

Promotive and Protective Factors of Illegal Substances Usage among College Students

Jackson de Carvalho, PhD

Full Professor & MSW Program Director
Prairie View A&M University
Prairie View, Texas 77466
United States of America

Darron Garner, PhD, LCSW

Associate Professor
Prairie View A&M University
Prairie View, Texas 77466
United States of America

Abstract

Substance abuse is rising in the United States, especially among adolescent college students exposed to a new environment with a lack of supervision and a desire to belong. During this transition, they are exposed to the use of illegal substances. The research on college substance use is expansive. Nevertheless, there is a lack of studies on promotive and protective factors for college students who use illegal substances. This study aimed to determine promotive and protective factors for substance usage. Thus, this study explored the relationship between gender, social class identification, self, Spirituality, and peer/parental exposure to substance usage and illegal substance use. Results showed that the promotive and protective factors of friend use, parent use, and spiritual connection significantly correlated with substance use in college students. These results indicated the importance of prevention and intervention programs for college students. Findings showed that exposure to peers using substances were a significant indicator of substance use. Hopefully, this study will increase awareness about the issue of increased American substance use and that understanding the findings can inform the development of interventions to address the problem.

Keywords: *Substance, use, illegal, promotive, protective and interventions*

1.0. Introduction

Substance use is on the rise in America and has reached alarming levels. A handful of studies suggest that American substance use may reach historical levels (Centers for Disease Control and Prevention, 2021; Madison, 2016; Unity Behavioral Health, 2020; Kunnen, 2016). In addition to leading to other criminal offenses, it also leads to overdose deaths. The Center for Disease Control and Prevention has noted that the number of deaths caused by overdose has increased by about 5% from 2018 to 2019. This number has quadrupled since 1999 (Center for Disease Control and Prevention, 2021). In addition, from 2002 to 2013, the rate of heroin among women increased to 100 percent (Centers for Disease Control and Prevention, 2021; Kunnen, 2016).

Historically, substance use and crime, in general, are assumed to be a problem for just the poor and disadvantaged in society. Over the years, recent studies have found evidence to suggest otherwise. For instance, a study found that higher parental education is linked to higher cocaine use, drinking, and marijuana rates in early adulthood (Humensky, 2010). It was also determined that higher parental income is associated with higher marijuana use and binge drinking (Humensky, 2010). Additionally, Patrick, Wightman, Schoeni and Schulenger (2012) found that alcohol and marijuana use was associated with higher socioeconomic status for young adults. Substance usage and addiction do not discriminate among people; almost everyone is at risk (Patrick et al., 2012; Pew Research Center, 2019).

The conventional definition and classification of substance abuse disorders in the Diagnostic and Statistical Manual of Mental Disorders (DSM-5) dwell on substance use disorders. However, it does little to touch on the definitions and classification of diagnosis, treatment strategies and research on concurrent substance use (CSU) or CSU disorder (CSUD) (SAMHSA, 2021). CSU involves individual use of two or more substances, including substances and alcohol. The use of more than one substance can result in compulsive use of those substances despite its negative consequences, and this can lead to CSUD (De Carvalho & Garner, 2019; SAMHSA, 2021). In 2018, the number of young adults in the United States was 34.1 million, with more than one-third of the population reporting binge drinking in the past one month and about two in five of these populations using illicit substances in the past year (AAC, 2022).

Furthermore, the data showed that 1/7 of the youth had a substance use disorder, whereas 1/100, 1/13, and 1/17 of young adults presented with opioid use, illegal substance use, and marijuana abuse disorders (SAMHSA, 2019). Although concurrent alcohol and marijuana use was the most common among the population, the use of other substances had been reported in this population.

This study aims to determine promotive and protective factors for substance usage (AAC, 2022; American Psychological Association, 2021). Thus, this study explores the relationship between gender, social class identification, self, Spirituality, and peer/parental exposure to substance usage and illegal substance use. According to AAC (2022), the promotive and protective factors of friend use, parent use, and religious connection are significant predictors of substance use in college students. These results indicate the importance of prevention and intervention programs for college students. Findings show that exposure to peers using substances is a significant indicator of substance use. It is hoped that this study will increase awareness about the issue of increased American substance use and that understanding the findings can inform the development of interventions to address the problem (Farrington & Ttofi, 2012; Humensky, 2010).

2.0. Literature Review

The relevant literature shows that using illegal substances is among the more severe problems in America, and college students are considered prime targets for substance abuse and binge drinking. In addition, it is well known that college students are more likely to engage in risky behavior. For example, some students will mix use substances and other substances. According to Snipes & Benotsch (2012), students who mix alcohol with energy drinks were more likely to report the use of cocaine, ecstasy, and marijuana which was associated with high-risk sexual behaviors. These behaviors include drunk sex, unprotected sex, or sex while under the influence of substances (Snipes & Benotsch, 2012). Individuals transitioning into adulthood go through a period of instability and identity exploration (Arnett 2005/2011). Moreover, adolescence is a vulnerable stage of life for individuals to begin their history of substance usage. Twenty-six percent of males and 19.2% of female full-time college students report current use of illicit substances (Substance Abuse and Mental Health Services Administration, 2013; Snipes & Benotsch, 2012).

