2011

The association between eating disorders and substance abuse

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THE ASSOCIATION BETWEEN EATING DISORDERS AND SUBSTANCE ABUSE

A Project

Presented to the

Faculty of

California State University,

San Bernardino

In Partial Fulfillment

of the Requirements for the Degree

Master of Social Work

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by

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ABSTRACT

The purpose of this study was to identify the relationship between eating disorders and substance abuse. The hypothesis expected to find a significant association between women at risk of eating disorders and women at risk for marijuana and alcohol abuse.

The study used a survey design with self administered questionnaires. Data were collected from 79 female college students who completed a three part anonymous survey that measured the risk for eating disorders, the risk for marijuana abuse, and the risk for alcohol abuse. The site for this study was the California State University, San Bernardino campus. Female participants between the ages of 18 and 38 were selected using a convenience sampling method.

The study found that 11.4% of the participants were at risk for eating disorder. The study also found that there was a significant association between the risk for eating disorders and the risk for alcohol abuse, although no significant relationship was found between the risk for eating disorder and marijuana abuse. However, there were significant differences of risk for marijuana abuse between ethnic groups. The findings of this study suggest

the importance of alcohol and other substance abuse issues in populations with eating disorders, therefore future research is needed to explore the relationship between eating disorders and substance abuse.

ACKNOWLEDGMENTS

I would like to thank my husband for his continuous support and patience throughout this entire process. Thanks to my family for their belief in me, thank you from the bottom of my heart. My cohort was a huge support, and words cannot begin to express my gratitude. This has been an incredible journey, thank you God for helping me push through.

Jandely Eich

I would like to thank my family and friends for their emotional support throughout my two years in the MSW program. Also, I would like to thank those special individuals that helped and motivated me with their encouraging words. Most importantly, I want to thank God for giving me the strength, hope, and faith when I most needed it.

Luisa Rodriguez

DEDICATION

This project is dedicated to my beloved grandmother, I will see you again some day. Que dios la bendiga Mama Luz.

Jandely Eich

This special project is dedicated to mi Angelito and the special people that helped me through this journey. Most importantly I want to dedicate this project to my cohort and myself for there support, without you guys it would not have been easy.

Luisa Rodriguez

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CHAPTER ONE

INTRODUCTION

The first chapter discusses the purpose of the study and presents an overview of the existence of the comorbidity of eating disorders and substance abuse. It will explore why substance abuse in individuals with eating disorders is an important research area. The study hypothesis will be presented as well as study design that will attempt research the question. The chapter also defines how the outcomes of the study will benefit the social work profession.

Problem Statement

After reviewing other quantitative studies and professional literature it became apparent that there are significant rates of substance abuse in populations with eating disorders. Over the years there has been a growing concern for the increasing rates of co-occurring eating disorders and substance abuse. Corcos et al. (2001) suggest that people that suffer from eating disorders are more likely to experience higher comorbidity rates with other psychiatric disorders including substance use. Most of the research suggests that people with bulimia nervosa

have a higher incidence of substance abuse than the anorexic population. Stocke, Goldberg, Corbett, and Katzman (2002) found that women with bulimia nervosa are more likely to have substance abuse problems than the general population. A 1994 study by Holderness et al. which reviewed 51 studies found that approximately 10% of women with anorexia nervosa and 41% of women with bulimia nervosa also experience a substance abuse disorder (as cited in Krug, Treasure, Anderluh, Bellodi, Cellini, Di Bernardo, et al., 2008). In addition to these findings research in high school and college campuses found that as the abnormal attitudes and eating behaviors increased the individual's substance use also increased (as cited in Wolfe & Maisto, 2000).

These facts provide valuable insight for social workers that are working in eating disorder treatment centers and substance abuse treatment programs. At the present time there are no formal treatment programs that address the unique needs of clients with both eating disorders and substance abuse problems. Most agencies will treat these disorders separately.

This information can serve as a foundation for the development of more comprehensive treatment programs for

individuals in both of these areas. It is important for agencies that are serving men and women with eating disorders to understand the need to assess for possible substance abuse. Carbaugh and Sais (2010) have suggested that although eating disorders and substance abuse should be treated simultaneously, the behaviors should be treated separately (2010). Moreover, Carabaugh and Sais it was also found that cognitive-behavioral therapy has proven to be very effective in the treatment of eating disorders and substance abuse (Carabaugh & Sais, 2010). Not only is it important for social workers to know how closely related these two mental health issues are, but it is important for them to develop a treatment plan with appropriate resources and support.

Purpose of the Study

The goal of this study was to explore the prevalence rates of substance abuse in women that are at risk of eating disorders. It has already been established in previous studies and literature that there is a strong relationship between eating disorders and substance abuse. Therefore, the purpose of this study was to replicate similar findings using a quantitative design.

This study design used statistics based on probability theory and sampling theory.

This approach facilitated a descriptive study in the association between eating disorders and substance abuse was observed. To identify the frequency of substance abuse in women at risk for eating disorders anonymous surveys were be used to collect data from female students on a college campus.

Both eating disorders and substance abuse problems are sensitive topics and many participants may be uncomfortable answering such personal questions about their eating habits or substance use. The anonymous surveys were self-administered to help keep the participants answers confidential. Participants were provided with a consent form delineating what the purpose of the study was, as well as addressing participant privacy, anonymity, and confidentiality. The fact that the participant self-administered the survey also promoted the objectivity of the data being collected by avoiding the impact of the researcher on the participant's answers.

Significance of the Project for Social Work

This study contributed to knowledge of eating disorders and the substance abuse among this relatively small group. This significantly contributed to both micro and macro social work practice.

In micro social work, practioners made aware of such comorbidities can begin to make more extensive assessments of the clients that may present with either an eating disorder or substance abuse problem. Helping clinicians understand the frequency of this problem can encourage more comprehensive assessments and treatment for both groups. Micro social workers can use this new knowledge to help their clients understand the risk factors involved in eating disorders and substance abuse. This will allow them to educate and prepare their clients for multiple levels of treatment.

Macro social workers also benefit from this knowledge. At the macro level the seriousness of the prevalence of substance abuse in eating disorders has already been established. This study may encourage other social workers to investigate why these patterns of abuse occur in eating disorders. The nature of this study will serve as an extensive assessment of the seriousness and

frequency of the co-occurence that exists between eating disorders and substance abuse. Researchers will be able to use this information as a starting point for more qualitative studies on eating disorders and substance abuse. Therefore, the study attempted to identify whether or not there was a significant relationship between women at risk for eating disorders and substance abuse.

CHAPTER TWO

LITERATURE REVIEW

Introduction

The literature review was an important aspect of the research study because it set the foundation for the study. It created a clear understanding of previous research studies and what the outcomes of those studies were to gain a better perspective. This section discusses the prevalence of substance abuse in people that suffer from eating disorders. The literature begins with the prevalence rates of eating disorders in the general population. The rates of substance abuse in general will also be discussed. Finally, an overview of the rates of substance abuse that exist in individuals that have eating disorders will also be presented.

Eating Disorders and Prevalence Rates

The American Psychiatric Association (APA) has categorized eating disorders in the Diagnostic Manual of Mental Disorders Fourth Edition Text Revision (DSM-IV TR) as "severe disturbances in eating behaviors" (2000, p. 583). This same manual separates these disturbances into two specific groups of anorexia nervosa and bulimia

nervosa. An eating disorder not otherwise specified category is also in place for the occasions in which an individual does not meet the criteria for either of the categories already discussed. For the purposes of this study only the anorexia nervosa and bulimia nervosa types will be reviewed (unless otherwise stated, "eating disorders" refers here to bulimia nervosa and anorexia nervosa).

