed as unconditioned stimuli, situations or locations are conditioned stimuli, and drug cravings are the conditioned responses. The substances are paired with cravings, so the substance user seeks substances when the cravings arise (Hesselbrock, 1999).

Operant conditioning occurs when an individual receives positive or negative reinforcement. Positive reinforcement occurs when a substance is taken and the user experiences a desirable affect. Negative reinforcement occurs when a substance is taken and the user no longer experiences an undesirable emotion. Both types of reinforcement increase the likelihood that the substance use behavior will be repeated (Hesselbrock, 1999).

Cognitive behavioral theorists explain substance use in terms of social learning theory. Social learning theory has four principle constructs that explain human behavior: (a) differential reinforcement (consequences of a behavior), (b) vicarious learning/modeling (learning by observing others), (c) cognitive process (encoding, arranging, and retrieving information), and (d) reciprocal determinism (interlocking thoughts or behaviors) (Hesselbrock, 1999). Drinking and drug norms are determined by culture. Cognitive behaviorists believe that drinking and drug related behaviors begin as a process of socialization. If the individual experiences a reduction of stress after using a substance, then the drinking/drug behavior has been reinforced, increasing the likelihood that a substance abuse disorder might occur. The individual believes that he or she can

decrease stress again by using the same substance, so the substance use becomes a coping skill for stressors. Substances are likely to be used as coping skills if the user has low self-efficacy. Self-efficacy is the belief that one has the ability to cope with stressors effectively (Maisto, Carey & Bradizza, 1999). Self-monitoring and social comparison are learned behaviors; therefore, they can be explained by social learning theory.

Social comparison

Social comparison is defined as the associations individuals make with others in order to rank themselves on some type of social construct (Allan & Gilbert, 1995) and adjust to social norms (Corning, Krumm, & Smitham, 2006). Social comparison can be viewed as an adaptive function that allows individuals to form dominance hierarchies and group membership (Allan & Gilbert). Social comparison and self-monitoring are similar, because they both involve social evaluation of themselves and others (Allan & Gilbert; Snyder, 1974). Social comparison is different from self-monitoring in terms of purpose. The purpose of social comparison is to adapt to one's environment in a way that will increase survival by monitoring and behaving according to social structure and peer affiliation (Allan & Gilbert). Self-monitoring may have more than one purpose. For example, self-monitoring may serve to: 1) communicate one's true emotional feelings, 2) communicate an arbitrary feeling that is incongruent with one's true emotional state, 3) cover or hide one's emotional state, and/or 4) hide an inappropriate feeling by expressing an appropriate feeling. Each goal attempts to make the individual look more favorable among his or her peers (Snyder).

In addition, social comparison can be explained by social learning theory as an informal type of communication between individuals (Festinger, 1950). Individuals learn

to use social comparison to assess themselves in relation to others for the purpose of maximizing their survival. Social comparison has three primary dimensions (Allan & Gilbert, 1995). The first dimension contains comparisons of power, strength, and assertiveness. The second dimension contains comparisons of ability and attractiveness, and the third dimension contains comparisons of group fit. Individuals may engage in upward and downward social comparisons. Upward social comparison can be defined as the comparison of an individual with another individual who is perceived to be more successful (Wood, Waterloo, Michela & Giordano, 2000). Downward social comparison can be defined as the comparison of an individual with another individual who is perceived to be less successful. Social comparison can be measured by the Social Comparison Scale (Allan & Gilbert, 1995), the Iowa-Netherlands Comparison Scale Orientation measure (Corning, Krumm, & Smitham, 2006), and the Attention to Social Comparison Information subscale of the Concern for Appropriateness Scale (Novak & Crawford, 2001).

Social comparison has been significantly and negatively correlated with eating disorders (Corning et al.), general psychopathology (Allan & Gilbert, 1995), and self-concept (Butzer & Kuiper, 2006). It has been significantly and positive correlated with a number of variables including anxiety and depression (Butzer & Kuiper), self-monitoring (Miyake & Zuckerman, 1993; Novak & Crawford), pride (Webster, Duvall, Gaines & Smith, 2003), self-esteem (Chung & Mallery, 1999; Corning et al.; Jones & Buckingham, 2005; Lyubomirsky & Ross, 1997), optimism (Lyubomirsky & Ross), confidence (Orive, 1988), smoking cessation (Gerrard, Gibbons, Lane, & Stock, 2005), and substance use (McShane & Cunningham, 2003; Novak & Crawford).

Social comparison and substance use. A few researchers have explored the relationship between social comparison and substance use (Gerrard, Gibbons, Lane & Stock, 2005; McShane & Cunningham, 2003; Novak & Crawford, 2001). Most definitions of social comparison seem to focus on group affiliation or as feeling of belonging and identification with another group.

McShane and Cunningham (2003) investigated the role of alcohol and social comparison in a Canadian sample. Participants were 75 students and non-students who identified themselves as current drinkers of alcohol. The participants completed a demographic questionnaire and the Alcohol Use Disorders Identification Test to identify drinking problems, risks associated with drinking alcohol, average consumption of alcohol per week, and the consequences of drinking alcohol. Then the participants were given one of three different pamphlets. The first pamphlet described drinking patterns of a Canadian population, the second described drinking patterns of Canadian college students, and the third described drinking patterns of United States college students. All pamphlets contained the same information; only the title of the pamphlet and appropriate national flag were different. The drinking norms were identical so social comparison could be measured directly. Participants were asked to complete the Stages of Change Readiness and Treatment Eagerness Scale (SOCRATES) and answer seven other questions developed by the researchers regarding the relevancy of the information presented in the pamphlet, the likelihood that they would recommend the pamphlet to a friend, and imagined personal alcohol problems. Social comparison was defined as the closeness of an individual to a particular group; therefore, social comparison was measured by asking participants to compare themselves to the individuals described in

the pamphlets and rate how close or similar they were in terms of their experiences. Closeness referred to perceived similarity.

Canadian participants who identified as problem drinkers (as measured by SOCRATES) and received the American pamphlet reported higher rates of recognition of problem drinking than problems drinkers in the other pamphlet groups. Interestingly, the researchers found that the normative information from social groups that were the most different from the participants' information about their social groups was the most helpful in identifying problem drinkers (McShane & Cunningham, 2003). The researchers expected participants to recognize personal drinking problems in their own social groups; however, they found that the participants had an easier time identifying personal drinking problems by reading about groups who were dissimilar from them. Unfortunately, the researchers used a general definition of social comparison, so it was unclear if social comparison or simply affiliation was being measured. The researchers also failed to explain how social comparison may influence use of alcohol, and no significant differences were found between students and non-students.

Social comparison, as measured by social group preferences**,** has also been found to influence smoking cessation. Gerrard, Gibbons, Lane, and Stock (2005) examined the impact of low preference for social groups on successful smoking cessation. Participants included 151 adults who attended 12 to 15 smoking cessation sessions over nine weeks in an outpatient clinic. The researchers collected information regarding smoking history and preferred affiliations with others using measures that they developed. Results indicated that participants who preferred greater social affiliations were more likely to quit smoking than participants who preferred not to identify with a group. In addition,

participants who preferred to associate with other participants who were doing well were more likely to be successful in smoking cessation than participants who did not prefer to associate with others. The findings of this study were significant in that the participants were followed over 9 weeks, so the effects of social comparison were viewed over time. However, a broad definition of social comparison was used. It was viewed primarily as social affiliations.

Novak and Crawford (2001) defined social comparison as one's vulnerability to peer influence, in particular, noticing and attending to highly sensitive social cues. Social comparison was explored as a moderator of college campus drinking norms and alcohol use in a sample of 261 undergraduates from a Midwestern university. Participants were asked to complete a survey developed by the researchers about perceived drinking norms, a measure of peer influence that focuses on individual sensitivity to social cues (Attention to Social Comparison subscale of the Concern for Appropriateness scale), and a self-report measure of alcohol use that included questions regarding average amounts of alcohol consumed in a week and average intoxication levels within the past month. The researchers found that students tended to overestimate the frequency and amount of alcohol consumed by other students. Students who consumed alcohol more often tended to report being vulnerable to peer pressure in general and were more likely to notice and attend to highly sensitive social cues through social comparison than students who consumed less alcohol. Another significant finding was that sensitivity to social cues allowed the participants to better identify with and feel welcomed by a particular group. This study serves as evidence for the relationship between social comparison and substance use in a college population. It is also one of the few studies that defined social

comparison beyond affiliation. The surveys developed by the researchers to measure drinking behavior were unavailable, so it is difficult to determine if the questionnaire was a valid measure.

In reviewing the research literature, the findings regarding the relationship between social comparison and substance use have been mixed. Two groups of researchers **(**Gerrard, Gibbons, Lane, & Stock, 2005; McShane & Cunningham, 2003) defined social comparison in terms of one's perception of affiliation to others. In each of these two studies, social comparison was related to substance use in different ways. McShane and Cunningham (2003) found that perceiving social groups as different from one's personal social group had more an influence over participants' recognition of their drinking behavior than social groups that were perceived as similar to one's personal social group (McShane & Cunningham, 2003). In other words, social groups different from one's own social group helped individuals more than social groups similar from one's own social group in identifying his or her individual problem drinking behavior. Gerrard et al. (2005) found that similarities between individuals are more likely to influence smoking cessation than differences**.**

Novak and Crawford (2001) defined social comparison in broader terms as one's vulnerability to peer pressure in general and noticing/attending to social cues. In that study, there was a significant and positive relationship between social comparison and alcohol consumption in college students.

One of the weaknesses of these previous research studies is that none of the researchers used measures of social comparison that assessed the dimensions of Allan and Gilbert's (1995) definition of social comparison—attractiveness, ability, power,

strength, and assertiveness. Until researchers use more comparable definitions of social comparison, it will be difficult to aggregate the findings of the social comparison and substance use literature.

This purpose of the present study is to explore the relationship between social comparison and substance use in college students, using a measure of social comparison that assess the dimensions of attractiveness, affiliation, and vulnerability and sensitivity to social cues.

Self-monitoring

Self-monitoring is defined as "the extent to which [individuals] can and do observe and control their expressive behavior and self-presentation" (Snyder & Gangestad, 1986, p. 125). Lennox and Wolfe (1984) define self-monitoring as "the degree to which people use social comparison information and attend to cues to guide their own communication and communicative adaptation" (p. 140). For the purposes of this paper, I adopted Snyder and Gangestad's definition of self-monitoring. Self-monitoring can be divided into two categories: high and low. High self-monitors regulate their behavior and presentation in social situations. Low self-monitors maintain a stable pattern of behavior and presentation regardless of the social setting. Low self-monitors usually do not engage in behaviors that are atypical of their personalities. Self-monitoring can be measured using Snyder's Self-Monitoring Scale (Gangestad & Snyder, 2000), Lennox and Wolfe's Revision of the Self-Monitoring Scale (Lennox and Wolfe, 1984), and the Junior Self-Monitoring Scale (Perrine & Aloise-Young, 2004).

The construct of self-monitoring was developed to resolve a dichotomy of state versus trait theories of personality (Gangestad & Snyder, 2000). Individuals tend to

regulate their behavior in response to social influence (state) and/or their personality style (trait) (Feist & Feist, 2006). Therefore, self-monitoring is viewed as an adaptive method of control. Self-monitoring theorists argue that high self-monitors concentrate on forces that operate outside of themselves (state), and thus are influenced by others. Low self-monitors tend to concentrate on forces that operate within themselves (trait), suggesting that low self-monitors are not easily influenced by others (Gangestad & Snyder).

Self-monitoring has been related to a number of variables. Specifically, self-monitoring has been negatively correlated with: emotional dissonance, organizational commitment (Abraham, 1999), academic integration (Guarino, Michael & Hocevar, 1998), priming (DeMarree, Wheeler & Petty, 2005), introversion (Osborn, Feild & Veres, 1988) trust (Norris & Zweigenhaft, 1999), self-esteem, outspokenness (Premeaux & Bedeian, 2003), and employee turnover (Allen, Weeks & Moffitt, 2005). Self-monitoring has been positively related to: commitment, sexual promiscuity, (Snyder & Simpson, 1984), impression management (Bolino & Turnley, 2003; Turnley & Bolino, 2001), extroversion (Osborn et al.), memory recall (Beers, Lassiter & Flannery, 1997), discrimination (Jawahar & Mattsson, 2005), prejudice (Klein, Snyder & Livingston), femininity (Smith, Berry & Whiteley, 1997), acculturation (Harrison, Chadwick & Scales, 1996), self-disclosure (Shaffer & Pegalis, 1998), social comparison (Miyake & Zuckerman, 1993; Novak & Crawford, 2001), psychological distress (Butzer & Kuiper, 2006; Buunk, Zurriaga & Gonzales, 2006; Corning, Krumm & Smitham, 2006), and substance use (Bauman & Geher, 2002; Booth-Butterfield, Anderson & Booth-Butterfield, 2000).

Self-monitoring and substance use. Self-monitoring and use of substances have been found to have a relationship (Booth-Butterfield et al., 2000; Perrine & Aloise-Young, 2004). However, the nature of the relationship tends to differ by study. Some researchers have found a significant and positive relationship between these two variables (Perrine & Aloise-Young, 2004) while other researchers have found a significant and negative relationship between these two variables (Booth-Butterfield et al., 2000). Other researchers have attempted to predict substance use by self-monitoring type (Bauman & Geher).

Booth-Butterfield et al. (2000) investigated the relationship of self-monitoring and health locus of control on adolescent tobacco use. They defined health locus of control as one's belief in his or her ability to control his or her physical health. Rural adolescents, 12 to 19 years of age, completed questionnaires that included a shortened version of the Multidimensional Health Locus of Control scale, the Revised Self-Monitoring Scale, a measure of tobacco use created by the researchers, and a demographic survey. The researchers found that adolescent tobacco use did not appear to be related to health locus of control. They also found that adolescents who abstained from tobacco scored higher on self-monitoring than adolescents who use tobacco, meaning that tobacco use was more likely to happen among low self-monitors. The researchers explained that adolescent low self-monitors are more likely than adolescent high self-monitors to believe that external forces control their health, so low self-monitors may be more likely than high self-monitors to use tobacco because they do not assume personal responsibility for their health. The researchers offered another explanation for the finding that low self-monitors were more likely to use tobacco than high self-monitors. They suggested that adolescent

low self-monitors may not be aware of peer perceptions because they are unable to change their patterns of communication to produce positive outcomes like abstaining from tobacco.

The researchers used valid and reliable measures for self-monitoring and health locus of control and used a liberal definition of tobacco use that could be easily understood by the targeted group. However, the researchers noted poor internal consistency in the health locus of control scales. The Revised Self-Monitoring Scale by Lennox and Wolfe was used in the study. It measures "sensitivity to expressive behavior of others and ability to modify self-presentation" (Booth-Butterfield et al., 2000, p. 1349).

Bauman and Geher (2002) examined the results of false consensus effects on individual behavior, including marijuana use. The authors define false consensus effects as the social phenomenon where individuals overestimate the degree to which others think and behave like them. Participants included 230 college students from the northeastern United States. The participants were asked to complete a packet of questionnaires that included Marlowe-Crowne scale of social desirability, the Self-Monitoring Scale, the Social Self-Esteem scale, and an informal measure of false consensus that asked participants to rank their position on issues like abortion and indicate whether or not they would ever engage in the behaviors associated with each issue. The degree of false consensus in combination with attitudes towards the legalization of drugs significantly predicted the likelihood of marijuana use in high self-monitors those who engaged in expressive self-control. However, attitudes towards the legalization of drugs were the only significant predictors of marijuana use for low self-

monitor, those who engage in little or no expressive self-control. As predicted, the influence of peer perceptions via the false consensus significantly affected high self-monitors only. Low self-monitors were not significantly influenced by their peers. This is one of the few studies that used the same measure of self-monitoring that will be used in this study, so the definition of self-monitoring that was used and that the measure is valid and reliable. The researchers gave appropriate operational definitions for their constructs despite using a measure of false consensus that lacked established normative data.

Perrine & Aloise-Young (2004) investigated the role of self-monitoring as a moderator of nicotine use in the form of peer pressure. Fifth and seventh grade students participated in a longitudinal study. Participants completed the Junior Self-Monitoring Scale and surveys of cigarette use and peer pressure. Participants completed the surveys again two years later. The researchers found that self-monitoring served as a moderator of the relationship between cigarette smoking and passive peer pressure—an indirect form of peer pressure based on observer perception. Passive peer pressure is subtle, implicit, and subject to interpretation by the perceiver. Self-monitoring did not have a significant relationship with cigarette use and active peer pressure. Active peer pressure is direct and is interpreted as such by all observers. Self-monitoring had a significant and moderate positive relationship with cigarette use. High self-monitors were found to be three and a half times more likely than low self-monitors to progress from a being a nonsmoker to a becoming a smoker if he or she believes cigarette smoking to be a normal, acceptable behavior.

These results are different from those in the Booth-Butterfield, Anderson, and Booth-Butterfield study, which reported that low self-monitoring adolescents were more likely to engage in tobacco use than high self-monitoring adolescents. Like the previous study (Perrine & Aloise-Young), the researchers in this study suggest that self-monitoring has a direct relationship with cigarette use. This study is important because it supports a relationship between self-monitoring and tobacco use and the sample of participants included a significant amount of ethnically diverse individuals that may be more generalizable to the U.S. population than studies that contain mostly White participants. Forty-five percent of the participants identified as non-Hispanic White. A weakness of the study is the significant rate of participant attrition that was attributed to parental non-consent and the high mobility rate of students.