Specifically, several large-scale studies have researched the prevalence of substance use in college students. For instance, the National Institute on Substance Abuse (2015) found that the prevalence of the use of substances in the past 30 days was about 21.4-22% for any substance, while 18.1-20.3% for marijuana use. One study conducted on first-year college students found that 9.4% of students met the conditions for a cannabis use disorder (Arria, Caldeira, Allen, Bugbee, Vincent & O'Grady, 2017). There is a scant inquiry on the substance use patterns of college students and their continuous enrollment. The study of Brown, España, Benca-Bachman, Welsh, and Palmer (2020) found that frequent illicit substance use, and marijuana use are linked to college students being less likely to stay in college. Since substance use can impair cognitive functioning, it is also associated with disrupting academic progression. Indeed, college student substance use is linked to health problems and poor academics (Arria et al., 2017; Brown et al., 2020).

2.1. Alcohol

Alcohol is the most prevalent substance consumed among college students. It has an impact on both a student's physical and mental health. It is normative to participate in heavy drinking during a student's college years. First-year students essentially drink at almost double the threshold for acceptable alcohol consumption (Dorji, Srichan, Apidechkul, Sunern & Suttana, 2020). Campus life encourages binge drinking and going out every week. Binge drinking results in a dangerous blood alcohol count (BAC) which leads to many alcohol-related incidents. It is the more significant contributor to death rates of college students (Druckman, Gilli, Klar & Robison, 2015), including motor vehicle crashes or due to consumption of alcohol. Unfortunately, the more time a student engages in drinking, the higher the odds they will eventually use other substances (Graupensperger, Jaffe, Fleming, Kilmer, Lee & Larimer, 2021). Additionally, evidence suggests that consuming alcohol in college is a predictive component in suffering from problematic drinking after they graduate (Dorji et al., 2020; Druckman et al., 2015).

3.0. Protective and Promotive Factors for Substance Use

The present study proposes a model to investigate protective and promotive factors for college students associated with substance usage. Protective and promotive factors serve as conditions or attributes for individuals or groups that eliminate risk for certain behaviors and promote a sense of well-being. Additionally, a protective factor is a variable that predicts the low probability of negative behavior (Farrington & Ttofi, 2012). Similarly, promotive factors are associated with positive development (Zimmerman, Stoddard, Eisman, Caldwell, Aiyer, & Miller, 2014). There are a handful of protective factors for substance use.

In a longitudinal analysis of predictive, protective, and promotive factors, Walters (2020) found that individuals who associate with prosocial peers served as both promotive and risk factors. In addition, associating with prosocial peers led to a meaningful reduction in substance use (Graupensperger et al., 2021; Walters, 2020). It is noteworthy that promotive factors for all ages vary (Johnston, O'Malley, Bachman, Schulenberg, 2014). A promotive factor is a condition or characteristic that increases an individual's risk of developing a condition or harmful behavior. In other words, they are significantly associated with a particular outcome (whether beneficial or not). Thus, a promotive factor is a circumstance or characteristic common in someone who behaves or commits a particular act (Johnston et al., 2014). At-risk college students are more likely to engage in harmful behaviors like substance use and abuse. Therefore, the exposure to promotive and protective factors during the transition into adulthood is due to instability and vulnerability (Dutra-Thomé, 2019; Zimmerman et al., 2014).

3.1. Lifestyle factors and demographics

Demographics and lifestyle choices are important factors when considering the use of illicit substances. Research has indicated that substance use (National Institute on Substance Abuse, 2015; Johnston, O'Malley, Bachman, Schulenberg, 2014) and experimentation (Johnston et al., 2014) is most prevalent during adolescence and peak in young adulthood at the college age. Regarding age, Maggs, Williams, and Lee (2011) discovered that the use of cocaine increases, and the use of marijuana decreases as individuals age. Many research studies have concluded that college men have higher rates of substance usage than women (Maggs et al., 2011). Conversely, Brown et al. (2020) surveyed college students' substance use and found little gender difference (Brown et al., 2020; Johnston et al., 2014). However, there are some conflicting findings regarding college athletes regarding substance use. Although some studies have found that college athletes have reported using some substances (Brown et al., 2020; Druckman, 2015; Maggs et al., 2011), other studies have found that being involved with an athletic team on campus was a protective factor in preventing substance use (Dutra-Thomé, 2019; Yusko, Buckman, White & Pandina, 2008). However, further research needs to be conducted, and university policy needs to be evaluated. Some universities may enforce stricter guidelines for college athletes, which is why more research needs to be done. Alternatively, some universities may have a different athletic team environment that encourages the use of substances. For instance, Christian universities will most likely have stricter rules for substances and alcohol, and substance use may be less prevalent due to a religious background that encourages strong morals (Maggs et al., 2011; Yusko et al., 2008).

A comparison study of undergraduate student-athletes vs. nonathletes suggested that male athletes were likelier to report heavy-drinking behaviors than male nonathletes (Yusko et al., 2008). Conversely, it was the opposite for females (Yusko et al., 2008). Female student-athletes reported drinking alcohol significantly less than female nonathletes (Yusko et al., 2008). Although, another cross-sectional survey found that substance use was more significant among sexual minority students, regardless of being an athlete or not (Kroshus & Davoren, 2016). Subsequently, this indicates that participation in athletics made no difference in the use of substances (Kroshus & Davoren, 2016). Given the controversy in findings, future studies need to investigate athletic groups before conclusions can be made and consider multiple universities' policies (Ford, 2007; Kroshus & Davoren, 2016).

Moreover, students who belong to a sorority or fraternity or identify as bisexual, lesbian, or gay are more likely to use substances (Reed, Prado, Matsumoto, Amaro, 2010). In support, a survey conducted by Shadick, Dagirmanjian, Trub, and Dawson (2016) given to gay, bisexual, heterosexual, lesbian, and those in questioning found that students reported a higher usage rate in nonmedical prescription substances in bisexual and questioning students. In addition, lesbian, bisexual, and questioning females were engaging in nonmedical use of prescription substances more than heterosexual women (Shadick et al., 2016). It is also suggested that single young adults use substances more than those currently married (Reed et al., 2010; Shadick et al., 2016).