The DSM-IV TR specifies anorexia nervosa by an individual's refusal to maintain an appropriate weight, experiencing an intense fear of gaining weight, as well as having a distorted perception of their own body (APA, 2000). To be diagnosed with anorexia nervosa an individual must weigh less than 85% of their ideal weight according to age and height (APA, 2000). Anorexia nervosa does have two sub-type categories: restricting type and binge-purging type. The former is characterized by weight loss being achieved by the individual's dieting, fasting, or extreme exercise and not purging during this episode (APA, 2000). The latter occurs when an individual regularly engages in binge-eating, purging or both even when only small amounts of food have been consumed (APA, 2000).

In contrast, bulimia nervosa is identified by the repeated cycles of binge eating that are followed by inappropriate and often intense compensatory behaviors such as purging, excessive use of laxatives, fasting, or excessive exercising (APA, 2000). To be diagnosed with bulimia nervosa an individual must engage in the cycle previously discussed twice a week for a minimum of 3 months. Bulimia nervosa also has two specific subtypes: purging type and non-purging type. The purging type is identified by regularly self-inducing vomiting, using laxative or diuretics, or enemas excessively to compensate for the binge episode (APA, 2000). The non-purging type uses other forms of inappropriate compensatory behaviors such as excessive exercise or fasting and rarely engages in the self-induced vomiting, excessive use of laxatives, diuretics, or enemas to compensate (APA, 2000).

The literature that is available for this specific disorder is primarily concentrated on the female population. Women are estimated to be 5 to 10 times more likely to have an eating disorder than men (as cited in Lock, Reisel, & Steiner, 2001). The onset for eating disorders appears to occur during a transitional age when

an individual is moving from adolescence into early adulthood, approximately between the ages of 18 to 25 (World Health Organization, 2004). Anorexia and bulimia nervosa are two especially serious health-threatening medical and psychological conditions with prevalence rates of women reported at approximately 1% for anorexia nervosa and 2% for bulimia nervosa (Granillo, Jones-Rodriguez, & Carvajal, 2005).

There is little known about men and eating disorders since their prevalence rates are even less than those of women. Anorexia nervosa in the male population is only 0.03% and about .05% in the bulimia nervosa group (Hudson, Hiripi, Pope, & Kessler, 2007). According to Harrop and Marlatt (2010) the rates for women may actually be as high as 3.7% for anorexia and 4.2% for bulimia. In addition it is argued that these rates may be increased in addicted populations (Harrop & Marlatt, 2010).

Some research suggests that the rates also increase when observing community samples as opposed to clinical populations that already meet the criteria for such diagnoses. The APA and Favaro, Ferrara, and Santonastaso argue that:

> disordered weight control behaviors and symptoms that do not necessarily meet psychiatric criteria for an eating disorder diagnosis are estimated to be as much as 20 times more common in community samples than are those behaviors and symptoms that meet diagnostic criteria. (as cited in Austin, Ziyadeh, Forman, Prokop, Keliher, & Jacobs, 2008, p. 2)

The research on eating disorders in general can be easily complicated by differences in subtypes and community versus clinical samples. While researchers still do not have a clear understanding of the long-term effects of bulimia nervosa, some believe the mortality rate for bulimia nervosa is as high as it is for anorexia. Approximately 10% of people with anorexia nervosa will die within 10 years of the onset of the illness (Sullivan, 2002). These rates can become more alarming as substance abuse also becomes a factor in eating disorders.

Prevalence Rates of Substance Abuse

Substance abuse is defined in different ways. The DSM-IV TR identifies substance abuse problems as "substance-related disorders" in which the term

"substance" refers to drug abuse (including alcohol), medications, or toxins (APA, 2000, p. 191). The substance use-related disorders are broken down into two categories: substance use and substance-induced disorders.

Substance use disorders are defined by either substance dependence or substance abuse. Substance-induced disorders can include substance intoxication, substance withdrawal, substance-induced psychotic disorder, etc. Much of the existing research uses the words *use* and *abuse* interchangeably and often does not make clear distinctions between the types of substance abuse. Therefore, for the purposes of this literature review and study the terms *substance abuse* and *substance use* will be of the same nature.

Substance abuse in the general population can be found for a variety of drugs, but this study will focus on two drugs: marijuana and alcohol. A study done by the U.S. Department of Health and Human Service's Substance Abuse and Mental Health Services Administration (SAMHSA) found that approximately 8% of Americans 12 years of age or older had used an illicit drug the month prior to the survey taken; of those illicit drugs taken, marijuana was

found to be the most frequently used (2009). The same study also found that 16.5% of young adults between the ages of 18 and 25 and 4.6% of adults aged 26 and older were marijuana users. These important findings clearly suggest that younger populations are abusing marijuana more than their older counterparts.

Alcohol abuse rates are also notable. Lee, Chou, Cho, Park, Dawson, and Grant (2010) reports the United States has an alcohol abuse rate of 5.2% and that the rates of abuse were significantly greater in male rather than female populations. The same study also found that the younger population groups had higher alcohol abuse rates than older adult groups. The SAMHSA (2009) supports this research by noting similar heavy drinking rates of 6.9% in Americans 12 or older. These patterns have also been found in less recent studies. A 1997 study found that dependence rates were higher in adult males than adult females for both alcohol and marijuana (Kandel, Chen, Warner, Kesslerd, & Grante, 1997).

As previously mentioned, people can experience a wide range of drug and alcohol problems. There are a range of factors that influence the various rates of drug use in groups of men and women. However, the rates of use

are cause for concern as substance abuse often plays a role in other psychiatric illness such as eating disorders.

Co-prevalence Rates of Eating Disorders and Substance Abuse

Over the years there has been a growing concern for the growing rates of co-occurring eating disorders and substance abuse. Corcos et al. (2001) suggests that people that suffer from eating disorders are more likely to experience higher comorbidity rates with other psychiatric disorders including substance abuse. Women with bulimia nervosa abuse use a range of substances; women in this group abuse substances like alcohol, illicit drugs (e.g. marijuana), prescription drugs, and non-psychoactive substances (e.g. laxatives and diuretics) (Klopfer & Woodside, 2008). Several of the studies that were conducted focus on specific types of substances, and alcohol appears to be a common area of interest. Luce, Engler, and Crowther (2007) wrote that women with bulimia nervosa "are more likely to use alcohol in general than women diagnosed with anorexia nervosa" (p. 178). Danksy, Brewerton, and Kilpatrick (2000) suggested that as many as 30% to 50% of

individuals with eating disorders meet the criteria for alcohol use disorder (AUD) (as cited in Krug et al., 2008). In many of the studies that look at the links between alcohol abuse and eating disorders, bulimia nervosa is the most closely associated with alcohol abuse. As discouraging as these findings may seem, it is important to remember that alcohol is abused in other groups as well. Likewise substances like marijuana also display a certain manner of appeal to those with eating disorders.

A similar pattern of use of marijuana has been revealed in several studies. Much of the current literature that exists today suggests that marijuana use occurs more frequently in bulimia nervosa groups as opposed to anorexia nervosa groups. A study done by Corte & Stein (2000) found that 8% of anorexic participants were current marijuana users while bulimic participants were more than double at 18% (p. 184). Herzog, Franko, Dorer, Keel, Jackson, and Manzo (2006) supports this trend as they also reported "that marijuana use occurred in 25% of patients with [bulimia] and only 5.25% of patients with [anorexia]" (p. 364). Klopfer and Woodside (2008) report that a study done by Wiederman and Pryor (1996)

found that 24.7% of women with bulimia nervosa admitted to using marijuana. It has been made clear that marijuana use does in fact exist in people with eating disorders and the rates are virtually the same across different studies.

There is no doubt that comorbidity does exist within these two groups. It is imperative that other substances such as psychotropic medications, stimulants, and other related drugs are also considered when observing the incidence of substance abuse in people with eating disorders.

The process of reviewing previous literature allowed an adequate hypothesis to be formulated about the substance abuse of the eating disordered groups. Carefully reviewing previous research studies clarified that substance abuse cannot be defined by a single substance such as alcohol or marijuana. Harrap and Marlatt (2010) state that these two disorders are associated with the highest mortality risks of all psychological disorders that manifest physical, emotional, and social challenges.