As stated previously, self-monitoring has been associated with tobacco use (Booth-Butterfield, Anderson & Booth-Butterfield; Perrine & Aloise-Young, 2004) and marijuana use (Bauman & Geher, 2002) in psychological literature. The nature of the relationship between self-monitoring and tobacco use is still unclear. Researchers from one study found a significant positive relationship between self-monitoring and tobacco use among adolescents (Perrine & Aloise-Young) while researchers from another study found a negative relationship between self-monitoring and tobacco use among adolescents (Booth-Butterfield et al.). Additional research is needed to clarify the relationship between substance use and self-monitoring. Research is also needed to determine the relationship between all types of substance use and self-monitoring and the use of multiple types of substances and self-monitoring.

Social comparison and self-monitoring. Few researchers have investigated the relationship between social comparison and self-monitoring. Social comparison and self-monitoring have been investigated in relation to false consensus (Miyake & Zuckerman, 1993), advice seeking and social norms (Harnish & Bridges, 2006), and decision-making (Kilduff, 1992).

Miyake and Zuckerman (1993) examined the likelihood of participants comparing themselves to attractive targets on five measures: false consensus, comparison of others, affiliation with targets, assumed similarity, and perceived similarity between targets and participants. Participants were undergraduates from a psychology class at a small eastern university. Participants were asked to complete three questionnaire packets that consisted of the Self-Monitoring Scale, the NEO Personality Inventory, and an academic achievement inventory. The participants were videotaped reading a passage from a history book that described a movie. Next, the participants were asked to watch the videotapes of other participants. The participants were asked to guess the behavioral choices of the targets and rate each target on the same scales the participants had completed earlier. The participants were asked to provide a behavioral response to the imaginary situation. The second packet asked participants to rate themselves on the five constructs of the NEO Personality Inventory: openness, neuroticism, extraversion, agreeableness, and conscientiousness. The final questionnaire asked participants to provide academic information and goals. Participants were placed in front of a camera and asked to guess the behavioral choices that the actors on the screen chose based on physical appearance and verbal attractiveness. Affiliation, similarity, and average differences (components of social comparison) were more likely to affect the answers of

high self-monitors than low self-monitors, so those who engaged in a great amount of expressive self-control were more likely to be affected by affiliation, similarity, and other differences among individuals than those who engaged in little or no expressive self-control. Judges' perceived attractiveness of them and their self-monitoring scores correlated moderately and positively, indicating that self-monitoring and the perception of attractiveness were positively related. These findings provide evidence for a positive relationship between self-monitoring and attractiveness as a component of social comparison in a college sample in this study. However, it should be noted that differences between high and low self-monitors on the combined factors of social comparison did not reach statistical significance, so it is difficult to form conclusions regarding the exact nature of the relationship. The researchers chose a formal measure of self-monitoring that has established normative data but failed to use a formal and validated measure of social comparison. In addition, social comparison was measured as social affiliation.

Another study (Harnish & Bridges, 2006) was conducted to explore self-monitoring type of individuals who provide and use social comparison information. Participants included 138 undergraduate students from an eastern university. They completed the Self-Monitoring Scale, a questionnaire constructed by the researchers to measure who participants received advice from and how many advisors they had and their advisor network. Students were more likely to have advisors who matched their self-monitoring type in five domains: clothing/fashion, movies, dating, volunteerism, and college major. High self-monitors tend to turn to other high self-monitors for advice and low self-monitors tend to turn to other low self-monitors for advice. High self-monitors

were more likely than low self-monitors to turn to advisors for the following domains: clothing/fashion, college major, dating, volunteerism, and music. In sum, high self-monitors tend to turn to advisors in order to meet social goals and project an image that is socially appropriate. The researchers confirmed a significant and positive relationship between self-monitoring and social comparison as high self-monitors are sensitive to environmental cues and turn to other high self-monitors for normative information and advice. A strength of this study is the measurement of advisors. The researchers chose a key person in a student's academic environment who has influence over the student. However, the researchers failed to mention if they had confirmed that a previously established relationship existed between the participant and his or her advisor, so the interpretation of the results is speculative.

In addition to the previous studies, Kilduff (1992) investigated personality differences between individuals in order to assess if and how individuals rely on their friendship networks to make important decisions. Participants included 209 graduate students from a private northeastern university. Participants were mailed questionnaire packets that included informal measures of friendship choice, social uniqueness, and the Self-Monitoring Scale. The questionnaires had an 87 percent response rate. High self-monitors were more concerned with social conformity than low self-monitors. Interestingly, the Other-Directedness subscale of the Self-Monitoring Scale distinguished between social choices. High self-monitors were significantly more likely to make choices similar to that of other high self-monitors compared to the choices of low self-monitors. In other words, participants who engaged in a great amount of expressive self-control were more likely to make decisions similar to other participants who engaged in

great amounts of expressive self-control. This study provides great support for the relationship between the social constructs of social comparison and self-monitoring. Some limitations of this study were the informal measures created by the researchers for this study. Strengths include the relatively large response rate and the thorough investigations of social networks among graduate students.

The relationship between social comparison and self-monitoring is promising, yet more research is needed. In summary, only a few researchers have investigated the relationship between social comparison and self-monitoring. Social comparison was assessed in terms of false consensus, attraction (Miyake & Zuckerman, 1993), advice (Harnish & Bridges, 2006), and decision-making (Kilduff, 1992). Specifically, researchers have found a positive relationship between self-monitoring and social comparison in terms of attractiveness in college students (Miyake & Zuckerman), normative information and advice from college advisors (Harnish & Bridges, 2006), and decision making styles when compared to others (Kilduff, 1992). Like the previous studies, social comparison tended to be measured as social affiliation. Additional research is needed to understand the relationship between social comparison and self-monitoring.

Social comparison, self-monitoring, and substance use. No researchers to date have explored how social comparison and self-monitoring relate to substance use among college students. The only study remotely close to this topic is described below.

Social comparison and self-monitoring were studied in relation to advertisements for tobacco and alcohol to evaluate the effectiveness of image-oriented advertisements in comparison to quality-oriented advertisements (Covell, Dion & Dion, 1994). Participants

included 75 adolescents (ages 12-16) and one of their parents. Participants completed the Self-Monitoring Scale and an informal measure of tobacco and alcohol use. They were also asked to rate a set of 24 advertisements on personal appeal, the measure of social comparison. The researchers found that adolescents and their parents found the image-oriented advertisements significantly more appealing than the quality-oriented advertisements. Adolescent females were the group most likely to prefer image-oriented advertisements to quality-oriented advertisements. However, the researchers failed to find evidence that self-monitoring style influenced advertisements for alcohol and tobacco products.

Additional research is needed to understand the relationships between and among social comparison, self-monitoring, and substance use among college students. In addition, more research is need to understand how psychological distress is related to substance use issues for college students and how psychological distress is related to social comparison and self-monitoring experiences of college students.

Psychological distress

Psychological distress can be defined as any type of negative emotional state that results in an unpleasant feeling (Henry & Crawford, 2005) and may include experiences of anxiety, depression, stress (Lovibond & Lovibond, 1995), somatization, interpersonal sensitivity, hostility, paranoia, and psychosis (Derogatis, 1992). A number of instruments have been developed to measure psychological distress including, but not limited to, the Depression Anxiety and Stress Scales-21 (DASS-21) (Henry & Crawford), the Brief Symptom Inventory (Derogatis & Melisaratos, 1983) and the Symptoms Checklist-90 (Derogatis). In this section, the research literature on the relationships between

psychological distress and the variables of substance use, social comparison, and self-monitoring will be reviewed.

Psychological distress and substance use. A number of studies have been conducted on the relationship between psychological distress and substance use (Degenhardt & Hall, 2001; Luthar & Becker, 2002; Ong & Walsh, 2001, Pirkle & Richter, 2006; Young, Boyd & Hubbell, 2000). Across the board, psychological distress has been significantly and positively related to use of nicotine (Bryant & Zimmerman, 2002; Degenhardt & Hall; Luthar & Becker, 2002; Ong & Walsh; Pirkle & Richter), alcohol (Broman, 2005; Dawson, Grant, Stinson & Chou, 2005; Flynn, Walton, Curran, Blow, & Knutzen, 2004), marijuana (Luthar & Becker), methamphetamine (Herman-Stahl, Krebs, Kroutil & Heller, 2007), cocaine (Young et al., 2000), LSD (Cross & Davis, 1972) and illicit drug relapse (Flynn et al.).

For example, in one study (Flynn, Walton, Curran, Blow, and Knutzen, 2004), psychological distress was investigated in relation to relapses of substance use**.** Two hundred and seventy-eight adult clients from inpatient and outpatient substance user treatment programs were recruited for this study. Participants were asked to complete a questionnaire packet that included a demographic questionnaire, the Arkansas Substance Abuse Outcome Module, the Brief Symptom Inventory, the Hopkins Symptom Checklist, the Lifetime Drinking History, and the Timeline Follow Back. Participants were contacted two years later and given the same questionnaire packet. The researchers found that psychological stress is a robust predictor of alcohol and drug reuse. They also found demographic differences. Being Caucasian and young was correlated with greater substance use. The researchers provide support for the relationship between substance

reuse and psychological distress in this study. One strength of this study was its longitudinal design. Few of the studies reviewed have used longitudinal designs. A weakness of this study and of longitudinal designs is the decreased response rate and attrition after the two year time span.

Psychological distress and substance use tend to co-occur in many age populations such as high school and junior high school students (Bryant & Zimmerman, 2002; Luthar & Becker, 2002), college students (Cross & Davis, 1972; Markman Geisner, Larimer & Neighbors, 2004; Marx & Sloan, 2003), and adults (Degenhardt & Hall, 2001; Herman-Stahl et al., 2007; Young et al., 2000). Gender differences in adolescents were noted by Luthar and Becker. Adolescent girls were more likely to experience depressive symptoms if they used a substance. Low academic achievement, low motivation, truancy, and perceptions of peer substance use were associated with high levels of substance use among students in the ninth grade (Bryant & Zimmerman). Specifically, adolescents who hold negative attitudes about school were more likely to increase their use of cigarettes and marijuana. Among adults, tobacco use has been associated with anxiety disorders, affective disorders, and psychosis (Degenhardt & Hall). The relationship between psychological distress and substance use in adolescents and adults will be explained in depth below.

Bryant and Zimmerman (2002) examined adolescents' use of substances and their psychological distress in relation to academic achievement and demographic variables. Participants included 785 ninth grade students from four public high schools in Michigan. Substance use was measured by questionnaires developed by the researchers. Use of cigarettes, alcohol, and marijuana were investigated. Academic achievement was

measured by self-report of average grades. Truancy was also measured by self-report of how often students had skipped school in the past month, and depression was measured by a subscale of the Brief Symptom Inventory. School stress, academic achievement, parental support, perceptions of peers' positive school experiences, perceptions of peers' positive school attitudes, perceptions of friends' substance use, and perceptions of friends' social support were also measured by self-report. The researchers found that low academic achievement, low motivation, truancy, and perceptions of peer substance use were associated with greater levels of substance use. Adolescents who held negative attitudes about school were more likely than those who held positive attitudes about school to increase their use of cigarettes and marijuana. It was difficult to interpret what constituted psychological distress in this study, because it was never defined. The researchers tended to use the words "stress" and "psychological distress" interchangeably, so it was unclear which variable was being measured. In addition, the measures used in this study were developed by the researchers, so information about reliability and validity is unknown. The researchers sampled primarily African-American students. A sample that includes 80% African-American students may not be representative of the U. S. population as a whole; however, it added valuable information to the substance abuse literature on the experiences of African-American students because most samples from other studies are over-represented by White participants.

Degenhardt and Hall (2001) investigated the role of psychological distress and nicotine use in adults. They examined the relationships between cigarette use, substance use disorders, and psychological distress. Participants were 10,641 adults from Australia. Participants were asked to report if they currently use or have used tobacco in the past

and complete a measure of alcohol consumption. Both tobacco and alcohol consumption measures were developed by the researchers. Psychological distress and mental disorders were measured by a revised version of the Composite International Diagnostic Interview, the Psychosis Screener, Kessler's Psychological Distress scale, the General Health Questionnaire, and a self-report measure of life satisfaction developed by the researchers. Use of tobacco was strongly related to substance use and dependency. Smokers were more likely to have higher levels of psychosis and reported greater levels of psychological distress than non-smokers and former smokers. Former smokers were more likely to have an alcohol or cannabis disorder than nonsmokers. The researchers offer support for the interaction of psychological distress and substance abuse in an adult population. The assessments used for this study were classified as psychological well-being assessments, so psychological well-being was measured instead of psychological distress. Psychological well-being is different from psychological distress, so the findings were reviewed with caution. Furthermore, the participants in this study resided in Australia, so the findings may not generalize to U.S. college students. However, the study had a large sample, an impressive response rate, and screened for specific psychological disorders in addition to measuring psychological well-being.

In another study (Dawson et al., 2005), alcohol use and alcohol disorders were studied in relation to mood, personality, and anxiety disorders. The researchers compared three subpopulations: college students 18-29 years of age, non-college students 18-29 years of age, and adults 30 years of age and older. Data was gathered from 43,093 surveys from the National Epidemiologic Survey on Alcohol and Related Conditions that had been completed before the current study began. College students

were more likely than non-students and adults to meet criteria for alcohol dependence. Students were twice as likely to have a mood, personality, or anxiety disorder if they were diagnosed as alcohol dependent. Specifically, they were at greater risk for hypomania, specific phobia, and histrionic personality disorder. Undergraduates who met the criteria for alcohol abuse were at risk for a mood or anxiety disorders and former drinkers from this group were likely than other groups to have dependent personality disorder and histrionic personality disorder. Non-students 18-29 years of age who were diagnosed with alcohol dependence were at greater risk of mood or anxiety disorders when compared to abstainers. Individuals in this group were 4 to 5 times more likely than the other groups to suffer from any of the mood, personality, and anxiety disorders except for dysthymia, hypomania, dependent personality disorder, and generalized anxiety disorder. Non-dependent drinkers in this group were twice as likely as others to develop major depression. Furthermore, binge drinkers were more likely to have antisocial personality disorder and histrionic personality disorder compared with abstainers. For adults 30 years of age and older, the risk of mood and anxiety disorder increased greatly in those who suffered from alcohol dependence. Alcohol dependent adults were more likely than non-dependent adults to have avoidant personality disorder, dependent personality disorder, paranoia personality disorder, and schizoid personality disorder. One strength of this study was the large amount of data collected from three different subpopulations. This study provided tremendous support for the relationship between alcohol use and psychological distress. A limitation of this study was the assumption that former drinkers experience short-term consequences for their behavior.

Extraneous variables such as health problems and medical diagnoses were not considered.

In a related study, Marx and Sloan (2003) investigated the relationships between posttraumatic stress, general psychological distress, alcohol use, and demographic variables. Nearly 600 college students from a northeastern university completed a questionnaire packet including the Life Experiences Questionnaire, the Brief Symptom Inventory, the Calahan Drinking Habits Questionnaire, and the Posttraumatic Stress Diagnostic Scale. Individuals who had suffered childhood sexual abuse and/or posttraumatic trauma had greater rates of psychological distress than the no trauma group. However, the trauma group did not significantly differ from the no trauma group on alcohol consumption. The researchers found the results to be puzzling, because they were not consistent with other similar literature. The researchers did an excellent job exploring different types of trauma by dividing the participants into three groups: childhood sexual abuse, posttraumatic trauma, and no trauma. A notable limitation of this study is the grouping of racial/ethnic minority participants into one category that was compared against White participants. Racial/ethnic minorities may differ significantly on a number of factors and it cannot be assumed that they fit into the same category.

Cross and Davis (1972) investigated personal adjustment for college students who used marijuana and LSD. Participants completed the Rotter Incomplete Sentences Blank and a questionnaire about drug use that was developed for the study. The researchers reported higher personal maladjustment scores for heavy users of LSD compared to students who were not heavy users of LSD. The limitations of this study included subjective scoring of the Rotter Incomplete Sentences Blank and a new instrument

developed only for this study. This study is important, because it was one of two studies found that investigated the relationship between psychological distress and use of LSD.

Another group of researchers (Herman-Stahl et al., 2007) investigated psychological distress and illicit drug use. Demographic, attitudinal, social, and behavioral factors were investigated to determine risk factors for methamphetamine and non-medical stimulant use. Data were collected from a public file from the National Survey on Drug Use and Health. Participants included 23,645 college students and adults 18 to 25 years of age. The survey was used to assess lifetime non-medical use of methamphetamine and stimulants, demographic information, psychological distress, antisocial behavior, and illegal drug use. The measures used were informal except for the measure of psychological distress which was a subscale of Non-Specific Psychological Distress. Antisocial and risky behaviors (stealing, assault, selling and using drugs), incarceration, and binge drinking were related to methamphetamine and non-medical stimulant use. Psychological distress was also related to recent use. College students and individuals who had attended college in the past were more likely to have used non-medical stimulants compared to individuals who had never attended college. A limitation of this study is the large amount of informal measures used; however, this study included a large amount of participants and reported significant demographic differences. This provides evidence for a relationship between methamphetamine and non-medical stimulant use and psychological distress, though the researchers failed to report on specific DSM-IV diagnoses.