3.2. Spirituality

One interesting protective factor for substance use is Spirituality, which can be viewed as an individual's religious affiliation, frequency of prayer, frequency of religious service attendance, and belief in God (Pearce 2017). A spiritual, or religious upbringing, was often found in the relevant literature as negatively associated with substance use in youth (Jang & Johnson 2011). Helm et al. (2002) demonstrated that college students who identified as religious was a protective factor when it came to using substances. This was also supported in an analysis where a negative relationship was found; those who scored high on religious well-being had low substance rates (Francis, ap Siôn, & Village, 2014). Researchers who analyzed a three-wave panel data from the National Survey of Children found that the participants reported that those who were raised by religious parents and considered religious attendance for their children to be important were less likely to use substances than those who were not raised by religious parents (Francis et al., 2014; Jang et al. 2011).

Interestingly, a study conducted at a Christian university found that attendance to a Christian school was associated with greater rejection of substance use (Francis et al. 2014). Thus, it can be assumed that religion is an important protective factor against substance and substance abuse. It is no shock that spirituality has a negative association on substance use. That is, as an individual's spirituality increases, the use of substances decreases. Although, one study on participants in a long-term substance abuse treatment program found not statistically significant correlation between spirituality and substance use (Webster 2015).

The limitation with this study is that a lack of correlation does not necessarily mean there is no relationship. In fact, the relationship could be non-linear among the level of spirituality and substance use (Pearce 2017; Webster 2015).

3.3. Self-Esteem

The concepts of self-esteem and self-efficacy are promotive and protective factors for specific outcomes among college students associated with substance abuse. Self-esteem refers to a general level of self-confidence and perception of adequacy (Bartsch, King, Vidourek, Merianos, 2017). Nevertheless, self-efficacy is the belief that they can accomplish something (Gist, Schwoener & Rosen, 1989). Relevant research on self-esteem and substance usage in college students is understudied. It is believed that low self-esteem may be associated with greater substance use. One study with a sample of 1,775 participants found that self-esteem and their perceived control of a substance were highly correlated with substance use (Wills, 1994). After multiple concurrent analyses, it was found that self-derogation was positively related to substance use (Bartsch et al., 2017; Gist et al., 1989).

Nevertheless, more recent findings suggest a link between self-esteem and substance/substance usage. One study conducted a mediation model with nonmedical prescription substances on self-esteem and coping among 1,052 undergraduate students found that high self-esteem is a protective factor for using nonmedical prescription substances (Tam, Benotsch & Li, 2020). Past experiences and child maltreatment can also influence self-esteem. For instance, Oshri, Carlson, Kwon, Ziechner, and Wickrama (2017) investigated child neglect with young adults' substance use and abuse. They discovered that compromised development self-esteem was linked to child neglect, substance use, and abuse (Oshri et al., 2017; Tam et al., 2020).

Furthermore, another study indicated that low self-esteem was linked to reasons for using alcohol (Backer-Fulghum Patock-Peckham, King, Roufa & Hagen, 2012). In turn, high self-esteem is linked to reasons for fewer drinking occurrences and fewer alcohol-related problems (Backer-Fulgham et al., 2012). A comparative study on the responses of 271 students from independent Christian schools found that attendance at these schools was linked to high self-esteem and greater rejection of substance usage (Francis et al., 2014). Another study examining Hispanic American cultural orientations and ethnic identities found that self-esteem was the most consistent predictor of the likelihood and extent of substance usage (Zamboanga, Schwartz, Jarvis & Van Tyne, 2009). It was also the most important protective factor against substance use (Backer-Fulghum et al., 2012; Bartsch et al., 2017).

3.4. The Influence of Others

Peers are a vital influence in all kinds of behaviors among adolescents, precisely substance use activities. Peer relationships are consistently linked to alcohol use in college students (AAC, 2022). Consequently, drug use among peers may be due to the desire to fit in and be accepted in a community, especially since college is an opportunity to make new friends and experience new things (Stone, Vande, Stoap & McCauley, 2016). Research indicates that the type of peer relationships one has in college can influence the use of alcohol in three ways: "the lack or breakdown of quality peer relationships, alcohol use being an integral part of peer interactions, and if peers disapprove of alcohol use or do not drink" (Borsari and Carey 2006: 361). The risk factor of drug-using peers has a causal effect on drug use in youth (Jang & Johnson, 2011). In a Taylor (2006) survey, the participants completed assessments on substance use issues and life events among their friends. Alcohol and drug use problems in peers were found to be significantly associated with their drug use problems (AAC, 2022; Taylor, 2006).

Additional research has found that parent use or sibling use of drugs also increases the risk of drug use in individuals (Hoeve, Dubas, Eichelsheim, Van Der Laan, Smeenk, & Gerris, 2009). Another study conducting a longitudinal assessment on friends' substance use and the influence of parents found that the most consistent predictor of substance use was their friend's substance use behavior (Branstetter, Low & Furman, 2010). The study of Brook, Ruben stone, Zhang and Saar (2011) discovered that peer delinquency was a direct pathway to the participant's use of illicit drugs. Illicit drug use that began in late adolescence and continued into early adulthood was even linked to violent behavior in adulthood (Brook et al., 2011). Furthermore, Brown et al. (2020) suggests that a family history of drinking and illicit substance use represents a high risk and association with alcohol use during the transition from high school into undergraduate studies (Branstetter et al., 2010; Hoeve et al., 2009).