Theories Guiding Conceptualization

Personality theory is the guiding conceptualization of this study. Personality theory assumes that certain personality traits predispose certain behaviors and addictions. According to McNeece and DiNitto (2005) personality factors, such as impulsive behaviors, a high value on nonconformity combined with a weak commitment to the goals for achievements valued by society, and heightened stress are closely associated with both eating disorders and substance abuse.

Comprehensive literature reviews report that eating disorders and substance abuse share common personality traits that contribute common indicators to this theory. These common indicators are family history, self-medication tendencies, and personality traits. Some of the common personality traits include social anxiety hypersensitivity, a desire for affection and acceptance, physical self-damaging acts, suicidal threats, and antisocial behavior (Carbaugh & Sais, 2010). People with substance abuse and bulimia nervosa share some similar personality traits such as cravings, denial, and lack of self-control (Carbaugh & Sais, 2010). Moreover, individuals with these disorders are more prone to be

involved with behaviors that are impulsive and self-damaging.

Although personality models may help explain the comorbidity of substance abuse and eating disorders, it is important to note that there may be other factors that also influence the relationship between the two (Harrop & Marlatt, 2010). Factors such as family/personal histories of substance abuse, history of previous disturbances in eating behaviors,and physical or sexual abuse may also have some influence on an individual. Other challenges may have an impact on the development of eating disorders and substance abuse. Personality theory may be a plausible explanation for this phenomenon but there is always the possibility for further exploration that may contribute to this etiology.

Summary

This chapter included an extensive review of professional literature in reference to the comorbidity of eating disorders and substance abuse. The prevalence rates of eating disorders in terms of the general population were also examined. General substance abuse rates, specifically those of alcohol and marijuana, were

also explored. The chapter reviewed personality theory and how it attempts to explain the co-occurrence of eating disorders and substance abuse in individuals.

CHAPTER THREE

METHODS

Introduction

The third chapter explains the implementation of the study. The chapter explores the research site, who the research participants were, and how they were selected to participate in the study. The data gathering tools are reviewed and the validity and reliability of those instruments is explored. The steps taken to protect study participants will be explained. The process of recording and analyzing the data is also discussed.

Study Design

This study was designed as a quantitative study. The quantitative research approach used statistics based on probability theory and sampling theory. This design facilitated a descriptive study in which the relationship between two or more variables can be observed. This research study examined the likelihood of substance abuse in women at risk for eating disorders.

To be able to identify the frequency of substance abuse in women at risk of having eating disorders anonymous surveys were used to collect data from female

students on a college campus. The surveys were anonymous and self-administered to help keep the participant's answers confidential.

This research design was most appropriate for this study because it identified any relationship between eating disorders and substance abuse. This information was measured quantitatively using statistics and did not need intend to seek out any qualitative data that may be subjective.

However, the limitation of this study design is that it did not intend to identify why an association may or may not exist between eating disorders and substance abuse. Although the literature review explains possible factors that may contribute to the occurrence substance abuse in eating disorder populations this study only examined the statistical significance of substance abuse in the at risk group. In accordance with the study design the hypothesis was as follows: there will be significant relationship between women at risk for eating disorders substance abuse.

Sampling

The study site was California State University, San Bernardino (CSUSB). The population of interest was female university students between the ages of 18 and 38 that were at risk for eating disorders. Eating disorders are relatively scarce in the general population therefore a large sample was required to collect sufficient data for analysis. Therefore, all of the enrolled full-time and part-time female students between the previously mentioned ages were eligible for the study. An availability sampling method was use to collect data. The data were collected over a period of approximately two weeks in order to gain a substantial sample size.

Data Collection and Instruments

The data collected from the study participants was in the form of anonymous surveys. The first survey was a modified version of the EAT-26 (Garner, Olmsted, Bohr, & Garfinkel, 1982) which is a self-administered survey that measures the likelihood of the presence of an eating disorder (Appendix A). The EAT-26 is a widely used standardized screening tool designed to screen for disordered eating behaviors primarily in adolescents and

young adults. It is designed with 26 questions on Likert-scale. An individual can score anywhere from 0-78 points with the cutoff being 20, to distinguish between those who have distorted eating attitudes and/or behaviors and those who do not (Fox & Froom, 2009). Mintz and O'Halloran, (2000) note that the original EAT was found to be 90% accurate in identifying individuals who have already met the criteria for an eating disorder (as cited in Park & Beauted, 2007). A study done by Park & Beauted found the EAT-26 highly valid and reliable as it highly correlated with not only the Eat-40 but also the Eating Disorder Inventory (EDI) (2007). The EAT-26 assesses many of the same areas as the EDI and has been able to accurately identify distorted eating attitudes and behaviors.

The second and third surveys were also self-administered and measured the likelihood of the participant having a substance abuse problem. The second survey was the brief Michigan Alcohol Screening Test (bMAST) (Appendix. B) which was used to identify the likelihood of alcohol abuse. The bMAST is a simple 10-question test derived from the 25-item Michigan Alcohol Screening Test (MAST), which helps assess for

signs of a drinking problem. The test consists of 10 yes or no questions. Questions answered "yes" have a value or 2 or 5 points and those answered "no" have no point value. Scores of 4 points or more suggest a possible alcohol problem.

The bMAST has been widely used in different settings to test for alcohol abuse. The validity and reliability of the bMAST has been established by previous research suggesting its effectiveness at assessing for alcohol dependence related problems' severity (Connor, Maree, Gerald, Feeney, & Ross, 2007). "The bMAST was significantly correlated with the Alcohol Use Disorders Identification Test (AUDIT), and both measures performed similarly across a range of dependence-severity indices" (Connor, Maree, Gerald, Feeney, & Ross, 2007, p. 773).

The third survey, the Cannabis Use Identification Test-Revised (CUDIT-R) (Appendix C), screened for likely marijuana abuse. This instrument has been found to be a valid and reliable screening tool for problematic cannabis use. This instrument is composed of 8 items and is also self-administered. A score of 8 or more indicates hazardous cannabis use and a score of 12 or more indicates possible cannabis use disorder. The CUDIT-R has

demonstrated an 81.8% positive predictability and a sensitivity of 71.3% (Alcohol and Drug Abuse Institute Library, 2010). This tool captures important features such as consumption patterns, abuse and dependence, as well as psychological features (Adamson, Kay-Lambkin, Baker, Lewin, Thornton, Kelly, et al., 2010).

Procedures

Permission from the university was obtained to set up a table in front of the student union to distribute the surveys to the study participants. Refreshments were offered to participants as a way of thanking them for their participation in the study. The anonymity of the study participants was preserved by asking the participants to only mark an "x" on the consent form in lieu of their signature.

Both researchers were present at the time of the data collection to ensure the efficient collection of surveys and to answer any participant inquiries. The data collection period lasted approximately two weeks. The data collection took place on Tuesdays and Thursdays for three hours per day. During this time surveys were distributed and collected by both researchers.

Protection of Human Subjects

A research proposal and Institutional Review Board (IRB) application was submitted to CSUSB for the approval of the research study. Upon meeting all of the criteria for approval data were collected. Study participants were presented with an informed consent (Appendix D) that explained the purpose of the study before they completed the surveys. It also explained to participants the voluntary nature of the study therefore allowing withdrawal at any time. They were informed of no intention of harm or deceit in the study. The informed consents provided participants with information addressing their privacy, anonymity, and confidentiality.

Data Analysis

All three surveys had interval levels of measurement. After the data was collected it was entered into SPSS and a univariate analysis was run to identify the distribution of values of each variable. Measures of central tendency were identified. The mode, median, and mean were also produced.