Broman (2005) investigated how stress relates to substance use behavior of Black and White college students. Participants were 1,587 students from Midwestern colleges.

Participants completed a survey developed by the researcher that asked questions about marijuana, cocaine, LSD, ecstasy, and other drug use in the past six months. They also completed another survey developed by the researcher about heavy episodic drinking, the Rutgers Alcohol Problem Index, and the Comprehensive Effects of Alcohol scale. Stress was measured by the College Students' Recent Life Stress and questions developed by the researcher about traumatic events. White males and females and Black females who reported psychological distress were more likely to use substances and reported more alcohol-related problems than Black males. Older students tended to have more alcohol problems than younger students, and college men were more likely to engage in episodic drinking than women. Life stress and exposure to traumatic events was significantly and positively correlated with substance use and alcohol problems. The researcher provides excellent support for a relationship between substance use and distress in college students in this study. The study also included large samples of two different racial groups, one of which tends to be underrepresented in psychological literature. Limitations included the lack of an operational definition of life stress and the development of measures used only for this study.

Ong and Walsh (2001) also investigated the relationship between psychological distress and substance use in a college population. They examined the role of goal cognitions as a function of nicotine dependency in college students. The researchers defined goal cognitions as, "self-control resources [that] may take the form of cognitive self-regulatory strategies" (p. 252). Three hundred sixty-eight undergraduates from a western university completed a questionnaire packet including the Goal Systems Assessment Battery, the Center for Epidemiological Studies Depression Scale, and the

Fagerstron Test for Nicotine Dependence. College students who scored high in depression were more likely to be dependent upon nicotine than smokers who scored low in depression. Self-efficacy and self-monitoring seemed to moderate the relationship between depression and smoking cessation. Self-efficacy and depression were negatively related as were self-monitoring and depression. The researchers suggest that beliefs about the ability to quit smoking and beliefs about ability to successfully regulate behavior decreases the power that depression has over nicotine dependence, therefore making it less likely that the individual will have dependence on nicotine. Despite the fact that the researchers looked at only one aspect of psychological distress (depression), the researchers provide support for the relationship between substance use, self-monitoring, and psychological distress in a college population.

Markman Geisner, Larimer, and Neighbors (2004) investigated the relationships between gender, alcohol use, alcohol-related problems, and psychological distress in college students. Participants included 1,705 college students from three West Coast universities. Participants completed the Daily Drinking Questionnaire, the Rutgers Alcohol Problem Index, and the Brief Symptom Inventory. Participants who reported experiencing psychological distress reported greater alcohol consumption and alcohol-related problems than those who did not report experiencing psychological distress. Overall, college females reported more psychological distress than males; however, college males who reported a large amount of alcohol-related consequences were more likely than college females to experience somatization, anxiety, hostility, phobic anxiety, and paranoid ideation. This study used random selection of students who attended the specified universities, which increased the likelihood that the researchers would select a

rounded sample of participants. In addition, the researchers used reliable and valid measures. A weakness of this study included the dependence of the researchers on self-reported data.

While a number of research studies have been conducted to explore the relationship between substance use and psychological distress in the general population, approximately seven studies have been conducted to explore the relationship between psychological distress and substance use among college students. The researchers of these college student studies found significant and positive relationships between psychological distress and use of alcohol (Broman, 2005; Dawson et al., 2005; Markman Geisner et al., 2004; Marx & Sloan, 2003), marijuana, LSD (Cross & Davis, 1972), nicotine (Ong & Walsh, 2001), and methamphetamine (Herman-Stahl et al., 2007).

Across the board, there have been significant, positive relationships between psychological distress and substance use (Broman, 2005; Bryant & Zimmerman, 2002; Cross & Davis, 1972; Dawson et al., 2005; Degenhardt & Hall, 2001; Flynn et al., 2004; Herman-Stahl et al., 2007; Luthar & Becker, 2002; Ong & Walsh, 2001; Young et al., 2000). However, most of the researchers explored psychological distress in relation to the use of nicotine and alcohol. Little is known about the relationship between psychological distress and use of multiple substances as well as the relationship of psychological distress with social comparison and self-monitoring.

Psychological distress and social comparison. Few researchers have investigated the relationship between psychological distress and social comparison. In the studies conducted to date, social comparison was found to be associated with eating disorder symptomology (Corning, Krumm & Smitham, 2006), as well as uncertainty, anxiety

(Butzer & Kuiper, 2006), and depression (Butzer & Kuiper; Buunk, Zurriaga & Gonzalez, 2006).

Corning et al. (2006) investigated the social comparisons between women with eating disorder symptoms and women without eating disorder symptoms in order to predict eating disorder symptoms in women. Participants included 130 undergraduate women. The researchers presented modern images of women who either conformed or deviated from the ideal body image in the United States. The images consisted of body types ranging from thin to overweight. Participants viewed the images of women and responded to each one by ranking the degree to which the image's body was like their body on a nine point scale (1 = much worse than, 9 = much better than). Then the participants completed a questionnaire packet that consisted of the INCOM, the Rosenberg Self-Esteem Scale, and the Questionnaire for Eating Disorder Diagnoses. The researchers reported that women who display eating disorder symptoms are more likely than their asymptomatic counterparts to engage in a high level of social comparisons. Negative body-related social comparisons predicted the involvement of eating disorder behaviors and low self-esteem. A limitation of this study is that the researchers did not use a measure of general psychological distress; however, social comparison and psychological distress seem to be related in this study. Although the researchers did not state their definition of social comparison, they acknowledged that social comparison is more than social affiliation.

Butzer and Kuiper (2006) investigated participants' unique contributions of four constructs of uncertainty (overall uncertainty, anxiety, depression, and tolerance) to rates of social comparison. They also explored the role of self-concept and uncertainty as

moderators between depression, anxiety, and social comparison rates. Participants were 166 undergraduate students from a first year psychology course. The participants completed a packet of questionnaires that included a modified version of the Iowa-Netherlands Comparison Orientation Measure (INCOM), the upward and downward comparison scales of the INCOM, the Self-Concept Clarity measure, the Intolerance of Uncertainty measure, the Costello-Anxiety Scale, and the Center for Epidemiological Studies Depression Scale. The researchers reported that overall level of uncertainty was negatively and significantly related to the frequency in which an individual engages in upward social comparisons. Intolerance of uncertainty was positively and significantly related to the frequency in which individuals engaged in general, upward, and downward social comparisons. Higher levels of depression and anxiety were correlated with upward social comparisons; lower levels of depression and anxiety were associated with downward social comparisons. This study provides support for the relationship between social comparison and psychological distress. The researchers used a valid and reliable measure of social comparison and psychological distress, and did not limit social comparison to affiliation. A limitation of this study is that causation cannot be implied between tolerance and social comparison.

In a similar study (Buunk et al., 2006), depression was related to upward contrast. Upward contrast is the negative feeling towards others who are better-off than oneself. The researchers studied the role of upward and downward contrast of Spanish individuals who had suffered a spinal cord injury. Seventy participants completed the Coping Strategies Questionnaire, a subscale of the Arthritis Impact Measurement Scales, and an informal measure of social identification and contrast. Participants who reported the

highest levels of depression were the most likely to blame others for their injury and engage in upward contrast. A limitation of this study was the translation of the measures from English to Spanish, but like the two previous studies, a relationship between social comparison and psychological distress is evident. The researchers also had a low return rate for the mailed questionnaires.

In summary, few researchers have investigated psychological distress and social comparison (Butzer & Kuiper, 2006; Buunk et al., 2006; Corning et al., 2006). Unlike the previous studies that investigated social comparison, the studies presented above tended to use broad definitions of social comparison. Social comparison predicted eating disorder behaviors and low self-esteem (Corning et al., 2006) in college women. A greater amount of depression and anxiety was discovered in individuals who engage in frequent upward contrast (Butzer & Kuiper; Buunk et al., 2006). The researcher was unable to locate studies that included psychological distress, social comparison, and substance use.

Psychological distress, self-monitoring, and substance use. Little is known about the relationship between psychological distress and self-monitoring. In one study, psychological distress and self-monitoring, among other variables, were explored in relation to substance use. Pirkle and Richter (2006) analyzed substance use risk profiles for adolescent girls and women. Personality, attitudinal, and behavioral variables were investigated in combination with binge drinking and smoking cigarettes. Participants included fifth graders, eighth graders, seniors in high school, and seniors in college. Women who were of college age who did not attend college were also included. Random sampling was used to collect data by telephone from 1,220 participants. Participants

answered questions from the Self-Monitoring Scale, the Center for Epidemiological Studies-Depression Scale, and a modified version of the COPE inventory. Participants also answered questions developed by the researchers about religiosity/spirituality, popularity, dieting behavior, and beliefs and drinking and smoking. Participants who engaged in binge drinking were significantly higher in self-monitoring than non-binge drinkers, meaning that binge drinkers were more likely to engage in expressive self-control than non-binge drinkers. Participants who engaged in disordered dieting were more likely to binge drink than participants who did not diet and smokers were significantly more likely to report symptoms of depression than nonsmokers. In addition, participants who engaged in binge drinking and smoking were also more likely to report symptoms of depression than participants who did not binge drink or smoke.

In sum, self-monitoring had a positive and significant relationship with smoking for adolescent girls and adult women. Binge drinking and smoking in combination had a positive and significant relationship with depressive symptoms. In addition, binge drinking had a positive and significant relationship with disordered eating patterns. This study used a random sample of participants, increasing the chances that the sample obtained reflects its intended population of adolescent girls and adult women living in the United States. This is the only study to date in which the relationships of self-monitoring, psychological distress, and substance use were explored. Additional research would help clarify the relationships between and among self-monitoring, psychological distress, and substance use.

Summary

In summary, theories of substance use were presented in this chapter. Social comparison and self-monitoring appear to come from the cognitive-behavioral theories of substance use. The relationship between social comparison and substance use has been mixed with some researchers finding a negative relationship in college students (McShane & Cunningham, 2003) and others finding a positive relationship in adults (Gerrard et al., 2005) and college students (Novak & Crawford, 2001).

The nature of the relationship between self-monitoring and substance use has also been mixed. Researchers from one study found a significant positive relationship between self-monitoring and tobacco use among adolescents (Perrine & Aloise-Young, 2004) while researchers from another study found a negative relationship between self-monitoring and tobacco use (Booth-Butterfield et al., 2004). Finally, attitudes towards the legalization of drugs predicted marijuana use in low self-monitoring college students (Bauman & Geher, 2002).

The nature of the relationship between self-monitoring and social comparison is more confirmatory. Researchers have found a significant and positive relationship between self-monitoring and social comparison in college students (Harnish & Bridges, 2006; Kilduff, 1992; Miyake & Zuckerman, 1993). A single study was located regarding self-monitoring, social comparison, and substance use, but the researchers failed to find a significant relationship among these variables (Covell et al., 1994).

Researchers have found that a significant and positive relationship between psychological distress and use of substances in college students. Substances studied included: alcohol (Broman, 2005; Dawson et al., 2005; Markman Geisner et al., 2004),

marijuana (Cross & Davis, 1972), nicotine (Ong & Walsh, 2001), and methamphetamine (Herman-Stahl et al., 2007).

There is also a significant positive relationship between social comparison and psychological distress. Social comparison predicted eating disorder behaviors and low self-esteem in college students (Corning et al., 2006). In another study, depression and anxiety was associated with frequent social comparisons (frequent upward contrasts; Butzer & Kuiper; Buunk et al., 2006).

Finally, self-monitoring has a positive and significant relationship with smoking and binge drinking (separately and in combination) for adolescent girls and adult women. Binge drinking and smoking in combination had a positive and significant relationship with depressive symptoms, and binge drinking had a positive and significant relationship with disordered eating patterns (Pirkle & Richter, 2006).

Little is known about the relationships between social comparison, self-monitoring, psychological distress, and substance use in college students. The purposes of the present study were to 1) explore the relationships between and among social comparison, self-monitoring, and psychological distress with substance use among college students 2) explore social comparison, self-monitoring, and psychological distress as possible predictors of substance use among college students and 3) explore if risk of having a substance use disorder differs significantly for social comparison, self-monitoring, and psychological distress.

CHAPTER III

METHODOLOGY

Participants

Participants in this study included 337 undergraduate students from a regional southern university. Ages of participants ranged from 18 to 60 years. The mean age was 23.3 (SD 6.9, *n* = 330). Approximately 68% of the participants were female (*n* = 230) and 32% were male (n = 107). Most of the participants identified their race as either White/non-Hispanic (55.2%, *n* = 186) or African American/Black (37.4%, *n* = 126), 4.2% of participants identified themselves as Other (*n* = 14), 2.1% identified as Hispanic (*n* = 7), and 1.2 % identified as Native American (*n* = 4). With regard to year in college, the majority of the participants were freshman (48.4%, *n* = 163), 24.9% were sophomores (*n* = 84), 11.6% were juniors (*n* = 36), 14.5% were seniors (*n* = 49), and two participants did not respond to the question. In terms of sexual orientation, the majority of participants identified as heterosexual (*n* = 300), with the minority identifying as bisexual (*n* = 10) or gay/lesbian (*n* = 9). Eight participants did not provide their sexual orientation. See Table 1.

Procedures

This study was approved by the appropriate institutional review boards before data collection began. Participants were recruited from undergraduate psychology courses at a regional university in the southern United States. Classroom instructors were asked to read a recruitment script describing the nature of the study and directions for participation. Instructors for on-line psychology classes were asked to post the recruitment script on a virtual internet classroom platform, Blackboard, for the students to

review. All participants were directed to a website where they read the informed consent page. The informed consent page explained the process and purposes of the study, the rights of the students as a participant, and any potential harmful effects or benefits from participating in the study. Due to the survey being completed via the internet, participants were unable to autograph the informed consent, so the informed consent page stated that clicking on the "next" button and answering the following items indicated their informed consent to participate in the study. Once the student clicked on the "next" button they were directed to the survey. At the end of the survey, the participants were directed to the debriefing page that contained the same information as the informed consent page including the purpose of the study and the benefits and risks of participating in this study. After reading the debriefing page, the participants were directed to the completion of research page. The completion of research page asked the participants to type in their name, class number, and professor. This information was used so the primary researchers could notify the participants' professors that they have completed the research study. The participants' instructors were notified that their students participated and completed the survey through an e-mail sent by the primary investigators. However, the instructors were not privy to any of the information provided by the participants on the survey**.** Only the completion status of participants was communicated to instructors. This is necessary so that instructors could assign credit to their students for participating in this study. Once the professors were contacted, the participants' identifying information was deleted from the data set to keep participants' responses anonymous. See Appendices B, C, E, F.

Survey responses were stored electronically in a password-protected data file accessible only to the primary researchers. Identifying information was deleted after

professor notification to protect participants' identity. The data will be kept for five years per recommendations from the APA Code of Ethics (American Psychological Association, 2002).

Measures

Participants completed a packet of surveys as part of a larger study which included a demographic page, the Self-Monitoring Scale (SMS), the Depression Anxiety and Stress Scale-21 (DASS-21), the Social Comparison Scale (SCS), the Simple Screening Instrument for Substance Abuse (SSI-SA), the Adolescent Alcohol and Drug Involvement Scale (AADIS), and the Life Events Stress Scale (LESS). The LESS was not used in this dissertation study. See Appendix D.

Demographics Questionnaire. Participants reported their age, gender, race, marital status, sexual orientation, year in college, and family income.

Self-Monitoring Scale (*SMS; Snyder & Gangestad, 1986*). The SMS consists of 18 self-report items that measures the extent to which individuals assess their surroundings and accordingly monitor their self-presentation (Snyder & Gangestad, 1986). Each item contains a statement and asks individuals to either choose if the statement is like them (true) or if the statement is dislike them (false). The total score of the SMS ranges from 0 to 18. The SMS has three subscales that contain six questions each: expressive self-control (e.g. "I would probably make a good actor"), stage presence (e.g." In a group of people I am rarely the center of attention"), and other-directed self-presentation (e.g." I may deceive people by being friendly when I really dislike them"). Each subscale contains six questions. Subscale scores for the SMS range from 0 to 6. Most researchers have used the total scores rather than the subscale scores to assess self-

monitoring (Snyder & Gangestad, 1986). Higher scores on the Self-Monitoring Scale indicate that the individual is likely to assess his/her surroundings and monitor his/her behavior accordingly. Lower scores on the Self-Monitoring Scale indicate that an individual is likely to behave in a consistent manner in different social situations.

The original SMS had 25 true-false items and scores ranged from 0 to 25. It was normed on 192 undergraduates from Stanford University who completed 41 true-false statements regarding self-presentation and self-expression. Items analyses were conducted. Items were deleted until 25 remained. The remaining 25 items were chosen based on maximization of the internal consistency of the SMS (Snyder, 1974). The SMS was revised in 1986 after researchers questioned its validity. A factor analysis identified three main clusters of six statements, so the scale was reduced to 18 true-false statements to maximize internal consistency and intrinsic validity (Synder & Gangestad, 1986).

The current 18-item SMS has good internal consistency (Cronbach alpha = .70; Gangestad & Snyder, 1985). The original 25-item SMS had a test-retest reliability .83 after one month (Snyder, 1974). Information is not available on the test-retest reliability of the newer 18-item measure. For this sample, the internal consistency reliability estimate for the total 18-item SMS score was .67. Information regarding the construct validity of the SMS is limited. The SMS appears to measure domains of social behavior. The general factor underling the SMS was interpreted as self-monitoring (Snyder & Gangestad, 1986).