Studies have shown that the perception of a friend or family's approval plays a central role in shaping college students' substance and drug use behavior. A longitudinal study focused on a sample of college students (N=433) who had students report their perceptions of friends' approval of their alcohol use and alcohol use behavior (Graupensperger et al., 2020). They found that there was a significant association in the way one perceived their friends' approval with 1) the number of drinks in a week, 2) their dangerous drinking behaviors, and 3) their BAC levels (Graupensperger et al., 2020). They also discovered that when their reports of alcohol consumption were highest, they viewed their friends as more approving of their behavior (Brown et al., 2020; Graupensperger et al., 2020).

Further, there have also been research studies on specific drug usage. For example, Norman (2015) utilized data from a national sample of adolescents. It was determined that participants whose peers and parents condoned drug usage were more likely to use ecstasy (Norman, 2015). In addition, having a larger percentage of friends who use alcohol and cannabis is associated with a higher likelihood of using both substances simultaneously (Meisel, Williams, & Lee, 2021). One comorbidity study discovered that adolescents who reported a greater degree of comorbidity, tobacco, marijuana, and binge drinking, were more likely to engage in substance use more frequently (Jang & Johnson, 2011; White et al., 2015).

3.5. Co-Occurring Disorders

According to Luo and Levin (2017), drug use is correlated to co-morbid disorders caused by self-medication, which occurs when individuals want to lessen the symptoms of their physical or mental health disorders. Plus, many individuals report using substances to relieve negative feelings. Walters (2020) found that the most common reason for using drugs was to avoid a negative effect, such as anxiety or boredom. Indeed, it is likely that individuals with mental health disorders may abuse substances to help with their symptoms and the emotional problems associated with their illness (DeCarvalho & Garner, 2019). These can include financial problems, social isolation, lack of opportunities, trauma, and family conflict (Wade, Hides, Baker & Lubman, 2009). Nevertheless, the high rate of drug use suggests there may be a common underlying biological or environmental factor that has increased susceptibility (DeCarvalho & Garner, 2019; Lubman et al., 2010).

The use of alcohol and drugs is predominant among individuals that have been diagnosed with schizophrenia (Wade et al., 2009). Epidemiological studies suggest that 40-60% of individuals diagnosed with schizophrenia abuse illicit drugs or alcohol (Walters, 2020). College students diagnosed with psychiatric disorders are also at a greater risk for drug use (Lubman et al., 2010). College students with an eating disorder, such as bulimia or anorexia, are also more likely to use drugs to aid in their desired weight loss (Luo & Levin, 2017). Those that struggle with post-traumatic stress disorder or trauma, in general, are another risk factor for drug use and abuse, specifically in college students. Adolescents with co-occurring problems were also more likely to have used tobacco, marijuana, alcohol, and other drugs or substances than individuals without symptoms (Luo & Levin, 2017; Stone et al., 2016).

4.0. Prevention and Intervention

Illegal substance uses and abuse places college students at risk for adverse social, behavioral, and health consequences. Colleges and universities are critical for prevention and early intervention, as it is an entryway to adulthood, where many initiate substances use and abuse (Johnston et al., 2014). Prevention and intervention treatment are vital for university students. More attention must be placed on preventative measures to increase academic success, good health, and safety (Arria et al., 2017). A fascinating quasi-experimental field study by Fournier, Hall, Ricke and Storey (2013) assessed drinking among college students. They wanted to assess whether an incentive could change the intoxication level among college students attending fraternity parties. For one party, they told the students they would receive a cash incentive if they had a blood alcohol concentration (BAC) of .05 or below. After monitoring and recording the levels, they discovered that students were significantly less intoxicated at the parties that provided cash prizes than those used as a baseline (Fournier et al., 2013; Graupensperger et al., 2021).

Another group-randomized trial of 702 participants conducted a similar study with fraternity parties (Glindemann, Ehrhart, Drake & Gelle, 2007). They measured BAC levels at multiple parties, but students were entered into a \$100 lottery during their intervention party if their levels were below 0.05. The BAC levels were significantly lower at the intervention party where the prize was given. Both these studies' findings reveal the efficacy of differential reinforcement in controlling student intoxication at fraternity parties on or off campus (Glindemann et al., 2007; Maggs et al., 2011).

One of the most effective treatments or intervention practices is cognitive behavioral therapy (CBT). Individual-level intervention with CBT skills is very effective. Some therapies focus on alcohol-related skills, but others also incorporate life skills (McHugh, Hearon & Otto, 2010). Cognitive behavioral skills-based treatment is also excellent for co-occurring disorders that sometimes are present with substance use. CBT is effective because it helps individuals identify their negative, automatic thoughts. These thoughts are usually based on impulse and surface from misconceptions about the self. Therefore, some people use drugs or substances to self-medicate these thoughts, which can be painful or upsetting (Brown et al., 2020; McHugh et al., 2010).

4.1. The assessment and intervention strategies most often utilized

It is recommended that universal and ongoing screening be conducted to assess psychiatric health and substance use problems for adolescents and adults to identify the incidence and severity of a person's substance use and the need for substance use disorder treatment. Social workers can use dialogue, medical tests, observation, and screening instruments to validate suspected substance use disorder. Some screening instruments available include AUDIT, BSTAD, Alcohol Screening and Brief Intervention for Adolescents and Youth (A Practitioner's Guide), AUDIT-C, and Helping Patients Who Drink Too Much a Clinician's Guide (National Institute on Substance Abuse, 2015).