To get more precise distribution of the values of the variables surrounding the mean, the standard

deviations were calculated. After the value of the standard deviation was found a bivariate analysis was conducted to test the study hypothesis, the relationship between eating disorders and substance abuse. Independent t-test were used to identify significant differences in mean scores between ethnic groups and substance abuse as well differences between the means scores for risk for eating disorders and participants grade.

Summary

Chapter Three explored the research study design, implementation, and analysis. The study was conducted on the CSUSB campus and the study participants were female students between the ages of 18 and 38. An informed consent was provided to all the study participants with a description of the study, its benefits, and risks. The EAT-26, bMAST, and CUDIT-R were the instruments of data collection. Once the data was collected several tests were run including ANOVA, Pearson's R, and a T-tests to identify any significant relationships between women at risk for eating disorders and substance abuse.

CHAPTER FOUR

RESULTS

Introduction

This chapter discusses the study findings including the relevant frequencies and descriptive statistics. Among these findings the sample demographic will be discussed including their ethnicity, age, and grade. Their total scores for each survey will be compared using both bivariate and multivariate analyses to identify any significant relationships between women at risk for eating disorders and substance abuse.

Presentation of the Findings

Table 1 presents the participants demographics by age, grade, and ethnicity. The study had a total of 79 participants. All of the participants in this study were female college students between the ages of 19 to 38 years. The respondents were grouped into three different age groups. Of the 79 respondents 58.2% were between the ages of 19-21, 25.3% were aged 22-25, and 16.5% were aged 26-38. Participants also varied in educational level; 19% were college freshmen, 29.1% sophomores, 16.5% juniors, 13.9% seniors, and 21.5% were graduate students. The

participants also identified with one of five ethnic groups. The largest ethnic group of respondents, 36.7%, was Hispanic, followed by 26.6% white, 21.5% other, 10.1% African-American, and 5.1% as Asian-American.

Table 1. Participant's Demographics

Variable	Frequency (n)	Percentage (%)
Ethnicity		
White	21	26.6
African-American	8	10.1
Asian-American	4	5.1
Hispanic	29	36.7
Other	17	21.5
Total	79	100.0
Grade		
Freshmen	15	19.0
Sophomore	23	29.1
Junior	13	16.5
Senior	11	13.9
Graduate	17	21.5
Total	79	100.0
Age		
19-21	46	58.2
22-25	20	25.3
26-38	13	16.5
Total	79	100.0

Table 2 represents the participants' responses to the 26 items in part A of the Eating Attitudes Test-26 (EAT-26) questionnaire. The respondents considered the

options as "always," "usually," "often," "sometimes," "rarely," and "never" for each of the 26 items in part A of the EAT-26 instrument which evaluated respondents attitudes about food. In the first item 38% of women reported "always" or "usually" being terrified about being overweight, compared with 41.8% responding "often" or "sometimes," and 20.2% reported "rarely" or "never."

In regards to item 2, "Avoid eating when I am hungry," 67.1% of the participants reported "rarely" or "never," 27.8% responded "often" or "sometimes," 5.1% "always" or "usually." Similar responses were observed when respondents identified their preoccupation with food with 17.7% answering "always" or "often", 29.1% "often" or "sometimes," and 53.2% "rarely" or "never."

Only 1.3% of respondents reported "always" going on an eating binge in which they felt they were not able to stop while 13.9% identified "often" or "sometimes" and 84.8% answered "rarely" or "never" engaging in binge eating. When asked if they cut their food into small pieces, 10.2% "always" or "usually," while 25.3% responses were "often" and "sometimes," and 64.6% reported "rarely" or "never."

In item 6 22.8% of respondents were "always" or "usually" aware of the calorie content of the food they consumed, 36.7% said they were "often" or "sometimes" aware, while 40.6% were "rarely" or "never" aware of it. Most respondents, 68.4%, "rarely" or "never" avoid foods high in carbohydrate content while 7.6% "usually" do. Only 6.4% "always" or "usually" felt that others preferred they ate more while 16.5% said "often" or "sometimes," and 77.3% reported "rarely" or "never."

Only 3.8% of the respondents "often" or "sometimes" vomited after eating compared to 96.2% who "rarely" or "never" vomited. Extreme guilt after eating was "always" or "usually" identified in 7.6% of participants, while 24% felt guilty "often" and "sometimes" and 68.4% "rarely" or "never" felt guilty after eating.

A preoccupation with being thinner yielded greater distribution among responses with 21.6% stated "always" or "usually," 41.7% "often" or "sometimes," and 36.7% "rarely" or "never" were preoccupied with the thought of being thinner. Interestingly, 38% "always" or "usually" thought about burning up calories when exercising and while 34.2% do so "often" or "sometimes" and 27.9% "rarely" or "never" did.

When participants were asked if they believed others thought they were too thin 11.4% answered "always" or "usually," 14% "usually" or "often", and 74.7% "rarely" and "never". The majority of study participants, 45.6%, "rarely" or "never" were preoccupied with the thought of fat on their body, in comparison with of 34.2% reporting "often" and "sometimes" and 20.3% "always or "usually."

When participants were asked if they take longer than others to eat there meals 56.9% responded "rarely" or "never," while 21.5% said "sometimes" or "often," and 21.5% responded "always" or "usually." Only 3.8% "usually" avoided foods with sugar in contrast with 22.8% did so "often" or "sometimes," and 73.4% "rarely" or "never" avoided foods with sugar.

A total of 65.8% of participants "rarely" or "never" eating diet foods, 27.9% reported they ate diet foods "sometimes" or "often," and only 6.3% "usually" ate diet foods. When participants were asked if they felt as though food controlled their life 75.9% felt as though food "rarely" or "never" controlled their life, 16.4% said "often" or "sometimes," and 7.6% "always" or "usually".

The distribution of responses was different when self-control around food was identified; 55.7% reported "often" or "sometimes" practicing self-control around food, 22.8% "rarely" or "never" did so, and 21.5% "always" or "usually" used self-control. Only 5.1% of participants "usually" felt others pressured them to eat in comparison with 19% who felt "often" or "sometimes" pressured, and 75% who "rarely" or "never" felt pressure to eat.

In an examination of item 21, 12.7% of participants "always" or "usually" admit giving too much thought to food, 22.8% only did so "often" or "sometimes," and 64.6% give too much thought to food. "Always" or "usually" experiencing discomfort after eating sweets was reported in 10.2% of participants, 26.6% experienced it "often" or "sometimes," and 63.2% "rarely" or "never" felt uncomfortable after eating sweets.

Most, 53.2% of women, "rarely" or "never" engage in dieting behaviors, 34.2% "often" or "sometimes" diet, and 12.6% "always" or "usually" engage in such behaviors. A small percentage of respondents, 5.1%, "always" or "usually" liked their stomachs to be empty; comparatively, 12.5% "often" or "sometimes" like their

stomach empty, and 82.3% "rarely" or "never" liked the feeling of an empty stomach.

The impulse to vomit after meals was "always" present in 1.3% of women, only 6.3% felt this impulse "often" or "sometimes", and 92.4% "rarely" or "never" felt the impulse to vomit after meals. The final item indicated that 44.3% of respondents "always" or "usually" enjoy trying rich new foods, 43% enjoyed this "often" or "sometimes," 12.7% "rarely" or "never" enjoy trying new rich foods. The total EAT-26 scores revealed that only 13.9% of the participants were at risk for eating disorders.