A factor analysis of the SMS identified three factors: expressive self-control, social stage presence, and other-directedness. The first unrotated factor accounted for 62% of the variance in self-monitoring when the three subscales were extracted from the

analysis (Snyder & Gangestad, 1986). The SMS has a convergent validity of .72 when compared with the Revised Self-Monitoring Scale (Snyder & Gangestad, 1986) and discriminant validity of -.23 when compared with the Iowa-Netherlands Comparison Orientation Measure (Gibbons & Buunk, 1999).

Depression Anxiety and Stress Scale-21 (DASS-21; Lovibond & Lovibond, 1995). The DASS-21 contains 21 items that measure three symptoms of psychological distress: anxiety, depression, and stress (Fischer & Corcoran, 2000). Participants are asked to rate how much each statement describes their thoughts and behavior during the past week on a Likert scale [1 = "did not apply to me at all", 3 = "applied to me very much, or most of the time" (p. 237)]. Total scores on the DASS-21 range from 0 to 63. Higher scores indicate high levels of psychological distress (Henry & Crawford, 2005). Lower scores indicate low levels of psychological distress.

The DASS-21 is a shorter version of the original 42-item Depression Anxiety and Stress Scale (Antony, Bieling, Cox, Murray, Enns, & Swinson, 1998). The DASS was intended to differentiate between anxiety and depression in adults. During development of the DASS, the authors noted that the ambiguous items used for control purposes formed a third group of non-specific arousal (Crawford & Henry, 2003). The normative sample included Australian adults from a non-clinical population. The DASS-21 was developed after researchers discovered that a shorter version of the DASS had the same factor structure and yielded similar results. Generally, the DASS is recommended for clinical work and the DASS-21 is recommended for research purposes (Psychology Foundation of Australia, 2006).

The items from a factor analysis of the DASS-21 loaded as greater than or equal to .36 on the general factor of distress. The specific factors or subscales had mean loadings of .34 and the general factor had a mean loading of .6 (Henry & Crawford, 2005). A principle components analysis from a separate study suggested that the DASS-21 has three factors that account for approximately 60% of the variance (Antony et al., 1998) including depression, anxiety and stress.

The DASS-21 has good internal consistency reliability. In one study, (Antony et al., 1998), Cronbach alpha coefficients for the three subscales were .94 for depression, .87 for anxiety, and .91 for stress. In another study (Henry and Crawford, 2005), Cronbach alpha coefficients for the three subscales were .88 for depression, .82 for anxiety, and .90 for stress. The Cronbach alpha for the total scale was .93. For the current study, the internal consistency reliability estimate for the total score was .91. Subscale internal consistency reliability coefficients were .87 for depression, .78 for anxiety, and .82 for stress in this sample of college students.

The DASS-21 has strong convergent validity with other measures of depression and anxiety. The DASS-21 depression subscale was significantly and positively correlated ($r = .79$) with the Beck Depression Inventory (BDI; Antony et al., 1998). The DASS-21 anxiety subscale was significantly and positively correlated ($r = .84$) with the Beck Anxiety Inventory (BAI). The DASS-21 stress subscale was significantly and positively correlated with the BDI ($r = .69$) and the BAI ($r = .70$). Construct validity of the DASS-21 indicates that the anxiety, depression, and stress factors accounted for 53% of the variance in total scores (Henry & Crawford, 2005).

Social Comparison Scale (SCS, Allan & Gilbert, 1995). The SCS consists of 11 items that are intended to measure social comparison. Participants are asked to complete a sentence about how they feel in relation to others with regard to descriptions or anchors that are opposites of one another. Participants rated each pair of descriptions using a 10-point Likert scale. The 11 anchors include: inferior-superior, incompetent-competent, unlikable-likeable, left out-accepted, different-same, untalented-more talented, weaker-stronger, unconfident-more confident, undesirable-more desirable, unattractive-more attractive, and outsider-insider (Allan & Gilbert, 1995). Total scores range from 11 to 110 and subscale scores for each item range from 1 to 10.

Allan and Gilbert conducted a factor analysis to identify general components of the SCS. Three factors of social comparison were identified: social rank, attractiveness, and group fit.

The authors developed the SCS to create a measure of social comparison that included comparisons of social rank, comparisons of attractiveness, and comparisons of acceptance. Social rank refers to the comparisons one makes in relation to the perceived strength, power, and aggressiveness of others. Attractiveness refers to being seen as favorable. Finally, group fit refers to rank, popularity, and similarity to others in a social group.

Two normative samples were used in the development of the SCS. The first sample included 263 undergraduates and postgraduates with a mean age of 23.4. The second sample included 32 patients at a day hospital with a mean age of 38.9 (Allan & Gilbert, 1995).

A principle components analysis indicated that two factors, rank and group fit, accounted for 65.4% of the variance in the factor space for a student population. Rank and group fit accounted for 75.2% of the variance in the factor space for a clinical population. Attractiveness loaded on both factors with both populations, so it was constructed as a separate subscale (Allan & Gilbert).

Higher scores on the SCS indicate a greater perceived social rank, greater perceived attractiveness, and/or greater perceived group fit. Lower scores on the SCS indicate lower perceived social rank, lower perceived attractiveness, and/or lower perceived group fit (Allan & Gilbert, 1995).

The SCS is a reliable measure of social comparison as evidenced by test-retest reliability estimates (r = .84) after four months (Allan & Gilbert, 1995). In terms of internal reliability, Cronbach alpha was .91 for a college student sample and .88 for a clinical sample. In the current study, the internal consistency reliability estimate for the total SCS scale was .91. The total score of the SCS was used in the analyses of the study.

When compared to the Global Severity Index of the Symptoms Checklist 90-Revised, the SCS has a discriminate validity of -.22 in a student sample and -.35 in a clinical sample (Allan & Gilbert). Convergent validity information is unavailable for this measure. Other measures of social comparison like the Iowa-Netherlands Comparison Orientation Measure has a convergent validity of .31 on the social anxiety subscale of the Self-Consciousness Scale (Gibbons & Buunk, 1999**).**

Simple Screening Instrument for Substance Abuse (SSI-SA, Winters & Zenilman, 1994.) The SSI-SA is composed of 16 items (Mental Health Association of Columbia-Greene Counties, Inc.), but only 14 of the items are scored. Items 1 and 15 address

background information about the participants in general. Specifically, item 1 is used to screen for recent use of substances and item 15 measures family history of substance use. The background information gained from items 1 and 15 are too general for scoring purposes, so they are not included in the total score. The SSI-SA is used to measure the following aspects of substance use issues: alcohol and drug consumption (items 1, 10 and 11), preoccupation and loss of control over use (items 2, 3, 9, 11 and 12), adverse consequences of use (items 5-9, 12, and 13), problem recognition (items 2-4 and 13-16), and tolerance and withdrawal (items 5 and 10). A score of 4 or higher on this measure indicates a moderate to high risk of having a substance abuse problem.

The SSI-SA was developed by a consensus panel from TIP 11, a government drug and alcohol prevention panel. The panel's goal was to create an assessment that would screen for alcohol and/or drug related problems. Further assessment would be determined by client score (Mental Health Association of Columbia-Greene Counties, Inc., 2006). Two forms of the SSI-SA were developed: the interview and the self-administered test. The self-administered test was developed for rapid data collection and for situations in which time is limited (National Library of Medicine, 2006). This measure of substance abuse was chosen to identify participants who may be at risk for having a substance use disorder.

The SSI-SA has good test-retest reliability of .97 after 30 days (Peters et al., 2000). The SSI-SA has demonstrated good sensitivity in detecting alcohol and/or drug dependence. For this study, sensitivity refers to the overall accuracy of an instrument to correctly identify a substance abuse or dependence problem when there is such a problem. The SSI-SA correctly identified 92.6% of alcohol and drug dependency and

87% of alcohol or drug abuse or dependency when compared to other alcohol and drug abuse/dependence screening instruments [i.e. Alcohol Dependence Scale/Addiction Severity Index-Drug Use, Texas Christian University Drug Screen, and Substance Abuse Subtle Screening Instrument-2 (Peters et al.). In fact, the SSI-SA had the highest sensitivity in detecting substance dependence compared to the Alcohol Dependence Scale/Addiction Severity Index-Drug Abuse, the Substance Abuse Subtle Screening Instrument-2, and the Texas Christian University Drug Screen.

Specificity refers to the percentage of alcohol or drug nondependent participants who were correctly identified as nondependent (Peters et al., 2000). The SSI-SA demonstrated good specificity. Most participants were correctly identified as nondependent (72.7%) and 79.7% of participants were correctly identified as nondependent and nonabusers of alcohol or drugs (Peters et al.). Specifically, the SSI-SA had higher specificity than the Substance Abuse Subtle Screening Instrument-2. In the present study, the internal consistency reliability estimate for the total SSI-SA scale was .84.

Adolescent Alcohol and Drug Involvement Scale (AADIS; Moberg, 2005). The AADIS is a 14-item measure that is used to screen adolescents (ages 12-20) for alcohol (Moberg, 1991) and/or drug use (Moberg, 2005). Total scores range from 0 to 80. A score of zero suggests no alcohol or drug use. Scores ranging from 1 to 36 suggest that alcohol and/or drug use is present, but the alcohol and/or drug use level does not meet the criteria for a substance use disorder according to the Diagnostic and Statistical Manual-IV (DSM-IV). A score of 37 or higher suggests that alcohol and/or drug use is present and that the adolescent may meet the criteria for a substance use disorder as defined by

the DSM-IV (i.e., substance dependency, substance abuse). Cutoff scores were determined by applying weights to items 1-14 (Moberg, 2005). This score was used to assess participants for risk of having a substance use disorder.

Specific substance abuse is determined by drug use history questions. Adolescents are instructed to rate the frequency of using (past or present) the following substances: tobacco, alcohol, marijuana or hashish, LSD, mushrooms, peyote, and other hallucinogens, amphetamines, powder cocaine, rock cocaine, barbituates, PCP, heroin or other opiates, inhalants, tranquilizers, and other. Participants record their responses on a drug use history grid where scores for each category of substance range from 0 to 7 where 0 = never used and 7 = use several times a day. For the purposes of this study, the total score from the drug use history questions was used to assess substance use.

The Adolescent Alcohol Involvement Scale (AAIS; Mayer & Filstead, 1979) and the Adolescent Drug Involvement Scale (ADIS; Moberg, 2005) were combined to create the AADIS. The AAIS was developed to identify alcohol problems in adolescents living in the metropolitan Chicago. The ADIS was developed to identify adolescents in need of substance abuse interventions in Wisconsin. The normative group included adolescents and their siblings ages 10 to 27. Moberg developed the AADIS to incorporate alcohol and drugs into a short screening instrument that will assess an adolescent's use of substances.

Moberg (2005) claims that the AADIS has good sensitivity and specificity for DSM-IV substance use disorders in adolescents. The author has not yet reported any specific reliability or validity information and he is in the process of gathering the

information. The author has requested information regarding reliability and validity from this study.

The internal consistency reliability coefficient for the AADIS was .92. The AADIS was used is this study to measure substance use and identify participants who may or may not be at risk of having a substance use disorder.

The AADIS and SSI-SA were used to determine the risk of having a substance use disorder in this study. Participants were placed into one of two groups: minimal risk of having a substance use disorder and vulnerable to risk of having a substance use disorder. If a participant did not meet criteria for being at risk for having a substance use disorder on both measures, they were placed in the minimal risk category. If a participant was identified as being at risk for a substance use disorder on one or both measures, they were placed in the vulnerable to risk category. Participants were classified into the minimal risk category if their total score was less than 4 on the SSI-SA and if their total score was less than 37 on the AADIS. Participants were classified into the substance use risk group if they scored 4 or higher on the SSI-SA or if they scored 37 or higher on the AADIS.

CHAPTER IV

RESULTS

The design of this study is correlational in nature. After data collection was completed, the research questions were investigated using correlational and multiple regression analyses using the Statistical Pack for the Social Sciences (SPSS) software.

Research Question # 1

Research Question # 1: What are the relationships between and among self-monitoring, psychological distress, social comparison, and substance use?

It was hypothesized that there would be significant positive bivariate relationships between among self-monitoring, psychological distress, and substance use, but also significant negative bivariate relationships between social comparison (lower scores indicate more downward comparisons in relation to others) and the following variables: psychological distress, self-monitoring, and substance use.

Pearson Product correlations were computed to determine the bivariate relationships between and among self-monitoring, psychological distress, social comparison, and substance use in undergraduate students. Self-monitoring was not significantly related to social comparison ($r = .09$, $p = .09$), but was significantly and positively related to psychological distress (($r = .14$, $p = .01$), and substance use ($r = .25$, $p < .01$). Psychological distress was significantly related to social comparison ($r = -.32$, $p < .01$) and substance use ($r = .19$, $p < .01$). Social comparison was not significantly

related to substance use (r = -.08, p = .17). See Table 3.

Self-monitoring had a significant positive relationship with psychological distress (r = .14, p = .01), indicating that individuals who engage in large amounts of expressive self-control are likely to have higher levels of psychological distress, and individuals who engage in little or no expressive self-control are more likely to have lower levels of psychological distress. Self-monitoring also had a positive relationship with substance use (r = .25, p < .01), suggesting that individuals who engage in more expressive self-control were more likely to use substances; individuals who engaged in less expressive self-control were less likely to use substances. The relationship between self-monitoring and social comparison was not significant (r = .09, p = .09) which indicates that expressive self-control is not related to how one compares him/herself to others.

Psychological distress had a significant negative relationship with social comparison (r = -.32, p < .01), indicating that individuals who experienced higher levels of psychological distress were less likely to perceive themselves favorably when compared to others in terms of rank, fit, and attractiveness. In other words, they engaged in downward comparisons by perceiving themselves as being a lower rank, not fitting in with their group, and being unattractive. In contrast, individuals who experienced lower levels of psychological distress were more likely to perceive themselves favorably when compared to others in terms of rank, fit, and attractiveness, meaning that they are likely to perceive themselves as having a high rank, fitting in with the group, and being attractive.

Psychological distress was positively related to substance use (r = .19, p < .01), suggesting that individuals who had higher levels of psychological distress were more likely to use substances, and individuals who had lower levels of psychological distress

were less likely to use substances. Social comparison was not significantly related to substance use (r = -.08, p = .17), indicating that college students' use of substances was not related to how they compare themselves to others.

In summary, substance use among college students was significantly related to self-monitoring and psychological distress, but not significantly related to social comparison. Psychological distress was significantly related to social comparison and self-monitoring. Of interest, social comparison was not significantly related to self-monitoring.

Research Question # 2

Research Question # 2: What is the nature of the linear relationship of social comparison and self-monitoring with substance use in college students?

It was hypothesized that self-monitoring and social comparison would have a significant linear relationship with substance use in college students.

A multiple regression analysis was conducted to determine if self-monitoring and social comparison had a significant linear relationship with substance use among college students. Self-monitoring and social comparison were entered as predictor variables and substance use was entered as the criterion variable. Self-monitoring and social comparison together had a small, yet significant, linear relationship with substance use. Self-monitoring and social comparison shared 7.1% of variance (R^2 = .071) in substance use, F (2, 329) = 12.61, p = .00. When self-monitoring and social comparison were assessed for their unique contributions to substance use, only self-monitoring had a significant relationship with substance use in college students (r^2 = .06, p < .01). Social

comparison did not have a significant relationship with substance use in college students (r^2 = .01, p = .17). See Table 4.

Research Question # 3

Research Question # 3: What is the nature of the linear relationship of social comparison and self-monitoring with substance use in college students above and beyond the contribution of psychological distress to substance use?

It was hypothesized that self-monitoring and social comparison would have a significant linear relationship with substance use in college students above and beyond the contribution of psychological distress to substance use.

A hierarchical regression analysis was conducted to determine if self-monitoring and social comparison had a significant linear relationship with substance use above and beyond the relationship of psychological distress with substance use. Psychological distress was entered into the first block and social comparison and self-monitoring were entered into the second block. Substance use was the criterion variable.

Self-monitoring and social comparison uniquely had small, yet significant, linear relationship with substance use after accounting for the relationship of psychological distress with substance use. Psychological distress uniquely accounted for 3.8% of variance (R^2 = .038) in substance use scores, F (1, 327) = 12.86, p = .00. Social comparison and self-monitoring uniquely accounted for 5.3 % (R^2 change = .053) of variance in substance use above and beyond that of psychological distress, F change (2, 325) = 9.48, p = .00. When each predictor variable was assessed for significance, only self-monitoring (r^2 = .06, p <.01) and psychological distress (r^2 = .04, p < .01) shared a significant amount of variance in substance use. See Table 5.

Research Question #4

Research Question #4: Are there significant substance use risk group difference (i.e., individuals who are at minimal risk for a substance use disorder and those who are vulnerable to risk of having a substance use disorder) in terms of social comparison, psychological distress, and self-monitoring?

It was hypothesized that there would be significant substance use risk group differences (i.e., between individuals who are at minimal risk for a substance use disorder and those who are vulnerable to risk of having a substance use disorder) in terms of social comparison, psychological distress, and self-monitoring. In particular, it was hypothesized that students who were vulnerable to risk of having a substance use disorder would report higher levels of psychological distress and self-monitoring but lower levels of social comparison.