4.1.1. Psychotherapy is often delivered by social workers, as they are trained to perform different types of therapy (APA, 2017). Talk therapy or psychotherapy aims to help a person identify traveling thoughts, emotions, or behavior through various intervention techniques. Social workers can deliver individual psychotherapy to help the person find the root of the addiction and educate the individual on navigating life without alcohol or substances. The Affordable care act provided that social workers can be empowered with interventions in evidence-based substance abuse care (Lundgren & Krul, 2014). The inpatient residential treatment in social work care takes the form of a house, apartment, or dormitory environment. Inpatient treatment is preferred for providing individualized education, care, family therapy, and employment opportunities, which empower a client to discover ways of coping with circumstances that could have induced SUD problems. In an inpatient setting, social workers help clients alter their behaviors in a very pre-planned format (McCarty, Braude, Lyman, Dougherty, Daniels, Ghose & Delphin-Rittmon, 2014). One of the aims of inpatient treatment is to optimize a client's compliance with substance abuse interventions (APA, 2017; McCarty et al., 2014).

4.1.2. Alcohol Screening and Brief Intervention for Adolescents and Youth (A Practitioner's Guide) helps identify youth at risk of alcohol-related problems, particularly those between 9 and 18 years (Carswell, Mitchell, Gryczynski & Lertch, 2020). The tool is preventive by helping identify alcohol-related problems in youth before they begin. The two-question instrument can be incorporated into Brewery visit screening and interviews across the curve spectrum from urgent care to annual exams. The tool interviews on friends drinking and personal drinking questions identify predictors of current risk (AAC, 2022; Carswell et al., 2020).

4.1.3. Brief Screener for Tobacco Alcohol and other Substances (BSTAD) is used to identify risks for substance use disorder among adolescent individuals, particularly ages 12 to 17. The tool is meant to be used under the supervision of a medical provider and is not meant for self-assessment. The tool can be administered by a clinician or the patient in the presence of a medical supervisor (AAC, 2022; McCarty et al., 2014).

4.1.4. AUDIT is an effective and simple tool for screening and healthy use of alcohol, defined as hazardous or risky consumption or any alcohol use disorder (Habtamu & Madoro, 2022). It is the most used alcohol screening tool worldwide and is currently accessible in 40 languages. Audit facilitates interventions by helping individuals with unhealthy alcohol use to seize or reduce alcohol consumption and, as a result, avoid the harmful repercussions of alcohol use. Furthermore, the instrument can help identify specific consequences of alcohol drinking and alcohol dependence. Although the instrument is specifically designed for healthcare professionals, it has provisions for self-administration or use by non-health professionals (Habtamu & Madoro, 2022; Meisel et al., 2021).

4.1.5. AUDIT-C is the screening tool that helps identify individuals with hazardous drinking or with AUD, including dependence and abuse. A score of 4 and 3 is regarded as positive in men and women, respectively (AAC, 2022). The greater the AUDIT-C index, the greater the likelihood that a client's drinking affects their well-being and safety. The tool asks questions like how many drinks one had on a typical day in the past year, the client's drinking, and how often an individual drank an alcoholic drink in the past year. Screening is an ongoing element of the interactive and dynamic protocol of social work practice with, and on behalf of, diverse persons, households, groups, and communities. Routine screening is necessary because most heavy drinking goes undetected, at-risk alcohol problems and drinking are common, patients are likely to be more open, receptive, and ready to change than expected, and that brief intervention can promote substantial changes and lasting reductions in alcohol drinking levels in at-risk individuals (AAC, 2022; Bartsch et al., 2017).

4.1.6. Motivational interviewing. The intervention strategy is client-centered and addresses an individual's ambivalence to change (SAMHSA, 2021). Through a conversational approach, a counselor helps an individual discover their desire to change their substance use behavior. After expressing their Desire to change any existing ambivalence, The Counselor begins working with a client to change the behavior and work towards commitment to change. Motivational interviewing aims to identify and resolve ambivalence. The intervention effectively lowers substance use among patients presenting before clinicians with other health-related conditions. Motivational interviewing is a component of brief interventions (SAMHSA, 2019; Walters, 2020).

The major goals of substance use disorder treatment or improve health and social function, reduce the dominant symptoms of the disorder, motivate, and teach the client to follow up on their progress, and address threats of relapse. If brief interventions do not elicit any positive change or if the problem meets a substance use disorder criteria, the patient is encouraged to enroll in specialized therapy which is usually called Screening, Brief Intervention, and Referral to treatment (SAMHSA, 2019). This intervention requires that a clinician assesses a client, succeeded by a therapy plan developed with the input of the client. The kind of treatment chosen varies depending on the severity of SUD, the substance used, client preferences, and comorbidities. Generally, interventions involve psychotherapy and pharmacotherapy with the FDA-approved pharmacologic options for opiate use disorders (naltrexone, methadone, and buprenorphine) and alcohol use disorders. Currently, no pharmacotherapeutic interventions exist for amphetamine, marijuana, and cocaine use disorders (Lundgren & Krul, 2014; SAMHSA, 2021).

4.1.7. Psychotherapeutic interventions include Cognitive Behavioral Therapy and motivational enhancement therapy (SAMHSA, 2021). The former is used to encourage clients to resolve any uncertainties regarding stopping substance use while the latter is used to help patients recognize and appreciate the impact of the substance dealing behaviors on their interpersonal relationships and how the patients can change their behaviors to control the effects. CBT also helped clients consciously alter dysfunctional thinking and use self-monitoring to prevent relapse (McHugh et al., 2010; SAMHSA, 2019).