Table 2. Eating Attitudes Test Items of the Participants

Variable	Frequency (n)	Percentage (%)
Am terrified about being overweight.		
Always	19	24.1
Usually	11	13.9
Often	12	15.2
Sometimes	21	26.6
Rarely	11	13.9
Never	5	6.3
Avoid eating when I am hungry.		
Always	1	1.3
Usually	3	3.8
Often	5	6.3
Sometimes	17	21.5
Rarely	24	30.4
Never	29	36.7

Variable	Frequency (n)	Percentage (%)
Find myself preoccupied with food.		
Always	8	10.1
Usually	6	7.6
Often	5	6.3
Sometimes	18	22.8
Rarely	24	30.4
Never	18	22.8
Have gone on eating binges where I feel that I may not be able to stop.		
Always	1	1.3
Usually	0	0
Often	2	2.5
Sometimes	9	11.4
Rarely	18	22.8
Never	49	62.0
Cut my food into small pieces.		
Always	3	3.8
Usually	5	6.3
Often	9	11.4
Sometimes	11	13.9
Rarely	21	26.6
Never	30	38.0
Aware of the calorie content of food that I eat.		
Always	7	8.9
Usually	11	13.9
Often	12	15.2
Sometimes	17	21.5
Rarely	16	20.3
Never	16	20.3
Particularly avoid food with high carbohydrate content (i.e. bread, rice, potatoes, etc.)		
Always	0	0
Usually	6	7.6
Often	4	5.1
Sometimes	15	19.0
Rarely	24	30.4
Never	30	38.0

Variable	Frequency (n)	Percentage (%)
Feel that others would prefer that I ate more.		
Always	1	1.3
Usually	4	5.1
Often	6	7.6
Sometimes	7	8.9
Rarely	13	16.5
Never	48	60.8
Vomit after I have eaten.		
Always	0	0
Usually	0	0
Often	1	1.3
Sometimes	2	2.5
Rarely	12	15.2
Never	64	81.0
Feel extremely guilty after eating.		
Always	1	1.3
Usually	5	6.3
Often	5	6.3
Sometimes	14	17.7
Rarely	24	30.4
Never	30	38.0
I am preoccupied with a desire to being thinner.		
Always	10	12.7
Usually	7	8.9
Often	8	10.1
Sometimes	25	31.6
Rarely	15	19.0
Never	14	17.7
Think about burning up calories when I exercise.		
Always	18	22.8
Usually	12	15.2
Often	11	13.9
Sometimes	16	20.3
Rarely	12	15.2
Never	10	12.7

Variable	Frequency (n)	Percentage (%)
Other people think that I am too thin.		
Always	4	5.1
Usually	5	6.3
Often	4	5.1
Sometimes	7	8.9
Rarely	14	17.7
Never	45	57.0
I am preoccupied with the thought of having fat on my body.		
Always	10	12.7
Usually	6	7.6
Often	7	8.9
Sometimes	20	25.3
Rarely	19	24.1
Never	17	21.5
Take longer than others to eat my meals.		
Always	6	7.6
Usually	11	13.9
Often	5	6.3
Sometimes	12	15.2
Rarely	25	31.6
Never	20	25.3
Avoid foods with sugar in them.		
Always	0	0
Usually	3	3.8
Often	3	3.8
Sometimes	15	19.0
Rarely	26	32.9
Never	32	40.5
Eat diet foods.		
Always	0	0
Usually	5	6.3
Often	7	8.9
Sometimes	15	19.0
Rarely	26	32.9
Never	26	32.9

Variable	Frequency (n)	Percentage (%)
Feel that food controls my life.		
Always	3	3.8
Usually	3	3.8
Often	5	6.3
Sometimes	8	10.1
Rarely	17	21.5
Never	43	54.4
Display self-control around food.		
Always	2	2.5
Usually	15	19.0
Often	16	20.3
Sometimes	28	35.4
Rarely	8	10.1
Never	10	12.7
Feel that others pressure you to eat.		
Always	0	0
Usually	4	5.1
Often	4	5.1
Sometimes	11	13.9
Rarely	26	32.9
Never	34	43.0
Give too much time and thought to food.		
Always	3	3.8
Usually	7	8.9
Often	6	7.6
Sometimes	12	15.2
Rarely	21	26.6
Never	30	38.0
Feel uncomfortable after eating sweets.		
Always	4	5.1
Usually	4	5.1
Often	6	7.6
Sometimes	15	19.0
Rarely	22	27.8
Never	28	35.4

Variable	Frequency (n)	Percentage (%)
Engage in dieting behaviors.		
Always	5	6.3
Usually	5	6.3
Often	8	10.1
Sometimes	19	24.1
Rarely	18	22.8
Never	24	30.4
Like my stomach to be empty.		
Always	1	1.3
Usually	3	3.8
Often	2	2.5
Sometimes	8	10.0
Rarely	20	25.3
Never	45	57.0
Have the impulse to vomit after meals.		
Always	1	1.3
Usually	0	0
Often	2	2.5
Sometimes	3	3.8
Rarely	10	12.7
Never	63	79.7
Enjoy trying new rich foods.		
Always	23	29.1
Usually	12	15.2
Often	14	17.7
Sometimes	20	25.3
Rarely	9	11.4
Never	1	1.3

Table 3 represents the participants' responses to the questions from part B of the EAT-26 questionnaire. The respondents considered the options as "Never," "Once a month or less," "2-3 times a month," "Once a week," "2-3 times a week," and "once a day or more" for items A through D and "yes" or "no" for item E. In the first

question, 77.2% of women reported "never" going on eating binges where they felt that they may not be able to stop, compared to 15.2% went on eating binges "once a month or less," 5.1% binged "2-3 times a month," and 2.5% binged "once a week."

Most of the respondents, 84.8%, indicated that they "never" made themselves vomit to control their weight or shape, but 13.9% reported doing so "once a month or less," and only 1.3% stated doing so "2-6 times a week." When the use of laxatives and diet pills was examined 82.3% of the participants reported "never" using them to control their weight, 7.6% used them "once a month or less," 3.8% used them "2-3 times a month", 1.3% "once a week" or "2-6 times a week", and 3.8% used laxatives or diet pills to control their weight "once a day or more." Only 41.8% of respondents reported "never" exercising more than 60 minutes a day to lose or control their weight, while 21.5% did so "once a month or less," 8.9% of women exercised for more than an hour "2-3 times a month," 7.6% exercised "once a week," and 20.3% admitted to exercising for more than an hour "2-6 times a week."

Table 3. Eating Attitudes Items of the Participants

Variable	Frequency (n)	Percentage (%)
Gone on eating binges where you feel that you many not be able to stop?		
Never	61	77.2
Once a month or less	12	15.2
2-3 times a month	4	5.1
Once a week	2	2.5
2-6 times a week	0	0
Once a day or more	0	0
Ever made yourself sick (vomited) to control your weight or shape?		
Never	67	84.8
Once a month or less	11	13.9
2-3 times a month	0	0
Once a week	0	0
2-6 times a week	1	1.3
Once a day or more	0	0
Ever used laxatives, diet pills or diuretics (water pills) to control your weight or shape?		
Never	65	82.3
Once a month or less	6	7.6
2-3 times a month	3	3.8
Once a week	1	1.3
2-6 times a week	1	1.3
Once a day or more	3	3.8
Exercised more than 60 minutes a day to lose or to your control weight?		
Never	33	41.8
Once a month or less	17	21.5
2-3 times a month	7	8.9
Once a week	6	7.6
2-6 times a week	16	20.3
Once a day or more	0	0
Lost 20 pounds or more in the past 6 months?		
Yes	3	7.6
No	76	92.4

Table 4 shows the rates of cannabis use for women based on their questionnaire response. In the first question 81% of the participants reported that they have never used cannabis, while 10.1% of participants have used monthly or less, 8.8% have used times a 2-4 times a month or less. When participants were asked how many hours a week they were "stoned" 84.8% admitted being "stoned" less than 1 hour on a typical day, while 12.7% of the participants reported being "stoned" for 2-4 hours a day, and 2.6% reported been "stoned" 5-7 or more hours a day.

Almost 94.9% of participants reported "never" having found themselves unable to stop from using cannabis in the last 6 months, but about 1.3% indicated this "less than monthly," and 3.8% state they were unable to stop smoking cannabis on a "weekly" or "daily basis." The great majority of the participants, 97.3%, indicated that during the last 6 months they "never" failed to do what was expected from them because of using cannabis, 3.8% reported that they have failed "less than monthly" to do what is expected from them, and 2.5 % have failed "weekly" to do what is expected from them because of the use of cannabis.