Two groups were formed based on the AADIS and SSI-SA scores: minimal risk of having a substance use disorder and vulnerable to risk of having a substance use disorder. If a participant did not meet criteria for being at risk for having a substance use disorder on both measures, they were placed in the minimal risk category. If a participant was identified as being at risk for a substance use disorder on one or both measures, they were placed in the vulnerable to risk category**.** Specifically, participants were classified into the minimal risk category if their total score was less than 4 on the SSI-SA and if their total score was less than 37 on the AADIS. Participants were classified into the vulnerable to risk of having a substance use disorder if they scored 4 or higher on the SSI-SA or if they scored 37 or higher on the AADIS.

A multivariate analysis of variance (MANOVA) was conducted to determine if there were significant substance use risk group differences for social comparison, self-monitoring, and psychological distress. Risk for having a substance use disorder (minimal versus risk) was the independent variable. Social comparison, self-monitoring, and psychological distress were the dependent variables.

There was a significant overall main effect. The two substance use disorder risk groups differed in levels of social comparison, self-monitoring, and psychological distress when these variables were considered together, F (1, 329) = 14.20 ($p < .01$). Follow-up univariate analyses of variance (ANOVA) indicated that the substance use disorder risk groups significantly differed on each of the dependent variables separately, including social comparison, $F(1, 329) = 4.3$ ($p < .05$), self-monitoring, $F(1, 329) = 22.09$ ($p < .01$), and psychological distress, $F(1, 329) = 22.23$ ($p < .01$). College students who were classified as being at minimal risk for a substance use disorder tended to engage in more favorable comparisons of self to others in terms of perceived rank, fit, and attractiveness, less self-control of expressive behavior, and tended to experience less psychological distress in general compared to college students who were classified as being at risk/vulnerable to having a substance use disorder.

Post-hoc Analyses

Post-hoc analyses were conducted to determine if age, gender, or race had an impact on the main study variables, social comparison, self-monitoring, psychological distress, and substance use. Pearson product correlations were conducted to explore how age was related to self-monitoring, social comparison, psychological distress, and substance use. Age was significantly and positively related to substance use ($r = .15$, p

>.01); however, age was not significantly related to social comparison (r = -.03, p = .59.), self-monitoring (r = -.05, p = .36), or psychological distress (r = -.06, p = .25).

Gender was also examined to determine if any differences existed between college men and women on social comparison, self-monitoring, psychological distress, and substance use. Gender differences were found for self-monitoring and substance use, but not for social comparison or psychological distress. Specifically, college men (m = 20.07, sd = 7.01, F (1, 334) = 17.27, p <.01) reported using substances more frequently compared to college women (m = 17.37, sd = 4.69). Additionally, college men (m = 9.98, sd = 3.29, F (1, 334) = 29.01, p <.01) reported engaging in more control of their expressive behavior than college women (m = 7.97, sd = 3.13). See Table 2.

Racial group differences were explored in relation to social comparison, self-monitoring, psychological distress, and substance use. College students were categorized into two racial groups: White students and students of color. Significant racial group differences were found for substance use and social comparison, but not for self-monitoring or psychological distress. White students reported using substances more frequently (m = 19.08, sd = 5.37, F (1, 334) = 9.65, p < .01) than students of color (m = 17.17, sd = 5.64). White students also engaged in more negative social comparisons of self with others (m = 74.24, sd = 16.10, F (1, 332) = 10.95, p < .01) compared to students of color (m = 80.31, sd = 17.36).

Given these findings, follow-up multiple regression analyses were conducted related to research questions two and three, controlling for demographic characteristics. For research question two, age, race group, and gender were entered into the first block and social comparison and self-monitoring were entered into the second block.

Substance use was entered as the criterion variable. The demographic variables of age, race group, and gender accounted for 8.8% of variance (R^2 = .09) in substance use, F (1, 324) = 10.36, p < .01). Social comparison and self-monitoring uniquely accounted for 4.1% (R^2 *change* = .04) of variance in substance use beyond that of age, race group, and gender.

For research question three, age, gender, and race group were entered into the first block, followed by psychological distress in the second, then self-monitoring and social comparison in the third block. The demographic variables of age, gender, and race group uniquely accounted for 8.5% (R^2 = .09) of variance in substance use scores, F (3, 321) = 10.00, p < .01; psychological distress explained an additional 4.2% (R^2 *change* = .04) of variance in substance use scores, *F change* (1, 320) = 15.42, p < .01, and social comparison and self-monitoring uniquely accounted for 2.9% (R^2 *change* = .03) of variance in substance use scores, *F change* (2, 318) = 5.52, p < .01.

A 2 X 2 X 2 multivariate analysis of variance was conducted to explore racial, gender, and substance use risk group differences in self-monitoring, social comparison, and psychological distress. There was no significant three-way interaction for self-monitoring, F (1, 329) = .64, p = .42, social comparison, F (1, 329) = .04, p = .84, and psychological distress, F (1, 329) = .01, p = .93. Two significant two-way interactions were noted. The first significant two-way interaction was between risk group and gender for self-monitoring, F (1, 329) = 6.30, p < .05, and psychological distress, F (1, 329) = 4.12, p < .05. Caucasian males were more likely to engage in higher levels of expressive self-control and report greater levels of psychological distress than males of color and

females. The race group and gender interaction for social comparison was non-significant, F (1, 329) = .25, p = .62.

The second significant two-way interaction was noted between risk group and gender for social comparison, F (1, 329) = 5.78, $p < .05$, but not self-monitoring, F (1, 329) = .01, p = .92 or psychological distress, F (1, 329) = 1.07, p = .30. Females who were identified as being at minimal risk of having a substance use disorder were more likely to engage in favorable comparisons with others than females who were identified as being vulnerable to risk of having a substance use disorder and both groups of males. There were no two-way interaction effects for risk group and race group in relation to self-monitoring, F (1, 329) 2.70, p = .10, psychological distress, F (1, 329) = 1.61, p = .21, and social comparison, F (1, 329) = .74, p = .39.

Summary

Substance use among college students was significantly related to self-monitoring and psychological distress, but not significantly related to social comparison. Psychological distress was significantly related to social comparison and self-monitoring. Of interest, social comparison was not significantly related to self-monitoring.

Self-monitoring and social comparison predicted 7.1% of variance in substance use. However, self-monitoring was the only significant predictor. When the relationship between substance use and psychological distress was accounted for, social comparison and self-monitoring uniquely accounted for 5.3 % of variance in substance use scores. College students who were classified as being at risk for a substance use disorder reported more efforts to monitoring one's self-expression in relationships with others, more negative evaluations of self in comparison to others, and more psychological

distress compared to college students who were classified as being at minimal risk for a substance use disorder.

Post-hoc analyses revealed some age, gender, and race main effects on the main study variables. Older college students were more likely to use substances more frequently than younger college students, and college men reported using substances more frequently and engaged in more self-monitoring than college women. Finally, White students were more likely to use substances more frequently and engage in negative comparisons of self to others than students of color. Some interaction effects for these demographic variables with the main study variables were also noted.

CHAPTER V

DISCUSSION

To date, most researchers have focused on emotional factors like psychological distress, behavioral factors such as coping mechanisms, and consequences of substance use in college students (Broman, 2005; Dawson et al., 2005; Geisner et al., 2004; Nelson & Wechsler, 2003; Pirkle & Richter, 2006; Stahl et al., 2007). Given the alarming rates of alcohol and drug use among college students as well as the importance of peers and social relationships during college, it is important to understand how college students' views of themselves in relation to others (i.e., social comparison), self-expression with others (i.e., whether they monitor their self-expression or not), and experience of psychological distress might be related to their use of substances, including alcohol and illicit drugs. The purposes of the present study were to: 1) explore the bivariate relationships between and among substance use, social comparison, self-monitoring, and psychological distress 2) explore the linear relationship of self-monitoring and social comparison with substance use in college students, 3) determine if social comparison and self-monitoring shared a unique amount of variance with substance use above and beyond what is contributed to by a commonly recognized correlate of college student substance use, psychological distress, and 4) to determine if college students who were at risk of having a substance use disorder significantly differed from college students who were

at minimal risk of having a substance use disorder in terms of levels of social comparison, self-monitoring, and psychological distress.

Psychological distress was significantly related to social comparison and self-monitoring in this study. College students who experienced more psychological distress appeared to engage in more cognitive processes of monitoring one's self-expression and engaged in more negative comparisons of self to others as a way to assess their environment and adapted their behavior accordingly given their levels of psychological distress. It is possible that college students who are experiencing psychological distress may be filtering their self-expression with others more to avoid rejection since they tend perceive themselves more negatively in comparison to others. This could be part of a vicious circle and create self-fulfilling prophecies of perceived and/or actual rejection from others.

These results confirm the previous findings of Butzer and Kuiper (2006) who reported that higher levels of depression and anxiety were associated with downward social comparisons in college students. Information regarding the relationship between self-monitoring and psychological distress in the literature is sparse. A single study was located and its results support the findings of this study. Pirkle & Richter (2006) found binge drinking and smoking, in combination, had a positive and significant relationship with depressive symptoms and disordered eating patterns. In addition, binge drinking had a positive and significant relationship with self-monitoring. This could mean that college students who feel the need to monitor and control their expressive behavior may experience stress when they are unable to adapt successfully to their surroundings or successful adaptation requires significant time and energy.

In the present study, self-monitoring and social comparison were not significantly related for college students. Therefore, monitoring one's self-expression does not seem to be related to how individuals perceive themselves in relation to others. Self-monitoring and social comparison appear to be two distinct types of cognitive processes. While both involve an assessment of one's environment, the two differ in terms of purpose. The purpose of social comparison is to adapt to one's environment in a way that will increase survival by monitoring and behavior according to social structure and peer affiliation (Allan & Gilbert, 1995). Self-monitoring may have several purposes. For example, self-monitoring may be used to communicate one's true emotional feelings, communicate an arbitrary feeling that is incongruent with one's true emotional state, cover or hide one's emotional state, and/or hide an inappropriate feeling by expressing an appropriate feeling. Each purpose makes the individual look more favorable among his or her peers (Snyder, 1974).

Substance use among college students was significantly and positively related to self-monitoring and psychological distress, but not significantly related to social comparison. While social comparison and self-monitoring significantly accounted for substance use in college students beyond what is contributed by psychological distress alone, only psychological distress and self-monitoring were significantly related to substance use. College students who were classified as being at risk for a substance use disorder reported more efforts to monitor self-expression in relationships with others, more negative evaluations of self in comparison to others, and more psychological distress compared to college students who were classified as being at minimal risk for a substance use disorder.

The results of this study point to the importance of self-monitoring as a correlate and predictor of substance use and substance use risk among college students. The self-monitoring and substance use risk results of this study were similar to the findings of two previous studies (Bauman & Geher, 2002-2003; Pirkle & Richter, 2006) in that self-monitoring was significantly and positively related to binge drinking and in marijuana use in college students. College students who feel the need to monitor and control their expressive behavior may experience stress when they are unable to adapt successfully to their surroundings or successful adaptation requires significant time and energy and thus may use substances to cope with this stress. Other possible explanations are that college students who use substances more often may monitor their expressive behavior with others due to their fear of people finding out about their substance use or college students who are high self-monitors use substances to help them monitor less than when they are sober.

While social comparison was not significantly related to substance use in college students in general, when college students were classified into substance use risk categories, college students with a risk of having a substance use disorder were more likely to engage in more negative social comparisons in terms of fit, attractiveness, and rank compared to college students with a minimal risk of having a substance use disorder. This suggests that social comparison may be an important cognitive variable related to substance use risk in college students, but not for substance use in general among college students. Only a couple of research groups have explored social comparison and substance use among college students. The findings of these studies have been mixed (McShane & Cunningham, 2003; Novak & Crawford, 2001). Some researchers have

found a significant relationship between social comparison and substance use, including significant substance risk group differences in social comparisons (Novak & Crawford, 2001) whereas other researchers have not found such a relationship or difference (McShane & Cunningham, 2003). Novak and Crawford (2001) found that college students who consumed alcohol often tended to report being vulnerable to peer pressure and more likely to notice and attend to sensitive social cues. However, McShane and Cunningham (2003) found the college students were better able to recognize drinking problems in other college students who were the most dissimilar from their own social group. The inconsistencies in the research findings regarding the relationship between substance use and social comparison may be due to different ways in which social comparison and substance use have been operationalized and measured. For this study, social comparison was defined in terms of perceived social rank, perceived attractiveness, and perceived group fit whereas other researchers have only explored a more limited view of social comparison (McShane & Cunningham, 2003; Novak & Crawford, 2001) as perceived group fit.

In the present study, psychological distress was a significant correlate of substance use and substance use risk in college students which supports previous research indicating a significant and positive relationship between substance use and psychological distress (Dawson et al., 2005) as well as differences in psychological distress among those who were diagnosed with a substance use disorder (Broman, 2005; Cross & Davis, 1972; Markman Geisner et al., 2004; Herman-Stahl et al., 2007; Ong & Walsh, 2001). Broman (2005) found that life stress was related to substance use and other alcohol problems in college students. Cross and Davis (1972) discovered

maladjustment problems among college students who were heavy users of LSD. Herman-Stahl et al. (2007) found that antisocial behavior was significantly related to use of methamphetamine and non-medical stimulant use in college students. Furthermore, current and former college students and were more likely to use non-medical stimulants compared to individuals who have never attended college. Ong and Walsh (2001) discovered that self-efficacy and self-monitoring seemed to moderate the relationship between depression and smoking cessation**.** Markman Geisner et al. (2004) found that college students who reported greater levels of psychological distress also reported greater amounts of alcohol consumption and alcohol-related problems. Dawson et al. (2005) found that college students were twice as likely to have a mood, personality, or anxiety disorder if they were diagnosed with alcohol dependency. In addition, undergraduates who met criteria for alcohol abuse were also likely having a mood, anxiety, and/or personality disorder, supporting the findings of this study regarding risk for substance use and general emotional distress includes including depression, anxiety, and stress.

The results of the present study add to the current psychological literature regarding psychological distress and substance use among college students. Psychological distress had a small and significant and positive relationship with substance use in this study. Because of the small relationship, it cannot be assumed that those who used substances did so because of poor stress tolerance alone. Other factors, like relationships or recreation, may influence one's decision to use substances.

The present study also adds to the current literature in identifying psychological distress and self-monitoring as significant correlates of substance use in college students.

A relatively small relationship of self-monitoring and substance use was found in this study. The small relationship may be due to the assumptions of this study. The researchers assumed that self-monitoring would have a linear relationship with substance use. However, it is possible that the association between self-monitoring and substance use may be more complex and curvilinear. Because self-monitoring has been related to a multitude of variables (e.g., Abraham, 1999; Allen et al., 2005; Bauman & Geher, 2002; Beers et al., 1997; Bolino & Turnley, 2003; Booth-Butterfield, Anderson & Booth-Butterfield, 2000; Butzer & Kuiper, 2006; Buunk, Zurriaga & Gonzales, 2006; Corning, Krumm & Smitham, 2006; DeMaree et al., 2005; Guarino et al., 1998;; et al., 1996; Jawahar & Mattsson, 2005; Klein et al., ????; Miyake & Zuckerman, 1993; Norris & Zweigenhaft, 1999; Novak & Crawford, 2001; Osborn et al, 1998; Premeaux & Bedeian, 2003; Shaffer & Pegalis, 1998; Smith et al., 1997; Snyder & Simpson, 1984), individuals may be choosing when to engage in lots of self-control of expressive behavior depending on the situation. When the relationship between psychological distress and substance use was accounted for, self-monitoring and social comparison still had a small, yet significant, linear relationship, contributing to the understanding of substance use in college students. Therefore, it is important for researchers and practitioners to consider both psychological distress and self-monitoring in understanding substance use in general among college students in addition to studying how self-monitoring and social comparison may serve as a moderator between substance use and psychological distress.

Of interest, social comparison, self-monitoring, and psychological distress are all important variables to consider when working with college students who may be at risk for a substance use disorder given the substance use risk group differences found in this

study. College students who are at risk for substance use disorders engage in more negative comparisons of self to others, are higher self-monitors, and are more depressed, anxious, and stressed out compared to college students who are at minimal risk for a substance use disorder. These findings have a number of implications for counseling and intervention practices with college students which will be discussed in the next section.

While psychological distress and self-monitoring did not explain a majority of variance in substance use, it does explain a total of 12% of the variance in substance use levels among college students. It is logical to conclude that other significant predictors of substance use were not explored, given that 88% of the variance in substance use was unaccounted for in this study.

The demographics of this college student sample were found to have an impact their levels of social comparison, self-monitoring, psychological distress, and substance use. In particular, age, gender, and racial group differences were discovered. Older college students were more likely to use substances more often than younger college students. This result is similar to the results of Flynn et al. (2004) who found that age directly predicted illicit drug use in adults.

In this study, college men were more likely to use substances more often and engage in more control of expressive behavior than college women. Two other groups of researchers have found similar results (Geisner et al., 2004; Ong and Walsh, 2001), lending support of gender differences in substance use. Geisner et al. reported higher levels of alcohol consumption among college men than women and Ong and Walsh found that more college men than college women reported engaging in greater levels of self-monitoring and nicotine dependence (Ong and Walsh).