References

- American Addiction Centers (AAC) (2022). *How to Stage an Alcohol or Substance Abuse Intervention*, <https://americanaddictioncenters.org/intervention/guide>
- American Psychological Association (2021). *Johnson Intervention*, <https://www.apa.org/pi/about/publications/caregivers/practice-settings/intervention/johnson-intervention>
- Arria, A.M., Caldeira, K.M., Allen, H.K., Bugbee, B.A., Vincent, K.B., O'Grady, K.E. (2017). Prevalence and incidence of drug use among college students: an 8-year longitudinal analysis. *The American Journal of Drug and Alcohol Abuse*, 43(6), p. 711-718 10.1080/00952990.2017.1310219
- Arnett J, Lene JA. (2011). Emerging adulthood(s): The cultural psychology of a new life stage, Bridging cultural and developmental approaches to psychology: New synthesis in theory, research, and policy. Oxford, University Press, 255, 275
- Arnett J. (2005). The developmental context of substance abuse in emerging adulthood. *Journal of Drug Issues* 35: 235- 254, 10.1177/002204260503500202
- Backer-Fulghum LM, Patock-Peckham JA, King KM, Roufa L, Hagen L, (2012). The stress- response dampening hypothesis: How self-esteem and stress act as mechanisms between negative parental bonds and alcohol-related problems in emerging adulthood, *Addictive Behaviors* 37: 477-484. 10.1016/j.addbeh.2011.12.012
- Bartsch, L.A. King, K.A., Vidourek, R.A., Merianos, A.L. (2017). Self-Esteem and Alcohol Use Among Youths. *Journal of Child & Adolescent Substance Abuse*, 26(5): 414-424. <https://doi.org/10.1080/1067828X.2017.1322018>
- Borsari, B., Carey, K.B. (2006). How the quality of peer relationships influences college alcohol use. *Drug Alcohol Rev.* 25(4): 361-370 doi: 10.1080/09595230600741339
- Branstetter, S.A., Low, S., & Furman W. (2010). The influence of parents and friends on adolescent substance use: a multidimensional approach. *Journal of Substance Use*, 16(2), <https://doi.org/10.3109/14659891.2010.519421>
- Brook, D.W., Brook, J.S., Rubenstone, E., Zhang, C., & Saar, N.S. (2011). Developmental associations between externalizing behaviors, peer delinquency, drug use, perceived neighborhood crime, and violent behavior in urban communities. *Aggressive Behavior*, 37(4) p. 349-361 <https://doi.org/10.1002/ab.20397>
- Brown, A. L., España, R.A., Benca-Bachman, C.E., Welsh, J.W., Palmer, R. HC. (2020). Adolescent Behavioral Characteristics Mediate Familiar Effects on Alcohol Use and Problems in College-Bound Students. *Substance Abuse: Research and Treatment*, 1-10 10.1177/1178221820970925
- Carswell, S. B., Mitchell, S. G., Gryczynski, J., & Lertch, E. (2020). Computerizing NIAAA's Best Practices for Youth Screening and Brief Intervention: A Proof-of-Concept Pilot Study of an Automated Alcohol Screening and Intervention Resource Tool. *Journal of Substance Education*, 49(1-2), 3-14. <https://doi.org/10.1177/0047237919894960>