Nearly 93.7% of the participants indicated that in the last 6 months they have "never" devoted a great deal of their time to getting or recovering from the use of cannabis, while 3.8% reported devoting their time to getting or recovering from cannabis "less than monthly" or "monthly," and approximately 2.6% devoting their time to recovering from or getting cannabis "weekly" or "daily." In the last 6 months 92.4% of the participants responded "never" having a problem with memory or concentration after using cannabis, in contrast, 3.8% identified having a problem "less than monthly," and 3.8% described "daily or almost daily" trouble with memory or concentration.

The majority of the participants, 96.2%, described "never" using cannabis in situations that could have been physically hazardous, such as driving, operating machinery or caring for children, on the other hand, 3.8% participants indicated they have been in dangerous situations "monthly or less." When women were asked if they ever thought cutting down or stopping the use of cannabis 88.6% reported "never" having ever the thought of cutting down, 2.5% stated that they have thought about

it but not in the last 6 months, and 8.9% informed that they have thought about it during the past 6 months.

Table 4. The Cannabis Use Disorder Identification Test-Revised (CUDIT-R) Items

Variable	Frequency (n)	Percentage (%)
How often do you use cannabis?		
Never	64	81.0
Monthly or less	8	10.1
2-4 times a month	3	3.8
2-3 times a week	2	2.5
4 or more times a week	2	2.5
How many hours were you "stoned" on a typical day when you had been using cannabis?		
Less than 1	67	84.8
1 or 2	6	7.6
3 or 4	4	5.1
5 or 6	1	1.3
7 or more	1	1.3
How often during the past 6 months did you find that you were not able to stop using cannabis once you had started?		
Never	75	94.9
Less than monthly	1	1.3
Monthly	0	0
Weekly	2	2.5
Daily or almost daily	1	1.3
How often during the past 6 months did you fail to do what was normally expected from you because of using cannabis?		
Never	74	97.3
Less than monthly	3	3.8
Monthly	0	0
Weekly	2	2.5
Daily or almost daily	0	0

Variable	Frequency (n)	Percentage (%)
How often in the past 6 months have you devoted a great deal of your time to getting, using, or recovering from cannabis?		
Never	74	93.7
Less than monthly	2	2.5
Monthly	1	1.3
Weekly	1	1.3
Daily or almost daily	1	1.3
How often in the past 6 months have you had a problem with your memory or concentration after using cannabis?		
Never	73	42.4
Less than monthly	3	3.8
Monthly	0	0
Weekly	1	1.3
Daily or almost daily	3	2.5
How often do you use cannabis in situations that could be physically hazardous, such as driving, operating machinery, or caring for children?		
Never	76	96.2
Less than monthly	3	3.8
Monthly	0	0
Weekly	0	0
Daily or almost daily	0	0
Have you ever thought about cutting down, or stopping your use of cannabis?		
Never	70	88.6
Yes, but not in the past 6 months	2	2.5
Yes, but during the past 6 months.	7	8.9

Table 5 shows the responses to the brief Michigan Alcohol Screening Test (bMAST) questionnaire. The respondents considered "yes" or "no" answers for each of 10 items which evaluated the risk for alcohol abuse. As

shown in the table 38.0% of the participants reported "yes" to feeling as a normal drinker, in contrast, 62.0% indicated "no." Approximately 38% participants stated their friends or relatives think they were a normal drinker, but 62% of the participants reported they were not normal drinkers. Nearly all of the participants, 96.2%, reported never attending a meeting of Alcoholics Anonymous, while 3.8% admitted attending a meeting.

The majority of the participants, 88.6%, reported that they had never lost friends, girlfriends, or boyfriends because of drinking; in comparison, to 11.4% of the participants reported they have lost some kind of a relationship due to drinking alcohol. Approximately 97.5% of the participants indicated not ever getting into trouble at work because of drinking and 11.4% admitted they had gotten into trouble at work because of drinking. Just about 5.1% of the participants stated they had neglected obligations, family, or work for 2 or more days in a row because of drinking, but 94.9% denied ever neglecting their obligations. Roughly, 2.5% of respondents indicated having delirium tremens (DT), severe shaking, heard voices, seen things that weren't

there after heavy drinking, and about 97.5% denied having any such symptoms.

Most participants, 98.7%, denied seeking help for their drinking, and one respondent had solicited help for their drinking with someone. All participants except two reported never being hospitalized for drinking alcohol. All participants except two indicated never having been arrested for drunk driving, and only 2.5% of the participants reported having been arrested for driving after drinking.

Table 5. Brief Michigan Alcohol Screen Test (b-MAST) Items

Variable	Frequency (n)	Percentage (%)
Do you feel you are a normal drinker?		
Yes	30	38.0
No	49	62.0
Do friends or relatives think you are a normal drinker?		
Yes	30	38.0
No	49	62.0
Have out ever attended a meeting of Alcoholics Anonymous?		
Yes	3	3.8
No	76	96.2

Variable	Frequency (n)	Percentage (%)
Have you ever lost friends or girlfriends/boyfriends because of drinking?		
Yes	9	11.4
No	70	88.6
Have you ever gotten into trouble at work because of drinking?		
Yes	2	2.5
No	77	97.5
Have you ever neglected your obligations, your family, or your work for 2 or more days in a row because you were drinking?		
Yes	4	5.1
No	75	94.9
Have you ever had delirium tremens (DT), severe shaking, heard voices, seen things that weren't there after heavy drinking?		
Yes	2	2.5
No	77	97.5
Have you ever gone to anyone for help about your drinking?		
Yes	1	1.3
No	78	98.7
Have you ever been in a hospital because of drinking?		
Yes	2	2.5
No	77	97.5
Have you ever been arrested for drunk driving or driving after drinking?		
Yes	2	2.5
No	77	97.5

A Pearson correlation coefficient was calculated to assess the relationship between eating attitudes and alcohol abuse. The eating attitudes total scores were

moderately related to the alcohol screening scores ($r(77) = .261$, $p < 0.05$). This indicated a significant linear relationship between the two variables, as women's risk for eating disorders increased so did their risk for alcohol abuse. There was no significant relationship found between the eating attitudes total scores of the and the cannabis use total scores. A Pearson's correlation was calculated examining the relationship between those two variables, and a weak correlation that was not significant was found. The risk of eating disorder was not related to increased risk of marijuana abuse.

A one-way ANOVA was conducted to assess ethnicity difference in cannabis use. A significant difference in means of the CUDIT-R total scores was found among the ethnic groups, $(F(4, 74) = 3.012, p < .01)$. On average, participants who identified themselves as white had a score of 8.80, African-American scored 12.25, Asian American scored 0.5, Hispanic scored 2.34, and "other" scored 10.55. No significant differences were found between ethnic groups and risk for eating disorders or the alcohol abuse.

An independent-samples *t* test comparing the mean scores of the White and African-American groups and the cannabis use total scores found significant differences between the means of the two groups ($t = 0.16$, $df = 27$, $p < .05$). The African-American group had significantly higher cannabis use scores than the White group. There was also a significant difference of mean EAT-26 scores between freshman and juniors ($t = 0.37$, $df = 26$, $p < .05$).

Summary

This chapter included a review of the demographics of the study sample of 79 female college students between the ages of 19 through 38. A large portion of the participants were either white or Hispanic. A bivariate analysis was conducted and identified a significant relationship between the risk for eating disorders and the risk for alcohol abuse, although no significant relationship was found between the risk for eating disorder and marijuana abuse. Although there was no significant relationship identified between the risk for eating disorders and marijuana abuse there appeared to be

significant differences of risk for marijuana abuse between ethnic groups.

CHAPTER FIVE

DISCUSSION

Introduction

In this chapter the study findings will be explored as well as their implication for social work practice, policy and research. The limitations of the study will also be discussed.