Finally, White students were more likely to use substances more often and engage in more negative social comparisons than students of color. These results are similar to the results of Herman-Stahl et al. (2007) and Broman (2005) who found that ethnic identification was associated with less nonmedical prescription stimulant use in young adults (Herman-Stahl et al.) and that Black males were less likely than White males to experience problems related to alcohol (Broman).

The original analysis of the differences between substance use risk groups on social comparison did not account for demographic differences. When race and gender were accounted for, there were no longer significant differences between substance use risk groups on levels of social comparison. Race and gender accounted for the differences between the groups on social comparison.

Implications for theory and practice

Cognitive factors like self-monitoring may play an important role in substance use in college students. Because substance use and substance experimentation is common in college students (Eisenbert & Wechsler, 2003; McMillan & Conner, 2002; Nelson & Wechsler, 2003; Wechsler et al., 2002), it may be beneficial to explore cognitive factors, in addition to psychological distress, that may contribute to one's likelihood of using substances or developing substance use disorders. Although psychological distress and substance use had a small relationship in this study, previous researchers have found a significant relationship between psychological distress and substance use in college students (Broman, 2005; Cross & Davis, 1972; Markman Geisner et al., 2004; Herman-Stahl et al., 2007; Ong & Walsh, 2001). Therefore, it is important for the mental health

practitioner to continue to assess for substance use when treating college students for psychological distress.

Based on the small linear relationships between self-monitoring and social comparison with substance use, it would seem that giving measures of social comparison and self-monitoring to college students who use substances or modifying therapeutic interventions to incorporate social comparison and self-monitoring theory may not be warranted. However, the results of this study emphasize the importance of exploring the cognitive processes that underlie substance use and substance use risk in college students so reduction in psychological distress can be achieved. It might be helpful for psychologists to help clients explore the cognitive processes involved with social comparison and self-monitoring, so that both practitioner and the client may better understand the thoughts and feelings that are associated with and/and or may contribute to substance use in college students. It is also possible that other cognitive factors not explored in the present study, such as self-image and self-efficacy, may contribute to substance use levels in college students and need to be explored in therapy.

It is possible that self-monitoring may truly play a larger role in substance use than what was reported in this study. Given the high amount of measured error in the SMS, it is possible that other paper and pencil assessments of self-monitoring may better measure self-monitoring. In addition, high self-monitors may be monitoring their expression while completing the SMS in order to answer favorably, so observational measures of self-monitoring may need to be developed and used in future studies.

Overall results of this study point to the significance of thorough clinical assessments and evaluations of college students seeking counseling and psychotherapy

for substance use and psychological distress, which might include self-monitoring as a part of the evaluation process. The Self-Monitoring Scale or another evaluation that measures self-monitoring would be a quick, efficient way of determining self-monitoring status if the practitioner believes that behavioral control of self-image is important to clients who use substances or are at risk for substance use disorders. For individuals who score high on self-monitoring, it may be important for the practitioner to focus on self-image and alternative, healthy methods of coping with stress and/or psychological distress as a part of the substance use/abuse treatment program. If self-image is important, the practitioner may want to focus on the thoughts and feelings that are elicited when the patient reflects on his or her self-image, and guide the patient towards holding realistic expectations and achieving attainable goals. If thoughts of self-image provoke psychological distress in a patient, then the practitioner may want to challenge irrational thoughts and teach the patient how to use healthy coping mechanisms for distress like deep breathing, exercise, and/or participating in safe, enjoyable activities.

While cognitive factors such as social comparison do not seem to be a vital part of one's decision to use substances, it appears to be important when working with college students who are at risk of substance use disorders. One's perception of their rank, fit, and attractiveness may be easily measured by the Social Comparison Scale. Practitioners may want to assess for social comparison if they suspect that a patient perceives themselves as inferior or not as good as his or her peers.

In this study, college students who were risk for having a substance use disorder reported having a lower perceived rank, fit, and attractiveness when compared to their peers than college students were not at risk for having a substance use disorder. It is

possible that social comparison may be indirectly related to substance use and/or risk of having a substance use disorder through psychological distress. For example, negative thoughts regarding perceived fit, rank, and attractiveness could result in lowered self-esteem, which might cause distress. College students may then use substances as a coping mechanism to deal with their distress. If this method reduces students' distressful thoughts and feelings, it may provide the negative reinforcement to use substances more often when downward social comparisons occur. On the other hand, using substances may also fuel students' perceptions of having a lower rank, group fit, and little attractiveness, thus creating a vicious cycle of self-loathing and substance use. While these ideas mentioned above are theoretical in nature, further research is needed in this area to confirm the internal process that college students experience as they deal with substance use and social comparison issues.

Based on the results of this study, demographic characteristics appear to be important to consider when working with college students who use substances and/or may be at risk for having a substance use disorder. Age was significantly and positively related the number and frequency of substances used. This may be due to older individuals having a larger social network because of their age and/or the age limits that may be placed on the purchase of specific types of substances, causing a decrease in access and a decrease in use of substances for younger college students.

Gender differences in number and frequency of substances used were found in this study. College males were likely to use more substances more often than college females. These gender differences may be caused by a cultural restriction for men on emotional expression that could enable college men to express themselves under the

influence of a substance, yet use the substance use as an excuse for the emotional expression. This cultural restriction for men may also limit the amount of emotional support available to them in addition to increasing their amount of self-control of expressive behavior in order to express only socially acceptable emotional states. On a different note, it is also possible that substance use in and of itself may be a related to gender role socialization issues regardless of self-monitoring and social comparison.

Finally, racial group differences were discovered for substance use in college students. Caucasian students were more likely to use more substances more often and have low perceptions of rank, fit, and attractiveness than students of color, including African-Americans, Asian-Americans, Native-Americans, Hispanic Americans, and those who identified as "Other". There are a variety of possible explanations for this finding. Cultural factors like family support and religion may decrease the likelihood of substance use in students of color and increase perceptions of rank, fit, and attractiveness. For example, having a larger extended family or attending church may increase social and emotional support. This could, in turn, decrease one's likelihood of using substances for emotional coping and improve one's thoughts and feelings regarding social comparisons with others. It is also possible that students of color may not value substance use as a coping mechanism for other reasons compared to white students. Further research should be conducted to confirm these findings and to examine possible explanations for racial differences in substance use when such differences are found.

Overall, being older, male, and Caucasian may increase the likelihood of college students using substances more frequently and possibly having a substance use problem. Therefore, practitioners need to consider how age, gender, and race may be related to and

interact with substance use and substance use problems when working with college students.

Educational and preventive interventions are essential to identifying individuals who may be at risk of having a substance use disorder or another substance use problem. Outreach programs can be created to inform students, educators, and parents about: 1) the warning signs of substance use/abuse/dependency, 2) the demographic correlates of substance use and substance use problems, and 3) coping skills, including an awareness of personal, interpersonal, and culture factors that may help prevent substance use/disorders problems for college students, as well as evidence-based coping strategies to address the substance use issues directly and other factors that may be related to substance use, including self-monitoring and social comparison.

Finally, the relationships of self-monitoring, social comparison, and psychological distress lend themselves well to social learning theory, which can be explained by cognitive-behavioral theory (CBT). Psychologists may want to use interventions that explore how one's thoughts, feelings, and behaviors are related to substance use experimentation as well as substance use disorder problems in college students.

Limitations

There are several limitations of this study. First, data was collected from a convenience sample. A weakness of convenience sampling that that the sample studied may not be a good representation of the population in which the study will be generalized (Creswell, 2003). This leads to the second limitation of this study—generalizability. The college undergraduate population sampled may not be representative of other United States academic institutions. In terms of race/ethnicity, the college students in this

sample were primarily Caucasian. Asian Americans and Native Americans were vastly underrepresented where African Americans were overrepresented in this sample compared to US Census statistics. In terms of gender, approximately two thirds of the sample identified as female, meaning that males may have been underrepresented. The sample had a large range of ages (18 to 60) which likely included non-traditional undergraduate students. In addition, the sample was collected from a university in the southwestern part of the United States where religion plays an important role in the community surrounding the campus and residents of this college town tend to be politically conservative. So it is possible that undergraduates at this university differ from their other U.S. counterparts in terms of the factors investigated in this study. Finally, data was collected from a non-clinical sample. Non-clinical populations tend to differ from clinical populations in terms of psychological distress (Graham, Ben-Porath, McNulty & Butcher, 1999).

This study was cross-sectional in design, meaning that data was gathered from participants in one point in time. Follow-up studies were not conducted to determine substance use or substance use disorder status over time. It is possible that the amount of social comparison, self-monitoring, psychological distress, and substance use reported by participants may fluctuate over time.

Another limitation of this study is that it did not account for social desirability. Data was collected over the internet and it was assumed by the researchers that the participants answered the questions in an honest fashion, free from distractions. It is possible that, due to the sensitive nature of some of the questions, the participants answered the questions in a way that would portray them in the best way possible.

Several statistical limitations were present. First, the amount of measured error from the Self-Monitoring Scale was high, so the alpha coefficient for internal consistency was less than adequate (below .70). Second, this study was correlational in nature, so cause and effect relationships cannot be determined. Interpretations are limited to the nature of the relationship between the variables only. Finally, the variables measured in this study accounted for a small percentage of the overall variance in substance use, so there seems to be significant variables not measured in this study that account for variance in substance use.

Directions for Future Research

The results of this study indicate significant relationships between social comparison and psychological distress as well as self-monitoring and psychological distress, so it seems that engaging in lots of control of self-expressive behavior and having a perceived low rank, perceived poor group fit, and perceived more attractiveness is stressful. In addition, psychological distress had a positive relationship with substance use. Interestingly, when exploring the relationship of self-monitoring and social comparison to substance use, only self-monitoring had a significant relationship with substance use, so it seems that individuals who engage in more expressive self-control tend to use substances more. So, using substances may be a way for higher self-monitors to cope with their efforts related to self-expression. It would be beneficial to explore the coping mechanisms used by students who engage in upward social comparisons given that social comparison was related to self-monitoring and psychological distress in this study.

Although psychological distress and self-monitoring were significantly related to substance use in college students in this study, they each shared a small amount of variance in substance use, so other factors must account for the missing variance. Given that the focus of this study was on psychological variables of self-monitoring, social comparison, and psychological distress in relation to substance use in college students, it is very likely that other psychological variables (i.e., history of abuse, psychosis) as well as social variables (i.e., self-efficacy, image, peer pressure) that were not studied may explain substance use in college students. In addition, it may be beneficial to study how psychological distress may moderate the use of substances and cognitions, and include assessments that measure other variables related to social learning theory. Therefore, it is important to investigate other significant factors that contribute to or mediate a relationship with substance use, so that valuable preventive, informational, and remedial therapy interventions and measures can be developed.

The focus of this study was on substance use and substance use risk and not on the specific types of substances that are used by individuals who engage in a lot of self-expressive behavior and who hold a perceived lower social status. The review of the literature provided early in this paper focused primarily on research related to alcohol and tobacco use. Few researchers have explored the relationships of cognitive factors such as social comparison and self-monitoring with illicit drug use, including prescription drugs used for non-prescription purposes.

Finally, mental health professionals would benefit from information regarding other factors (cognitive and non-cognitive) that predict variance in substance use. This information would allow theorists and mental health practitioners to develop preventive

interventions for substance use, educational seminars to help others identify those at risk of substance use, and therapy interventions to help those who use substances as a way to cope with psychological distress

Summary

The purposes of this study were to determine the relationship of self-monitoring and social comparison with substance use in college students and the contribution of social comparison and self-monitoring to substance use, above and beyond what is contributed to by psychological distress, as well as explore substance use risk group differences in social comparison, self-monitoring, and psychological distress. Results indicated that self-monitoring and social comparison predicted a small amount of variance in substance use; however, when each predictor variable was assessed individually, self-monitoring and psychological distress were the only significant predictors of substance use in college students. In addition, there were age, gender, and racial differences in substance use. Older, male, and White students tended to use substances more than younger, female, and students of color. The results of this study highlight the significance of thorough clinical assessments and evaluations of college students seeking counseling for psychological distress and substance use issues and the importance for mental health practitioners assess clients for cognitive, emotional, and cultural factors that may contribute to substance use and substance use risk in college students, including psychological distress, self-monitoring, and social comparison. Recommendations for future research include exploring the relationships of social comparison and self-monitoring with illicit drug use among college students, exploring the reasons for those findings—more qualitatively with students, and explore the types of

coping mechanisms used by those who engage in self-monitoring and downward social comparisons, including the interplay of self-monitoring, social comparisons, and substance use among college students. In conclusion, understanding the factors associated with substance use and risk for substance use disorders among college students would ultimately have tremendous social value and will assist in guiding our prevention and interventions services to college students.

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APPENDICES

APPENDIX A

TABLES

Table 1

Demographics of the Sample (n = 337)

Age	m = 22.34	sd = 6.91	range = 18-60
Gender		*n*	%
	Male	107	31.8
	Female	230	68.2
Race		*n*	%
	African American	126	37.4
	Caucasian	186	55.2
	Hispanic	7	2.1
	Native American	4	1.2
	Other	14	4.2
Sexual Orientation		*n*	%
	Heterosexual	310	94.2
	Gay/Lesbian	9	2.7
	Bisexual	10	3.0

Table 1 (continued)

Demographics of the Sample (n = 337)

Year in College	*n*	%
Freshman	163	48.7
Sophomore	84	25.1
Junior	39	11.6
Senior	49	14.6
Family Income	***n***	**%**
<10,000	29	9.0
10,001 – 15,000	21	6.5
15,001 – 20,000	21	6.5
20,001 – 25,000	21	6.5
25,001 – 30,000	25	7.7
30,001 – 40,000	35	10.8
40,001 – 50,000	38	11.7
50,001 – 60,000	27	8.3
60,001 – 70,000	25	7.7
70,001 – 80,000	23	7.1
80,001 – 90,000	24	7.4
90,001 or more	35	10.8

Table 2

Means, Standard Deviation Scores, and Range for Main Study Variables

	Mean	Standard Deviation	Range
SCS	76.95	16.92	15-110
DASS-21	34.67	10.44	0-51
SMS	26.61	3.31	0-17
SSI-SA	15.83	2.60	0-14
AADIS (grid)	18.22	5.66	13-53
AADIS (interview form)	28.32	16.40	0-68

SCS = Social Comparison Scale, DASS-21 = Depression, Anxiety, Stress Scale-21, SMS = Self-Monitoring Scale, SSI-SA = Simple Screening Index-Substance Abuse, AADIS = Adolescent Alcohol and Drug Involvement Scale

Table 3

Correlation Matrix for Main Study Variables

	SCS	DASS-21	SMS	AADIS
SCS	1	-.32**	.09	-0.08
DASS-21		1	.14**	.19**
SMS			1	.25**
AADIS				1

******p < .01 **(**2-tailed)

SCS = Social Comparison Scale, DASS-21 = Depression, Anxiety, Stress Scale-21, SMS = Self-Monitoring Scale, AADIS = Adolescent Alcohol and Drug Involvement Scale

Table 4

Multiple Regression Findings for Social Comparison and Self-monitoring as Predictors of Substance Use

Predictors	R	Rsq	F
Social comparison and Self-monitoring	.27	.071	12.61**

** $p < .01$

Table 5

Multiple Regression Findings for Psychological Distress, Social Comparison and Self-with Substance Use

Predictor Variables	*R*	R^2	R^2 *change*	*F*	*F change*
Psychological Distress	.19	.04	.04	12.86**	12.86**
Social Comparison and Self-monitoring	.30	.09	.05	10.83**	9.48**

**p < .01

Table 6

Means and Standard Deviations for Social Comparison, Self-Monitoring, and Psychological Distress by Substance Use Disorder Risk Group (Minimal Risk versus Risk)

	Minimal Risk of SUD (n = 221)		Risk of SUD (n = 108)	
SCS	m = 78.51	(sd = 16.77)	m = 74.46	(sd = 16.34)
SMS	m = 8.05	(sd = 3.02)	m = 9.83	(sd = 3.61)
DIS	m = 11.81	(sd = 9.66)	m = 17.44	(sd = 11.13)

APPENDIX B

INFORMED CONSENT

Informed Consent

You are being invited to take part in a research study about exploring your use of substances as well as your feelings about yourself in relation to others. The survey will include questions about how you feel compared to others (e.g. “In relationship to others, I generally feel superior”), substance use (e.g. “How often do you use alcohol and/or drugs”), mood (e.g. “I felt downhearted and blue”), and stress (“In the past 6 months I have failed a course”). You are being invited to participate in this research study because you are an undergraduate student at Northwestern State University enrolled in a 1000 or 2000 level psychology course. If you take part in this study you will be one of about 300 students to do so. Only students 18 and older can participate.

The primary investigators of this study are Jeffrey Klibert, Ph.D. and Amy Luna, M.S. There may be other people on the research team assisting at different times during the study. These individuals are undergraduate and graduate students in psychology who have been trained under Dr. Klibert in the ethical practice of collecting data from human participants. Neither the people in charge of the study nor any personnel involved in this study have any financial or personal interest in any company or instruments being used. The purpose of this study is to determine what types of personality characteristics predispose college students and inhibit college students from drinking alcohol. Alcohol abuse is a risky behavior that negatively affects college students’ mental and physical health. It is important for researchers to obtain a better/deeper understanding of what types of characteristics influence the development of drinking problems so that mental health professionals can create effective prevention and intervention programs. It is our hope that the information you provide us with will increase our understanding of these behaviors so that we can find more effective ways of reducing them.