- Centers for Disease Control and Prevention. (2021). *Understanding the Epidemic*. Centers for Disease Control and Prevention. <https://www.cdc.gov/drugoveruse/epidemic/>
- De Carvalho, J. & Garner, D. (2019). Understanding Dual Diagnosis: Substance Abuse and Mental Illness. *American International Journal of Humanity and Social Science*, Vol. 8 No. 4.
- Dorji, T. Srichan, P., Apidechkul, T., Sunern, R. Suttana, W. (2020). Factors associated with different forms of alcohol use behaviors among college students in Bhutan: a cross-sectional study. *Substance Abuse Treatment, Prevention & Policy*, 15(1): 1-8 10.1186/s13011-020-00315-0
- Druckman, J., Gilli, M., Klar, S., & Robison, J. (2015). Measuring Drug and Alcohol Use Among College Student-Athletes*. *Social Science Quarterly*, 96 (2), 369–380. <https://doi.org/10.1111/ssqu.12135>
- Dutra-Thomé, L., DeSousa, D., Koller, S.H. (2019). Promotive and Risk Factors for Positive Youth Development among Emerging Adults in Brazil. *Child & Youth Care Forum*, 48(2): 171-185. <http://dx.doi.org/10.1007/s10566-018-9475-9>
- Farrington, D. P., & Ttofi, M. M. (2012). *Protective and promotive factors in the development of offending*. In T. Bliesener, A. Beelmann, & M. Stemmler (Eds.), *Antisocial behavior and crime: Contributions of developmental and evaluation research to prevention and intervention* (p. 71–88). Hogrefe Publishing.
- Fournier, A. K., Hall, E., Ricke, P., & Storey, B. (2013). Alcohol and the social network: Online social networking sites and college students' perceived drinking norms. *Psychology of Popular Media Culture*, 2 (2), 86 – 95. doi: 10.1037/a0032097
- Francis, L.J., ap Siôn, T., Village, A. (2014). Measuring the Contribution of Independent Christian Secondary Schools to Students' Religious, Personal, and Social Values. *Journal of Research on Christian Education*, 23(1): 29-55 <http://dx.doi.org/10.1080/10656219.2014.882723>
- Ford, J.A. (2007) Substance use among college athletes: A comparison based on sport/team affiliation. *Journal of American College Health*, 55: 67-373
- Gist, M. E., Schwoerer, C., & Rosen, B. (1989). Effects of alternative training methods on self-efficacy and performance in computer software training. *Journal of Applied Psychology*, 74, 884-891.
- Glindemann, K.E. Ehrhart, I.J. Drake, E.A., Geller, E.S. (2007). Reducing excessive alcohol consumption at university fraternity parties: a cost-effectiveness incentive/reward intervention. *Addictive Behavior*, 32(1):39-48 10.1016/j.addbeh.2006.03.019
- Graupensperger, S. Jaffe, A.E., Fleming, C.N.B., Kilmer, J.R., Lee, C.L., Larimer, M.E. (2021), Changes in College Student Alcohol Use During the COVID-19 Pandemic: Are Perceived Drinking Norms Still Relevant? *Emerging Adulthood*, 1-10 <https://doi.org/10.1177/2167696820986742>
- Habtam, E., & Madoro, D. (2022). *Psychometric properties of Alcohol Use Disorder Identification Test screening tool among medical outpatients in Dilla University Referral Hospital, southern Ethiopia*, 2020. SAGE Open Medicine. <https://doi.org/10.1177/20503121221077568>
- Hoeve, M., Dubas, J.S., Eichelsheim, V.I., Van Der Laan, P.H., Smeenk, W., & Gerris, J.R.M. (2009). The Relationship Between Parenting and Delinquency: A Meta-Analysis. *Journal of Abnormal Child Psychology*, 37(6): 749-775. 10.1007/s10802-009-9310-8
- Humensky, J.L. (2010). Are adolescents with high socioeconomic status more likely to engage in alcohol and illicit drug use in early adulthood? *Substance Abuse Treatment, Prevention, and Policy*, 5(19) <https://doi.org/10.1186/1747-597X-5-19>
- Jang, S.J. & Johnson, B.R. (2011). The effects of childhood exposure to drug users and religion on drug use in adolescence and young adulthood. *Youth & Society*, 43(4), p. 1220-1245 <http://dx.doi.org/10.1177/0044118X10393483>
- Johnston, L.D., O'Malley P.M., Bachman, J.G., Schulenberg J.E (2014). Monitoring the future national survey results on drug use: Volume II, college students and adult ages 19-50 Institute for Social Research, The University of Michigan, Ann Arbor (2012)
- Kroshus, E., Davoren, A.K. (2016). Mental health and substance use of sexual minority college athletes. *Journal of American College Health*, 64(5): 317-379 10.1080/07448481.2016.1158179
- Kunnen, S. (2016). *World Drug Report 2016*. Unodc.org. <https://www.unodc.org/wdr2016/>
- Lubman, D.I., King, J.A., Castle, D.J. (2010). Treating comorbid substance use disorders in schizophrenia. *International Review of Psychiatry*, 22(2): 191-201 10.3109/09540261003689958
- Lundgren, L. & Krul, I. (2014). The Affordable Care Act: New Opportunities for Social Work to Take Leadership in Behavioral Health and Addiction Treatment. *Journal of The Society for Social Work and Research*, 5(4), 415-438. DOI:10.1086/679302
- Luo, S. X., & Levin, F. R. (2017). Towards precision addiction treatment: New findings in co-morbid substance use and attention-deficit hyperactivity disorders. *Current Psychiatry Reports*, 19(3), 14. doi:10.1007/s11920-017-0769-7
- Madison, N.J. *Drug Positivity in U.S. Workforce Rises to Nearly Highest Level in a Decade, Quest Diagnostics Analysis Finds*. Quest Diagnostics Newsroom. (2016). <https://newsroom.questdiagnostics.com/2016-09-15-Drug-Positivity-in-U-S-Workforce->