Discussion

This study proposed that women at risk for eating disorders would also be at risk for substance abuse (specifically alcohol and marijuana abuse). In the small study sample of college women aged between 18 and 38, participants were grouped by age, ethnicity, and grade. Hispanic women were over represented in the sample, making up 36.7% of participants, followed by 26.6% of White, 10.1% of African-American, and 5.1% of Asian-American students. This representation is consistent with the ethnic diversity of the study site. According to California State University, San Bernardino (CSUSB) the largest ethnic group consists of 43.2% Hispanic students, followed by 25.6% of White students,

10% of African-American students, and 6.6% Asian-American (2011).

The risk for eating disorders has been observed on college campuses, especially among young women and this may be explained by the fact that women attend college at approximately the same age as the onset for bulimia nervosa (Berg, Frazier, & Sherr, 2009). According to Woodside and Garfinkel (1992), one third of the eating disorders developed in college are found in women (as cited in Winzelberg et al., 2000). Out of the 79 female college participants 13.9% were found to be at risk for an eating disorder based on their total score. However, the risk for eating disorders may be higher; Berg, Frazier, and Sherr found that 49% of women reported engaging in binge eating as well as other compensatory behaviors to control their weight, and the most common non-compensatory methods employed to control weight included excessive exercise and fasting (2009). The findings in this study found that 22.7% of the participants "always", "usually", or "often" engaged in dieting behaviors to control their weight, and 53% of the participants reported feeling "terrified of being overweight."

The study found that a significant association existed between the risk for eating disorders and the risk for alcohol abuse. The results suggest that as risk for eating disorders increases so does the risk for alcohol abuse. Holderness, Brooks-Gunn, and Warren (1994) also found a strong relationship between bulimia nervosa and alcohol dependence across a number of alcohol drinking measures. Piran and Gadalla (2006) found an association between eating disorders and life-time alcohol dependence.

This study found that there was a significant difference in the mean scores of risk for disorders between women in their freshmen and junior years of college. There have been many studies that have found an increased risk of eating disorders in college students, particularly in women. Bergg, Frazier and Sherr found that 49% of undergraduate women reported engaging in binge eating or other compensatory behavior at least once a week (2009). One study found that there was no increase in risk for women between their sophomore and senior years of college (Bason, Foran, & Bookwala, 2007). There are not sufficient studies that have looked at differences in risk for eating disorders based on time

spent in college. However, the ones that have looked at those factors have found no significant differences.

However, the study findings failed to identify a significant relationship between the risk for eating disorders and the risk for marijuana abuse. The present study contradicted previous findings that have suggested a relationship between the two factors. Interestingly, the study found that there was an ethnic difference in the risk for marijuana abuse. African-American students tended to have a risk for marijuana use than other ethnic groups. This study finding was consistent with Nasim, Corona, Belgrave, Utsey, and Fallah's study (2007), which found that African-American women between the ages of 18-25 are more likely than other ethnic groups to smoke marijuana. There have not been sufficient studies that have replicated similar findings, and further research to study the differences of risk for marijuana abuse between ethnic groups is necessary.

Limitations

There are number of limitations to the study. The sample utilized for the study was relatively small and consisted of 79 female college students. Although the

majority of eating disorders occur in women, the findings in this study cannot be generalized to a larger female college population. While the study used widely used screening tools to measure risk for eating disorder, alcohol abuse, and cannabis abuse these measures did not specifically provide diagnostic information.

The instrument used to measure the risk for marijuana abuse, he CUDIT-R, focused on a 6-month use and frequency based on weeks and months, as opposed to the duration and quantity of actual "use." This subtle issue may impact the severity of actual use. Further, the items of the instrument used to measure the risk for alcohol abuse, the bMAST, may also be subject to interpretation by the participant. The questions did not specifically inquire about the number of drinks that were consumed daily, weekly, or monthly. The questions in the survey were not sensitive to situational factors that might influence alcohol use and its effects.

Recommendations for Social Work Practice, Policy and Research

Although the results of the study did not completely support the hypothesis, the study was able to find a significant relationship between risk for eating

disorders and risk for alcohol abuse, but found no risk for marijuana abuse. Future studies should be done to continue to explore the relationship between eating disorders and substance abuse. The findings of this study suggest the importance of evaluating alcohol and other substance abuse issues in populations with eating disorders. Further investigation of this relationship may warrant continuous treatment of both eating disorders and substance abuse as opposed to their treatment in separate mental health services entities. Moreover, this study can also contribute to growing awareness of co-occurence of eating disorders and substance abuse.

The clinical implications of the findings imply the need for comprehensive assessment for clients that present with either an eating disorder or substance abuse problem. From a treatment perspective clinical social workers need to understand and consider the possibility of eating disorders coexisting with substance abuse. In The findings support the need for the development screening instruments that assess for substance abuse in eating disorder groups as well as eating disorders in substance abuse groups. Furthermore, this study also supports the need for the development of treatment

approaches for individuals with the co-occurrence of eating disorders and substance abuse.

Conclusions

Previous research has suggested that there is a relationship between eating disorder and substance abuse. However, the findings of this study have posed interesting results. There appears to be a relationship between the risk for eating disorders and the risk for alcohol abuse. However, this was not the case when the risk for eating disorders was compared with the risk of a marijuana abuse. Hence, research is needed to understand the relationships that exist between eating disorders and substance to be able discern how they each influence each other. Once those relationships are understood the screening and treatment of these co-occurring disorders can be significantly improved.

APPENDIX A

EATING ATTITUDES TEST (EAT-26)

Eating Attitudes Test (EAT-26)

Instructions: This is a screening measure to help you determine whether you might have an eating disorder that needs professional attention. This screening measure is not designed to make a diagnosis of an eating disorder of take the place of a professional consultation. Please fill out the below form as accurately, honest and completely as possible. There are no right or wrong answers. All of your responses are confidential.

Part A: Complete the following questions:

1) Birth Year:
2) Ethnicity: White African-Americans Asian-Americans Hispanic Other
3) Grade Level: Freshmen Sophomore Junior Senior Graduate
4) Ever been overweight or underweight? Yes or No

Part B: Circle a response for each of the following statements:

1. Am terrified about being overweight.	Always	Usually	Often	Some Times	Rarely	Never
2. Avoid eating when I am hungry.	Always	Usually	Often	Some Times	Rarely	Never
3. Find myself preoccupied with food.	Always	Usually	Often	Some Times	Rarely	Never
4. Have gone on eating binges where I feel that I may not be able to stop.	Always	Usually	Often	Some Times	Rarely	Never
5. Cut my food into small pieces.	Always	Usually	Often	Some Times	Rarely	Never
6. Aware of the calories content of foods that I eat.	Always	Usually	Often	Some Times	Rarely	Never
7. Particularly avoid food with a high carbohydrate content (i.e. bread, rice, potatoes, etc.)	Always	Usually	Often	Some Times	Rarely	Never
8. Feel that other would prefer if I ate more.	Always	Usually	Often	Some Times	Rarely	Never
9. Vomit after I have eaten.	Always	Usually	Often	Some Times	Rarely	Never
10. Feel extremely guilty after eating.	Always	Usually	Often	Some Times	Rarely	Never
11. Am preoccupied with a desire to be thinner.	Always	Usually	Often	Some Times	Rarely	Never
12. Think about burning up calories when I exercise.	Always	Usually	Often	Some Times	Rarely	Never
13. Other people think that I am to thin.	Always	Usually	Often	Some Times	Rarely	Never
14. Am preoccupied with the thought of having fat on my body.	Always	Usually	Often	Some Times	Rarely	Never
15. Take longer than others to eat my meals.	Always	Usually	Often	Some Times	Rarely	Never
16. Avoid foods with sugar in them.	Always	Usually	Often	Some Times	Rarely	Never
17. Eat diet foods.	Always	Usually	Often	Some Times	Rarely	Never
18. Feel that food controls my life.	Always	Usually	Often	Some Times	Rarely	Never
19. Display self-control around food.	Always	Usually	Often	Some Times	Rarely	Never
20. Feel that others pressure you to eat.	Always	Usually	Often	Some Times	Rarely	Never
21. Give too much time and thought to food.	Always	Usually	Often	Some Times	Rarely	Never
22. Feel uncomfortable after eating sweets.	Always	Usually	Often	Some Times	Rarely	Never
23. Engage in dieting behaviors.	Always	Usually	Often	Some Times	Rarely	Never
24. Like my stomach to be empty.	Always	Usually	Often	Some Times	Rarely	Never
25. Have the impulse to vomit after meals.	Always	Usually	Often	Some Times	Rarely	Never
26. Enjoy trying new rich foods.	Always	Usually	Often	Some Times	Rarely	Never