This study will be completed through the internet. Participants may take the survey any time from any computer with internet access. Each participant will only have to take the survey once. You will not have to provide any follow up information after you complete the survey. This study is not an intervention study. There is no guarantee that you will get any benefit from taking part in this study. However, some people have obtained a deeper understanding of themselves, others, and the behaviors in which they engage in. Additionally, some people have also gained a greater understanding of how to conduct psychological research. We cannot and do not guarantee that you will receive any benefits from this study. To the best of my knowledge, the things you will be doing have no more risk of harm than what you would expect to experience on a normal day. Although we have made every effort to minimize this, you may find some questions we ask you to be upsetting or stressful. If so, we can tell you about some people who may be able to help you with these feelings. The individuals at the NSU Counseling Center are equipped to handle a number of emotional distress difficulties (i.e., sadness, loneliness, anger, anxiety, relationship issues, etc.) that students sometimes experience. If you feel stressed or uncomfortable after taking the survey, it is recommended that you visit the Counseling Center and make an appointment to talk to someone. The services that the

Informed Consent (continued)

Counseling Center provides are free for all students enrolled at NSU. They are located on third floor in the Student Union Building (room 305). You may contact them by telephone at 318-357-5621 or through e-mail at bartonr@nsula.edu. If you reside off campus and would have a difficult time obtaining access to NSU's Counseling Center you may want to consider calling SAMHSA's National Hotline for Substance abuse at 1-800-662-4357. The call is free and they may be able to help you access free or low cost services in your community.

Furthermore, if you decide to take part in the study you still have the right to decide at any time that you no longer want to continue. You may also skip any question that causes discomfort or distress. You will not be treated differently if you decide to stop taking part in the study. However, the individuals conducting the study may need to take you off of the study. They may do this if you are not able to follow the directions they give you, if they find that your being in the study is more risk than benefit to you, or if the primary investigator of the study decides to stop the study early for a variety of reasons.

If you decide to take part in the study, it should be because you really want to volunteer. You will not lose any benefits or rights you would normally have if you choose not to volunteer. Non-participation in this study will not negatively impact your grades. You can stop at any time during the study and still keep the benefits and rights you had before volunteering. You will receive research participation points for participating in this study. Equivalent alternative research participation credit will be available for those who elect not to participate. Please see your course instructor for alternative research participation opportunities.

Because you will receive research participation credit, this study is not completely anonymous. However, we will make every effort to ensure that your identity is not connected to your responses. For example, we will need to collect your name, course number, and professors name in order to notify your professors that you have participated in our study. As a result, this may temporarily lead to a loss of confidentiality. Specifically, we will have to collectively obtain your answers to the survey and your identifying information on SurveyMonkey.com. As a result, we will briefly be able to connect your responses to your identity. However, after receiving your responses and identifying information the primary investigators will manually separate them by typing your identifying information on a separate word file and deleting all of your identifying information that is connected to your survey packet. That way we will still be able to determine who participated in the study and minimize our ability to connect your identity to your responses. Moreover, we will separately save participants' response file and identifying information file on a password protected computer

The assignment of research participation credit is the duty of your professor. Once we have notified your professor of your involvement we will obtain all identifying

Informed Consent (continued)

information until the final semester grades have been submitted. We are doing this for documentation purposes only. Additionally, we will only communicate your involvement in the study to your professor. Your professors will not be allowed access to any of your responses. Moreover, all of your information will be held in a safe and secure environment. All data will be stored on a password protected data file and only the research team will have access to the data. Lastly, your information will be combined with information from other people taking part in the study. When we write up the

study to share it with other researchers, we will write about this combined information. You will not be identified in these written materials.

Before you decide whether to accept this invitation to take part in the study, please e-mail any questions or concerns that might come to mind now to the primary investigator, Dr. Klibert at klibertj@nsula.edu or at 318-357-5452. You may also contact Amy Luna at amy.luna@okstate.edu. She is conducting this study as part of her dissertation requirement. This study was approved by both Oklahoma State's IRB and NSU's IRB. Therefore, if you have questions about your rights as a research volunteer, you may contact Dr. Shelia Kennison, IRB Chair, 219 Cordell North, Stillwater, OK 74078, 405-744-1676 or irb@okstate.edu.

A copy of the summarized results of the study will be available by request made to the primary investigator. You will be told if any new information is learned that may affect your condition or influence your willingness to continue taking part in this study.

Since we cannot obtain your signature (to indicate that you have given your informed consent to freely participate in this study), we will assume that when you hit the "NEXT" button at the bottom you are giving your consent freely. To continue with the study please click the "NEXT" button. If you do not wish to take the survey or are hesitant about participating in this study, do not click the "NEXT" button; instead please e-mail the primary investigator to discuss any concerns you might have.

APPENDIX C

PARTICIPANT SCRIPT

Script

We are conducting a study to explore how different psychosocial and intrapersonal variables (i.e., situational response type, social comparison, mood) impact substance use behaviors (i.e., drinking, doing drugs) in college students. We are hoping to use the results of this study to establish effective prevention and intervention programs that will help reduce the prevalence of substance abuse and dependency college students.

Participation in this study is entirely voluntary. Students who are in 1000 and 2000 level undergraduate psychology courses will be invited to participate. Only students who are 18 years of age or older will be allowed to participate. If you decide to take part in this study you will be one of approximately 300 students to do so. Participation will include filling out a self-survey packet that should take approximately 40 minutes to complete. During this survey you will be asked a wide range of questions that focus on substance use, mood, stress, and how you feel in relation to others.

Participating in this study will fulfill partial completion of your research participation requirement. You will receive one unit of credit for participating in this study. For alternative ways of earning credit towards your research participation requirement please talk to your professor.

If you are interested in participating in this study and do not have any questions or concerns, please follow the directions below about how to access the research study. If you have some questions or concerns about participating in this study, please do not sign up for this study. Instead, we ask that you contact the primary instructor, Dr. Jeff Klibert, at klibertj@nsula.edu so that you can discuss some of your questions and/or concerns before signing up.

Go to:
https://www.surveymonkey.com/s.aspx?sm=OsYdJHhyG6XEGSV3_2f187cg_3d_3d
to participate in this research study. Once at the web page please follow the directions outlined on the web site. Please read the informed consent page carefully as it outlines the process and purpose of this study and your rights as a human participant. Again, please contact the primary investigator if you have any concerns or questions about the study.

APPENDIX D

MEASURES

Demographic Questionnaire

Directions: Please answer each question by filling in the blank or clicking on the appropriate response that best describes you.

1) How old are you? Age ____

2) Sex: Female___ Male ____

3) Race (Check all that apply):

____ African American/Black

____ American Indian/Native American

____ Asian/Asian American

____ Hispanic/Latino(a)

____ White, non-Hispanic

____ Other _____

4) What is your marital status?

____ Single

____ Partnered/Common Law

____ Married

____ Separated

____ Divorced

____ Widowed

5) What is your sexual orientation?

____ Heterosexual

____ Gay/Lesbian

____ Bisexual

Demographic Questionnaire (continued)

6) What year are you in college

____ Freshman

____ Sophomore

____ Junior

____ Senior

7) How many years of college have you completed?

____ 1 year of college ____ 6 years of college

____ 2 years of college ____ 7 years of college

____ 3 years of college ____ 8 years of college

____ 4 years of college ____ 9 years of college

____ 5 years of college ____ 10 years of college

8) Approximately, what is your family's annual income?

____ Less than 10,000 ____ 40,001 to 50,000

____ 10,001 to 15,000 ____ 50,001 to 60,000

____ 15,001 to 20,000 ____ 60,001 to 70,000

____ 20,001 to 25,000 ____ 70,001 to 80,000

____ 25,001 to 30,000 ____80,001 to 90,000

____ 30,001 to 40,000 ____ 90,001 or more

9) How many people are supported by your family income? (Please put number here).

____

Social Comparison Scale

Complete the following sentences by putting a mark on a ten point scale anchored with each of the following bipolar constructs.

1. "In relationship to others, I generally feel _____."

o 1 o 2 o 3 o 4 o 5 o 6 o 7 o 8 o 9 o 10
Inferior Superior

2. "In relationship to others, I generally feel _____."

o 1 o2 o3 o4 o5 o6 o7 o8 o9 o 10
Incompetent Competent

3. "In relationship to others, I generally feel _____."

o 1 o 2 o 3 o 4 o 5 o 6 o 7 o 8 o 9 o 10
Unlikeable Likeable

4. "In relationship to others, I generally feel _____."

o 1 o2 o 3 o 4 o 5 o 6 o 7 o 8 o 9 o 10
Left Out Accepted

5. "In relationship to others, I generally feel _____."

o 1 o 2 o 3 o 4 o 5 o 6 o 7 o 8 o 9 o 10
Different Same

6. "In relationship to others, I generally feel _____."

o 1 o 2 o 3 o 4 o 5 o 6 o 7 o 8 o 9 o 10
Untalented More Talented

Social Comparison Scale (continued)

7. "In relationship to others, I generally feel _____."

○ 1 ○ 2 ○ 3 ○ 4 ○ 5 ○ 6 ○ 7 ○ 8 ○ 9 ○ 10
Weaker Stronger

8. "In relationship to others, I generally feel _____."

○ 1 ○2 ○3 ○4 ○5 ○6 ○7 ○8 ○9 ○ 10
Unconfident More Confident

9. "In relationship to others, I generally feel _____."

○ 1 ○2 ○3 ○4 ○5 ○6 ○7 ○8 ○9 ○ 10
Undesirable More Desirable

10. "In relationship to others, I generally feel _____."

○ 1 ○2 ○3 ○4 ○5 ○6 ○7 ○8 ○9 ○ 10
Unattractive More Attractive

11. "In relationship to others, I generally feel _____."

○ 1 ○ 2 ○ 3 ○ 4 ○ 5 ○ 6 ○ 7 ○ 8 ○ 9 ○ 10
Outsider Insider

Self-Monitoring Scale

Answer true or false to the next 18 questions. If a statement is true or mostly true check "True". If a statement is false or mostly false check "False".

1	I find it hard to imitate the behavior of others.	True	False
2	At parties and social gatherings, I do not attempt to do or say things that others will like.	True	False
3	I can only argue for ideas which I already believe.	True	False
4	I can make impromptu speeches even on topics about which I have almost no information.	True	False
5	I guess I put on a show to impress or entertain people	True	False
6	I would probably make a good actor.	True	False
7	In a group of people, I am rarely the center of attention.	True	False
8	In different situations with different people, I often act like very different people.	True	False
9	I am not particularly good at making other people like me.	True	False
10	I am not always the person I appear to be.	True	False
11	I would not change my opinions in order to please someone else or win their favor.	True	False
12	I have considered being an entertainer.	True	False
13	I have never been good at games like charades or improvisational acting.	True	False
14	I have trouble changing my behavior to suit different people and different situations.	True	False
15	At a party, I let others keep the jokes and stories going.	True	False
16	I feel a bit awkward in company and do not show up quiet as well as I should.	True	False
17	I can look anyone in the eye and tell a lie with a straight face (if for the right end).	True	False
18	I may deceive people by being friendly when I really dislike them.	True	False

Depression, Anxiety, Stress Scale—21

Please read each of the statements and check a number 0, 1, 2, or 3 which indicates how much the statement applied to you over the past week. There are no right or wrong answers. Do no spend too much time on any statements.

0 = Did not apply to me at all
1 = Applied to me to some degree, or some of the time.
2 = Applied to me to a considerable degree, or a good part of the time.
3 = Applied to me very much, or most of the time

1. I found it hard to wind down.	0	1	2	3
2. I was aware of dryness of my mouth.	0	1	2	3
3. I couldn't seem to experience any positive feeling at all.	0	1	2	3
4. I experienced breathing difficulty (e.g., excessively rapid breathing, breathlessness in the absence of physical exertion).	0	1	2	3
5. I found it difficult to work up the initiative to do things.	0	1	2	3
6. I tended to over-react to situations.	0	1	2	3
7. I experienced trembling (e.g., in the hands).	0	1	2	3
8. I felt that I was using a lot of nervous energy.	0	1	2	3
9. I was worried about situations in which I might panic and make a fool of myself.	0	1	2	3
10. I felt that I had nothing to look forward to.	0	1	2	3
11. I found myself getting agitated.	0	1	2	3
12. I found it difficult to relax.	0	1	2	3
13. I felt down-hearted and blue.	0	1	2	3
14. I was intolerant of anything that kept me from getting on with what I was doing.	0	1	2	3
15. I felt I was close to panic.	0	1	2	3
16. I was unable to become enthusiastic about anything.	0	1	2	3
17. I felt that I wasn't worth much as a person.	0	1	2	3
18. I felt I was rather touchy.	0	1	2	3
19. I was aware of the action of my heart in the absence of physical exertion (e.g., sense of heart rate increasing, heart missing a beat).	0	1	2	3
20. I felt scared without good reason.	0	1	2	3
21. I felt that life was meaningless.	0	1	2	3

Simple Screening Instrument—Substance Abuse

The questions that follow are about your use of alcohol and other drugs. Answer the questions in terms of your experiences in the past 6 months.

1. Have you used alcohol or other drugs? (Such as wine, beer, hard liquor, pot, coke, heroin, or other opiods, uppers, downers, hallucinogens, or inhalants.)
   ⬭ Yes ⬭ No

2. Have you felt that you use too much alcohol or other drugs?
   ⬭ Yes ⬭ No

3. Have you tried to cut down or quit drinking or using other drugs?
   ⬭ Yes ⬭ No

4. Have you gone to anyone for help because of your drinking or drug use? (Such as Alcoholics Anonymous, Narcotics Anonymous, Cocaine Anonymous, or counselors, or a treatment program.)
   ⬭ Yes ⬭ No

5. Have you had any health problems? For example, have you (check all that apply)?
   ____ Had blackouts or other periods of memory loss?
   ____ Injured your head after drinking or using drugs?
   ____ Had convulsions, delirium tremens ("DTs")?
   ____ Had hepatitis or other liver problems?
   ____ Felt sick, shaky, or depressed when you stopped drinking/using?
   ____ Felt "coke bugs" or a crawling feeling under the skin after you stopped using drugs?
   ____ Been injured after drinking or using?
   ____ Used needles to shoot drugs?

6. Has drinking or other drug use caused problems between you and your family or friends?
   ⬭ Yes ⬭ No

7. Has your drinking or other drug use caused problems at school or at work?
   ⬭ Yes ⬭ No

8. Have you been arrested or had other legal problems? (Such as bouncing bad checks, driving while intoxicated, theft, or drug possession)
   ⬭ Yes ⬭ No

9. Have you lost your temper or gotten into arguments or fights while drinking or using other drugs?
   ⬭ Yes ⬭ No

Simple Screening Index—Substance Abuse (continued)

10. Are you needing to drink or use drugs more and more to get the effect you want?
    ⬭ Yes ⬭ No

11. Do you spend a lot of time thinking about or trying to get alcohol or other drugs?
    ⬭ Yes ⬭ No

12. When drinking or using drugs, are you more likely to do something you wouldn't normally do, such as break rules, break the law, sell things that are important to you, or have unprotected sex with someone?
    ⬭ Yes ⬭ No

13. Do you feel bad or guilty about your drinking or drug use?
    ⬭ Yes ⬭ No

14. Have you ever had a drinking or other drug problem?
    ⬭ Yes ⬭ No

15. Have any of your family members ever had a drinking or drug problem?
    ⬭ Yes ⬭ No

16. Do you feel that you have a drinking or drug problem now?
    ⬭ Yes ⬭ No

Adolescent Alcohol and Drug Involvement Scale

These questions refer to your use of alcohol and other drugs (like marijuana/weed or cocaine/rock). Circle the answers which describe your use of alcohol and/or other drug(s). Even if none of the answers seems exactly right, please pick the ones that come closest to being true. If a question doesn't apply to you, you may leave it blank.