- McCarty, D., Braude, L., Lyman, D. R., Dougherty, R. H., Daniels, A. S., Ghose, S. S., & 75 Delphin-Rittmon, M. E. (2014). *Substance Abuse Intensive Outpatient Programs: Assessing the Evidence*. *Psychiatric Services* (Washington, D.C.), 65(6), 718–726. Retrieved from DOI.10.1176/201300249
- Maggs, J. L., Williams, L. R., & Lee, C. M. (2011). Ups and downs of alcohol use among first-year college students: Numbers of drinks, heavy drinking, and stumble and pass out drinking days. *Addictive Behaviors*, 36 (3), 197 – 202. doi: 10.1016/j.addbeh.2010.10.005
- McHugh, R.K., Hearon, B.A., Otto, M.W. (2010). Cognitive-Behavioral Therapy for Substance Use Disorders. *Psychiatry Clin North Am.* 33(3): 511-525 10.1016/j.psc.2010.04.012
- Meisel, M.K., Treloar Padovno, H., Beth Miller, M., Clark, M.A., Barnett, N.P. (2021). Associations between social network characteristics and alcohol use alone or in combination with cannabis use in first-year college students. *Psychology of Addictive Behaviors*, <http://dx.doi.org/10.1037/adb0000704>
- National Institute on Substance Abuse, (2015). *Facing Addiction in America: The Surgeon General's Report on Alcohol, Substances, and Health* [Internet]. Substance Abuse and Mental Health Services Administration (US); Office of the Surgeon General (US). Washington (DC): <https://www.ncbi.nlm.nih.gov/books/NBK424859/table/ch4.t1/?report=objectonly>
- Norman, L.B. (2015). An Adolescent ecstasy use: A test of social bonds and social learning theory. *Deviant Behavior*, 36(7), p. 527-538 <http://dx.doi.org/10.1080/01639625.2014.944072>
- Oshri, A. Carlson, M. Kwon, J., Ziechner, A. Wickrama, K. (2017). Developmental Growth Trajectories of Self-Esteem in Adolescence: Associations with Child Neglect and Drug Use and Abuse in Young Adulthood. *Journal of Youth & Adolescence*, 46(1): 151-164 10.1007/s10964-016-0483-5
- Patrick, M.E., Wightman, P., Schoeni, R.F., Schulenger, J.E. (2012). Socioeconomic Status and Substance Use Among Young Adults: A Comparison Across Constructs and Drugs. *J Stud Alcohol Drugs*, 73(5): 772-782 10.15288/jsad.2012.73.772
- Pearce, L.D., Hayward, G.M., Pearlman, J.A. (2017). Measuring Five Dimensions of Religiosity across Adolescence. *Rev Relig Res.* 59(3): 367-393 10.1007/s13644-017-0291-8
- Pew Research Center (2019). *Perceptions of Drug Abuse, Views of Drug Policies*. Pew Research Center - U.S. Politics & Policy. <https://www.pewresearch.org/politics/2014/04/02/section-1-perceptions-of-drug-abuse-views-of-drug-policies/>.
- Reed, E., Prado, G., Matsumoto, A. Amaro, H. (2010). Alcohol and drug use and related consequences among gay, lesbian, and bisexual college students: Role of experiencing violence, feeling safe on campus, and perceived stress. *Addictive Behaviors*, 35(2): 168- 171 10.1016/j.addbeh.2009.09.005
- Shadick, R., Dagirmanjian, F., Trub, L., & Dawson, H. (2016). Sexual orientation and first-year college students' nonmedical use of prescription drugs. *Journal of American College Health*, 64 (4), 292–299. <https://doi.org/10.1080/07448481.2015.1117469>
- Snipes, D. J., & Benotsch, E.G. (2012). High risk cocktails and high-risk sex: Examining the relation between alcohol mixed with energy drink consumption, sexual behavior, and drug use in college students. *Addictive Behaviors*, 38(1), p. 1418-1423
- Stone, A.L. Vander Stoap, A., McCauley, E. (2016). Early Onset Substance Use in Adolescents with Depressive, Conduct, and Comorbid Symptoms. *Journal of Early Adolescence*, 36(6): 729-753 [http://dx.doi.org.msu.idm.oclc.org/10.1177/0272431615586463](http://dx.doi.org/msu.idm.oclc.org/10.1177/0272431615586463)
- Substance Abuse and Mental Health Services Administration (SAMHSA) (2021). *Treating Concurrent Substance Use Among Adults*. SAMHSA Publication No. PEP21-06-02-002. Rockville, MD: National Mental Health and Substance Use Policy Laboratory. Substance Abuse and Mental Health Services Administration
- Substance Abuse and Mental Health Services Administration (2013). Results from the National Survey on Drug Use and Health: Summary of National Findings, NSDUH Series H-48, HHS Publication No. (SMA) 14-4863. 2014. Available at, <http://www.samhsa.gov/data/sites/default/files/NSDUHresultsPDFWHTML2013/Web/N>
- Substance Abuse and Mental Health Services Administration (2019). *Key Substance Use and Mental Health Indicators in the United States: Results from the 2018 National Survey on Substance Use and Health*. <https://www.samhsa.gov/data/sites/default/files/cbhsq-reports/NSDUHNationalFindingsReport2018/NSDUHNationalFindingsReport2018.pdf>
- Tam, C. C., Benotsch, E. G., & Li, X. (2020). Self-Esteem and Non-Medical Use of Prescription Drugs among College Students: Coping as a Mediator. *Substance Use & Misuse*, 55(8), 1309–1319. <https://doi.org/10.1080/10826084.2020.1735441>
- Taylor, J. (2006). Life events and peer substance use and their relation to substance use problems in college students. *Journal of Drug Education*, 36(2): 179-191 102190/1MNH-ARUD- R57K-7710
- Unity Behavioral Health. (2020, December 24). *Why Is American Drug Use On The Rise and What Can Be Done?* <https://unityrehab.com/blog/american-drug-use-trend-on-the-rise/>

- Wade D, Hides L, Baker A, Lubman DI (2009). Substance misuse in first-episode psychosis. The recognition and management of early psychosis: A preventive approach, HJ Jackson, PD McGorry. Cambridge University Press, Cambridge; 243–256
- Walters, G.D. (2020). Prosocial peers at risk, protective, and promotive factors for the prevention of delinquency and drug use. *Journal of Youth & Adolescence*, 49(3) p. 618-630 <https://doi.org/10.1007/s10964-019-01058-3>
- Webster, D. (2015). The effects of spirituality on drug use. *Journal of Human Behavior in the Social Environment*, 25(4), p. 322-332 <http://dx.doi.org/10.1080/10911359.2014.969126>
- Wills, T.A. (1994) Self-esteem and perceived control in adolescent substance use: comparative tests in concurrent and prospective analyses. *Psychology of Addictive Behaviors*, 8(4), p. 223-234, <http://dx.doi.org.msui.org/10.1037/0893-164X.8.4.223>
- Yusko, D. Buckman, J., White, H., Pandina, R. (2008). Alcohol, tobacco, illicit drugs, and performance enhancers: a comparison of use by college student athletes and nonathletes. *Journal of American College Health*, 57(3): 281-289. 10.3200/JACH.57.281-290
- Zamboanga, B.L., Schwartz, S.J., Jarvis, L.H., Van Tyne, K. (2009). Acculturation and Substance use among Hispanic Early Adolescents: Investigating the Mediating Roles of Acculturative Stress and Self-Esteem. *Journal of Primary Prevention*, 30(3): 315-333 <http://dx.doi.org/10.1007/s10935-009-0182-z>
- Zimmerman, Stoddard, Eisman, Caldwell, Aiyer, & Miller (2014). Adolescent Resilience: Promotive Factors That Inform Prevention. *Child Dev. Perspect.* 7(4) doi: 10.1111/cdep.12042