Part C: Behavioral Question: In the past 6 months have you:

A. Gone on eating binges where you feel that you may not be able to stop?*	Never	Once a month or less	2-3 times a month	Once a week	2-6 times a week	Once a day or more
B. Ever made yourself sick (vomited) to control your weight or shape?	Never	Once a month or less	2-3 times a month	Once a week	2-6 times a week	Once a day or more
C. Every used laxatives, diet pills or diuretics (water pills) to control you weight or shape?	Never	Once a month or less	2-3 times a month	Once a week	2-6 times a week	Once a day or more
D. Exercised more than 60 minutes a day to lose or to your control weight?	Never	Once a month or less	2-3 times a month	Once a week	2-6 times a week	Once a day or more
E. Lost 20 pounds or more in the past 6 months?	Yes	No				

*Defined as eating much more than most people would under the same circumstances and feeling that eating is out of control.

APPENDIX B

BRIEF MICHIGAN ALCOHOL SCREENING TEST (BMAST)

BRIEF MICHIGAN ALCOHOL SCREENING TEST (MAST)

Circle Yes or No

1. Do you feel you are a normal drinker?* (Yes/No)
2. Do friends or relatives think you are a normal drinker?* (Yes/No)
3. Have you ever attended a meeting of Alcoholics Anonymous? (Yes/No)
4. Have you ever lost friends or girlfriends/boyfriends because of drinking? (Yes/No)
5. Have you ever gotten into trouble at work because of drinking? (Yes/No)
6. Have you ever neglected your obligations, your family, or your work for 2 or more days in a row because you were drinking? (Yes/No)
7. Have you ever had delirium tremens (DTs), severe shaking, heard voices, seen things that weren't there after heavy drinking? (Yes/No)
8. Have you ever gone to anyone for help about your drinking? (Yes/No)
9. Have you ever been in a hospital because of drinking? (Yes/No)
10. Have you ever been arrested for drunk driving or driving after drinking? (Yes/No)

Pokorny, A. D., Miller, B. A., Kaplan H. B. (1972). The brief MAST: A shortened version of the Michigan Alcoholism screening test. *American Journal of Psychiatry 129*(3), 342-345.

APPENDIX C

THE CANNABIS USE DISORDER IDENTIFICATION TEST - REVISED (CUDIT-R)

THE CANNABIS USE DISORDER IDENTIFICATION TEST - REVISED (CUDIT-R)

Have you used any cannabis over the past six months? YES / NO

If YES, please answer the following questions about your cannabis use. Circle the response that is most correct for you in relation to your cannabis use *over the past six months*

1. How often do you use cannabis?

Never	Monthly or less	2-4 times a month	2-3 times a week	4 or more times a week
0	1	2	3	4

2. How many hours were you "stoned" on a typical day when you had been using cannabis?

Less than 1	1 or 2	3 or 4	5 or 6	7 or more
0	1	2	3	4

3. How often during the past 6 months did you find that you were not able to stop using cannabis once you had started?

Never	Less than monthly	Monthly	Weekly	Daily or almost daily
0	1	2	3	4

4. How often during the past 6 months did you fail to do what was normally expected from you because of using cannabis?

Never	Less than monthly	Monthly	Weekly	Daily or almost daily
0	1	2	3	4

5. How often in the past 6 months have you devoted a great deal of your time to getting, using, or recovering from cannabis?

Never	Less than monthly	Monthly	Weekly	Daily or almost daily
0	1	2	3	4

6. How often in the past 6 months have you had a problem with your memory or concentration after using cannabis?

Never	Less than monthly	Monthly	Weekly	Daily or almost daily
0	1	2	3	4

7. How often do you use cannabis in situations that could be physically hazardous, such as driving, operating machinery, or caring for children:

Never	Less than monthly	Monthly	Weekly	Daily or almost daily
0	1	2	3	4

8. Have you ever thought about cutting down, or stopping, your use of cannabis?

Never	Yes, but not in the past 6 months	Yes, during the past 6 months
0	2	4

Adamson, Kay-Lambkin, Baker, Lewin, Thorton, Kelly, and Shellman. (2010). An Improved Brief Measure of Cannabis Misus: The Cannabis Use Disorders Identification Test-Revised (CUDIT-R). Drug and Alcohol Dependence (In Press).

APPENDIX D

INFORMED CONSENT

INFORMED CONSENT

You are invited to participate in a study that attempts to examine the relationship between eating disorders and substance abuse. This study is being conducted by graduate social work students from CSUSB, Jandely Cermeno and Luisa Rodriguez, under the supervision of Professor Janet Chang. The study has been approved by the School of Social Work Sub-Committee of CSUSB Institutional Review Board.

Purpose: The goal of this study is to explore the relationship between women at risk for eating disorders and substance abuse.

Description: If you take part in this study, you will be asked to fill out three brief surveys that ask about your eating attitudes/behaviors, alcohol use, and marijuana consumption.

Confidentiality: The surveys will remain confidential and anonymous and no record will be made or kept of your name or any other identifying information. The anonymous data from the surveys will only be seen by the researchers; the results will be published in the university library for educational purposes and they will also be made available to any study participants who request it.

Duration: All three surveys should take no more than 15 minutes.

Risk: There are no foreseeable risks in taking part in this study and there are no personal benefits involved.

Benefits: Your participation will help create a greater understanding about the relationship between eating disorders and substances, creating greater awareness these serious mental health issues.

Contact: If you have any questions or concerns about this study you can contact Dr. Chang (909/537-5184).

Results: The results will be available in the university library after December of 2011.

By marking an "x" below, you agree that you have been fully informed about these surveys, are at least 18 years old, and are volunteering to take part.

_____ _____

Mark Date

APPENDIX E

DEBRIEFING STATEMENT

DEBRIEFING STATEMENT

Thank you for your participation. Jandely Cermeno and Luisa Rodriguez are grateful for you time and effort. The questionnaires you just completed will help identify the relationship between eating disorders and substance abuse. Your answers will also help to understand how likely someone who is at risk for an eating disorder will also have some kind a substance abuse problem. The results of this study will be available in the Pfau library after September 2011. Dr. Chang will be available to answer any questions that you may have. We know that you have provided us with very important information that will contribute to ongoing research regarding eating disorders and substance abuse. Thank you again.

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ASSIGNED RESPONSIBILITIES PAGE

This was a two-person project where authors collaborated throughout. However, for each phase of the project, certain authors took primary responsibility. These responsibilities were assigned in the manner listed below.

1. Data Collection:

   Team Effort: Jandely Eich & Luisa Rodriguez

2. Data Entry and Analysis:

   Team Effort: Jandely Eich & Luisa Rodriguez

3. Writing Report and Presentation of Findings:

   a. Introduction and Literature

      Team Effort: Jandely Eich & Luisa Rodriguez

   b. Methods

      Team Effort: Jandely Eich & Luisa Rodriguez

   c. Results

      Team Effort: Jandely Eich & Luisa Rodriguez

   d. Discussion

      Team Effort: Jandely Eich & Luisa Rodriguez