1. How often do you use alcohol or other drugs (such as weed or rock)?

◯ Never ◯ Once or twice a year ◯ Once or twice a month ◯ Every weekend ◯ Several times a week ◯ Every day ◯ Several times a day

2. When did you last use alcohol or drugs?

◯ Never used alcohol or drugs ◯ Not for over a year ◯ Between 6 months and 1 year ago ◯ Several weeks ago ◯ Last week ◯ Yesterday ◯ Today

3. I usually start to drink or use drugs because…(Check all that apply).

◯ I like the feeling ◯ To be like my friends ◯ I am bored; or just to have fun ◯ I feel stressed, nervous, tense, full of worries or problems ◯ I feel sad, lonely, sorry for myself

4. What do you usually drink when you drink alcohol? (Choose One)

◯ Wine ◯ Beer ◯ Mixed drinks ◯ Hard liquor (vodka, whiskey, etc.) ◯ A substitute for alcohol

5. How do you get your alcohol or drugs? (Check all that apply)

◯ Supervised by parents or relatives ◯ From brothers or sisters ◯ From home without parent knowledge ◯ From my friends ◯ Buy on my own (legally, on the street, or with false ID)

6. When did you first use drugs or take your first drink?

◯ Never ◯ After age 15 ◯ At ages 14 or 15 ◯ At ages 12 or 13 ◯ At ages 10 or 11 ◯ Before age 10

Adolescent Alcohol and Drug Involvement Scale (continued)

7. What times of the day do you use alcohol or drugs? (check all that apply)

◯ At night ◯ Afternoons/after school ◯ Before or during school or work ◯ In the morning or when I first awaken ◯ I often get up during my sleep to use alcohol or drugs

8. Why did you take your first drink or why did you first use drugs? (Check all that apply)

◯ Curiosity ◯ Parents or relatives offered ◯ Friends encouraged me; to have fun ◯ To get away from my problems ◯ To get high or drunk

9. When you drink alcohol, how much do you usually drink?

◯ 1 drink ◯ 2 drinks ◯ 3-4 drinks ◯ 5-9 drinks ◯ 10 or more drinks

10. Whom do you drink or use drugs with? (Check all that apply)

◯ Parents or adult relatives ◯ With brothers or sisters ◯ With friends or relatives own age ◯ With older friends ◯ Alone

11. What effects have you had from drinking/using drugs? (Check all that apply)

◯ Loose, easy feeling ◯ Got moderately high ◯ Got drunk or wasted ◯ Became ill ◯ Passed out or overdosed ◯ Used a lot and next day didn't remember what happened

12. What effects has using alcohol or drugs had on your life? (Check all that apply)

◯ None ◯ Has prevented me from having a good time ◯ Have lost friends because of use ◯ Was in a fight or destroyed property

◯ Has interfered with talking to someone ◯ Has interfered with my school work ◯ Has gotten me into trouble at home ◯ Has resulted in an accident, an injury, arrest, or being punished at school for using alcohol or drugs

Adolescent Alcohol and Drug Involvement Scale (continued)

13. How do you feel about your use of alcohol or drugs? (Check all that apply)

◯ No problem at all	◯ I can control it and set limits of myself	◯ I can control myself, but my friends easily influence me	◯ I often feel bad about my use	◯ I need help to control myself	◯ I have had professional help to control my drinking or drug use

14. How do others see you in relation to your alcohol or drug use?

◯ Can't say or normal for my age	◯ When I use I tend to neglect my family or friends	◯ My family or friends advise me to control or cut down on my use	◯ My family or friends tell me to get help for my alcohol or drug use	◯ My family and friends have already gone for help about my use

Adolescent Alcohol and Drug Involvement Scale (continued)

For each drug I name, please tell me how often you typically use it. Consider only drugs taken without prescription from your doctor; for alcohol, don't count just a few sips from someone else's drink.

1. Smoking tobacco (Cigarettes, cigars)							
○ Never used	○ Tried but quit	○ Several Times a Year	○ Several Times a Month	○ Weekends Only	○ Several Times a Week	○ Daily	○ Several Times a Day
2. Alcohol (Beer, wine, liquor)							
○ Never used	○ Tried but quit	○ Several Times a Year	○ Several Times a Month	○ Weekends Only	○ Several Times a Week	○ Daily	○ Several Times a Day
3. Marijuana or Hashish (Weed or Grass)							
○ Never used	○ Tried but quit	○ Several Times a Year	○ Several Times a Month	○ Weekends Only	○ Several Times a Week	○ Daily	○ Several Times a Day
4. LSD, MDA, Mushrooms, Peyote, other hallucinogens (shrooms)							
○ Never used	○ Tried but quit	○ Several Times a Year	○ Several Times a Month	○ Weekends Only	○ Several Times a Week	○ Daily	○ Several Times a Day
5. Amphetamines (Speed, Ritalin, Ecstasy, Crystal)							
○ Never used	○ Tried but quit	○ Several Times a Year	○ Several Times a Month	○ Weekends Only	○ Several Times a Week	○ Daily	○ Several Times a Day
6. Power Cocaine (Coke, Blow)							
○ Never used	○ Tried but quit	○ Several Times a Year	○ Several Times a Month	○ Weekends Only	○ Several Times a Week	○ Daily	○ Several Times a Day
7. Rock Cocaine (Crack, Rock, Freebase)							
○ Never used	○ Tried but quit	○ Several Times a Year	○ Several Times a Month	○ Weekends Only	○ Several Times a Week	○ Daily	○ Several Times a Day

Adolescent Alcohol and Drug Involvement Scale (continued)

8. Barbiturates (Quaaludes, Downer, Ludes, Blues)							
○ Never used	○ Tried but quit	○ Several Times a Year	○ Several Times a Month	○ Weekends Only	○ Several Times a Week	○ Daily	○ Several Times a Day
9. PCP (Angel Dust)							
○ Never used	○ Tried but quit	○ Several Times a Year	○ Several Times a Month	○ Weekends Only	○ Several Times a Week	○ Daily	○ Several Times a Day
10. Heroin, other opiates (Smack, Horse, Opium, Morphine)							
○ Never used	○ Tried but quit	○ Several Times a Year	○ Several Times a Month	○ Weekends Only	○ Several Times a Week	○ Daily	○ Several Times a Day
11. Inhalants (Glue, gasoline, spray cans, white-out, rush, etc.)							
○ Never used	○ Tried but quit	○ Several Times a Year	○ Several Times a Month	○ Weekends Only	○ Several Times a Week	○ Daily	○ Several Times a Day
12. Valium, Prozac, or other tranquilizers (without a prescription)							
○ Never used	○ Tried but quit	○ Several Times a Year	○ Several Times a Month	○ Weekends Only	○ Several Times a Week	○ Daily	○ Several Times a Day
13. Other Drug							
○ Never used	○ Tried but quit	○ Several Times a Year	○ Several Times a Month	○ Weekends Only	○ Several Times a Week	○ Daily	○ Several Times a Day

Life Events Scale for Students

Please check the box next to each event if you have experienced the event in the past six months. Please check all that apply.

- ☐ Death of a parent
- ☐ Death of your best or very good friend
- ☐ Jail term (self)
- ☐ Breakup of parents' marriage/divorce
- ☐ Getting kicked out of school
- ☐ Major car accident (car wrecked, people injured)
- ☐ Pregnancy (either yourself of being the father)
- ☐ Failing a number of courses
- ☐ Parent losing a job
- ☐ Major personal injury or illness
- ☐ Losing a good friend
- ☐ Major change of health in close family member
- ☐ Breakup with boy/girlfriend
- ☐ Major and/or chronic financial problems
- ☐ Moving out of town with parents
- ☐ Seriously thinking about dropping school
- ☐ Getting an unjustified low mark on a test
- ☐ Moving out from home
- ☐ Failing a course
- ☐ Beginning an undergraduate or graduate program in a university
- ☐ Seeking psychological or psychiatric consultation
- ☐ Major argument with parents
- ☐ Major argument with boy/girlfriend
- ☐ Sex difficulties with boy/girlfriend
- ☐ Establishing a new, steady relationship with a partner
- ☐ Minor car accident
- ☐ Major financial problems
- ☐ Losing a part-time job
- ☐ Getting your own car
- ☐ Finding a part-time job
- ☐ Change of job
- ☐ Minor violation of the law (i.e., speeding ticket)
- ☐ Switch in program within the same college or university
- ☐ Family get-togethers
- ☐ Vacation with parents
- ☐ Vacation alone/with friends

APPENDIX E

COMPLETION OF RESEARCH PAGE

Completion of Research Page

In this section, we ask that you provide us with your name, course number to which you would like your credit to be assigned to, and the name of your professor. Again, we will use this information only to inform you professor that you have participated in this research. Once we have e-mailed your professor we will delete this information from our data set. Please see the next page for debriefing after you have given us your information.

1. What is your name

2. What is the course name and number that you would like to assign this credit towards?

3. What is the name of the professor/instructor of this course?

APPENDIX F

DEBRIEFING FORM

Debriefing Form

Debriefing Page

You were invited to take part in a research study about exploring your use of substances as well as your feelings about yourself in relation to others. The survey included questions about how you feel compared to others (e.g. "In relationship to others, I generally feel superior"), substance use (e.g. "How often do you use alcohol and/or drugs"), mood (e.g. "I felt downhearted and blue"), and stress ("In the past 6 months I have failed a course"). You were invited to participate in this research study because you were an undergraduate student at Northwestern State University enrolled in a 1000 or 2000 level psychology course. If you took part in this study you were one of about 300 students to do so. Only students 18 and older participated.

The primary investigators of this study are Jeffrey Klibert, Ph.D. and Amy Luna, M.S. There might have been other people on the research team assisting at different times during the study. These individuals are undergraduate and graduate students in psychology who were trained under Dr. Klibert in the ethical practice of collecting data from human participants. Neither the people in charge of the study nor any personnel involved in this study had any financial or personal interest in any company or instruments being used.

The purpose of this study was to explore the relationships between personality and substance use. This study took place via the Internet. There were no follow up procedures after you completed the study. Participants took the survey from any computer with Internet access. You were asked to review this consent form and complete a questionnaire consisting of 6 measures. To the best of the researchers' knowledge, the things you did had no more risk of harm than you would experience in everyday life. If, for some reason, you became upset during the process you could contact the Counseling Center on the third floor of the student union at NSU for free counseling services. The individuals at the NSU Counseling Center are equipped to handle a number of emotional distress difficulties (i.e., sadness, loneliness, anger, anxiety, relationship issues, etc.) that students sometimes experience. If you felt stressed or uncomfortable after taking the survey, it was recommended that you visit the Counseling Center and make an appointment to talk to someone. You may contact them by telephone at 318-357-5621 or through e-mail at bartonr@nsula.edu.

If you decided to take part in the study, it was on a voluntary basis. You did not lose any benefits or rights you would normally if you chose not to volunteer. You could have stopped at any time during the study and still have kept the benefits and rights you had before you volunteered. You received research participation points for participating in this study. Equivalent alternative research participation credits were available for those who elected not to participate. Please see your course instructor for alternative research participation opportunities. Because you received research participation credit, this study was not completely anonymous. However, we made and will continue to make every effort to ensure that your identity was not and is not connected to your responses. For

example, we separately collected and stored your identifying information from your responses. We collected your name, course number, and professor's name in order to notify your professors that you participated in our study. The assignment of research participation credit is the duty of your professor. Once we have notified your professor of your involvement in our study we will delete any identifying information that you have given us. Additionally, we will only communicate your involvement in the study to your professor. Your professors will not be allowed access to any of your responses. Moreover, all of your information is held in a safe and secure environment. All data is stored on a password protected data file and only the research team will have access to the data. Lastly, your information was combined with information from other people taking part in the study. When we write up the study to share it with other researchers, we will write about this combined information. You will not be identified in these written materials.

The potential benefits of participating in this study included an increased awareness of your current use of substances including the consequences of using and how you felt in general about yourself and in relation to others. The researchers did not guarantee that you would obtain any personal benefits due to your participation in this study. There were no foreseeable risks or costs associated with participating in this study. The individuals conducting the study may have taken you off of the study. They did this if you were not able to follow the directions they gave you, if they found that your being in the study was more risk than benefit to you, or if the researchers had to discontinue the administration of the study.

If you have any questions about the study you can contact the investigator, Jeffrey Klibert, Ph.D., at (318) 357-5452 or klibertj@nusla.edu or Amy Luna at amy.luna@okstate.edu. Amy Luna is a doctoral candidate in counseling psychology at Oklahoma State University. She is conducting this study as part of her dissertation requirement. This study was approved by both Oklahoma State's IRB and NSU's IRB. Therefore, if you have questions about your rights as a research volunteer, you may contact Dr. Shelia Kennison, IRB Chair, 219 Cordell North, Stillwater, OK 74078, 405-744-1676 or irb@okstate.edu.

A copy of the summarized results of the study will be available by request made to the primary investigator, Jeffrey Klibert, Ph.D., after September of 2009. You will be informed if any new information is learned that may affect your condition or influence your willingness to continue taking part in this study.

Since we could not obtain your signature (to indicate that you have given your informed consent to freely participate in this study), we assumed that when you hit the "NEXT" button at the bottom of the informed consent page you were giving your consent freely.

Debriefing Form (continued)

Thank you for participating in this study and please feel free to print the last two pages for your own records.

APPENDIX G

DEFINITION OF TERMS

Definition of Terms

Psychological distress - any type of negative emotional state that results in an unpleasant feeling (Henry & Crawford, 2005). Psychological distress will be measured by the Depression Anxiety Stress Scale-21 (DASS-21) which has three subscales: depression, anxiety, and stress (Lovibond & Lovibond, 1995). In this study, the total DASS-21 score was used to measure levels of psychological distress in college students.

Self-monitoring – an adaptive type of self-control over expressive behavior (Snyder, 1974). Self-monitoring will be measured by the Self-Monitoring Scale (SMS) which includes three factors: expressive self-control, social stage presence, and other-directedness (Synder & Gangestad, 1986). In this study, the total SMS score was used to measure levels of self-monitoring in college students.

Social comparison – an adaptive function that individuals use to make with others in order to rank themselves on social status (Allan & Gilbert, 1995). Social comparison will be measured by the Social Comparison Scale (SCS) which includes three subscales: social rank, attractiveness, and group fit. In this study, the total SCS score was used to measure levels of social comparison in college students.

Substance abuse – a maladaptive pattern of substance use that results in significant adverse consequences for the user (American Psychiatric Association, 2000). Substance abuse will be measured by the Simple Screening Instrument for Substance Abuse (SSI-SA; Winters & Zenilman, 1994). Consequences of substance abuse refer adverse outcomes related to substance use.

Definition of terms (continued)

Substance dependence – a maladaptive pattern of substance use that results in significant impairment of cognition, behavior, and/or physiology for the user (American Psychiatric Association, 2000).

Substance use – the use of a drug, a medication, or a toxin (American Psychiatric Association, 2000). Substance use will be measured by the Adolescent Alcohol and Drug Involvement Scale (AADIS**;** Moberg, 2005). In this study, the total score of the AADIS drug use grid was used to assess substance use levels in college students.

Substance use risk — the level of risk of substance use identified by cutoff scores for the SSI-SA and AADIS measures. College students were classified into the "minimal risk" of substance use group if they scored less than 4 on the SSI-SA and less than 37 on the AADIS; college students were classified into the "substance use risk" group if they scored 4 or higher on the SSI-SA or if they scored 37 or higher on the AADIS.

VITA

Amy Elizabeth Luna

Candidate for the Degree of

Doctor of Philosophy

Dissertation: THE RELATIONSHIP OF SELF-MONITORING, PSYCHOLOGICAL DISTRESS, AND SOCIAL COMPARISON WITH SUBSTANCE USE IN COLLEGE STUDENTS

Major Field: Educational Psychology

Biographical:

Personal Data:

Born in Springfield, MO, on February 5, 1982 to Terri (Matthews) Luna and Michael Luna.

Education:

Graduated from Glendale High School in Springfield, MO, in May 2000; received Bachelor of Arts in Psychology from Drury University, Springfield, MO, in May 2004; received Master of Science in Community Counseling from Oklahoma State University, Stillwater, OK, in December 2006. Completed the requirements for Doctor of Philosophy degree with a major in Educational Psychology at Oklahoma State University, Stillwater, Oklahoma in December, 2009.

Experience:

Co-Instructor for World of Work at OSU (2004-2005); Practicum at Starting Point II (2005-2007); Co-Instructor for Individual Appraisal (2005-2006); Therapist at Ponca City Medical Center (2006-2008); Assistant Director of the Counseling Psychology Clinic at OSU (2006-2008); Practicum at the Oklahoma City Veterans Affairs Center (2007); Internship at Central Louisiana State Hospital (2007-2008)

Professional Memberships:

American Psychological Association, Divisions 17 and 20

Name: Amy E. Luna Date of Degree: December, 2009

Institution: Oklahoma State University Location: Stillwater, Oklahoma

Title of Study: THE RELATIONSHIP OF SELF-MONITORING, PSYCHOLOGICAL DISTRESS, AND SOCIAL COMPARISON WITH SUBSATNCE USE IN COLLEGE STUDENTS

Pages in Study: 137 Candidate for the Degree Doctor of Philosophy

Major Field: Educational Psychology

Scope and Method of Study:

The purposes of this study were to determine the relationship of self-monitoring and social comparison with substance use in college student and the contribution of social comparison and self-monitoring to substance use, above and beyond what is contributed to by psychological distress as well as explore substance use risk group differences in social comparison, self-monitoring, and psychological distress. Participants for the study included 337 undergraduate students at a southwestern university. They completed the Social Comparison Scale, the Self-Monitoring Scale, the Depression Anxiety Stress Scale-21, the Simple Screening Index-Substance Abuse, the Adolescent Alcohol and Drug Involvement Scale, and the Life Events Scale for Students.

Findings and Conclusions:

Substance use among college students was significantly related to self-monitoring and psychological distress, but not significantly related to social comparison. Psychological distress was significantly related to social comparison and self-monitoring. Of interest, social comparison was not significantly related to self-monitoring. Self-monitoring and social comparison predicted 7.1% of variance in substance use. However, self-monitoring was the only significant predictor. When the relationship between substance use and psychological distress was accounted for, social comparison and self-monitoring uniquely predicted 5.3 % of variance in substance use. College students who were classified as being at risk for a substance use disorder reported more efforts to monitoring one's self-expression in relationships with others, more negative evaluations of self in comparison to others, and more psychological distress compared to college students who were classified as being at minimal risk for a substance use disorder. However, when the effects of gender and race were accounted for, there were no significant differences between substance use risk groups on social comparison.

ADVISER'S APPROVAL: Carrie Winterowd, Ph.D.