LITERATURE REVIEW

The review consisted of all well known research on related to college students alcohol drinking and related problems around the world. The review encompassed academic papers, conference presentations, book chapters, and research reports obtained from a systematic search of available databases, including National Institute for Alcohol Abuse and Alcoholism (NIAAA), American Psychological Association (APA), Research Gate, Academic Search Premier, ERIC, Google Scholar, JSTOR, and Science Direct. Indian Alcohol Policy Alliance (IAPA) is a Non Governmental Organization, established and registered under the Indian Trust Act in 2004, PubMed Health

How Alcohol Affects Us

Almost all of us have heard that alcohol is a drug, but many of us don’t think of the act of drinking alcohol as putting a drug into our bodies. It is important for people to understand that alcohol abuse impairs their judgment and their peripheral and central nervous system.

After prolonged exposure to alcohol, the brain becomes dependent on it. The severity of this disease is influenced by factors such as genetics, psychology, culture, and response to physical pain. (http://healthguide.howstuffwork.com/)

Alcohol also affects different people in different ways. Some of the characteristics that determine the way alcohol affects you include:

- Gender
- Mood
- Body Weight
- Type of Alcohol
- Full/Empty Stomach
- Speed of Consumption
Blood Alcohol Content or Blood Alcohol Concentration (BAC) or Blood Alcohol Level (BAL)

Blood alcohol content is a terminology used to denote the concentration of alcohol in blood and provides a common, standard platform to measure and compare the levels of intoxication. It can be denoted as a percentage by mass per volume or by mass or a combination of both. For example, Blood alcohol content (BAC) of 0.10% means 1 gram of alcohol per 1000 grams of blood. Or in other way, it also means 0.1 gram of alcohol per 100 milliliters of blood. In some countries, it is also measured as grams of alcohol per 1 liter of blood (g/1000 ml). As there is a great variation in individual physiology and tolerance level to effects of alcohol from person to person, the number of drinks consumed is not an appropriate measure of intoxication. The amount of intoxication varies greatly with body weight, fat percentage of body and gender.

Effects of Alcohol at Different Levels of BAC

When ingested, the intoxication levels gradually increase with an increase in blood alcohol content.

1. Euphoria: This is the initial stage of intoxication, characterized by BAC level at 0.03 to 0.12%. In this phase, person is much more relaxed, over confident and appears without any inhibitions.

2. Lethargy: In this phase, BAC ranges from 0.09 to 0.23%. The person starts losing body balance, his vision gets blurred and appears sleepy.

3. Confusion: BAC gets increased at 0.17 to 0.28%. Name of this phase rightly denotes the status of the subject as he appears intense in his emotions and feelings. Dizziness and Nausea are peculiar features of this stage.

4. Stupor: This stage is marked by the BAC count ranging from 0.25 to 0.39%, where persons impaired start losing and again gaining consciousness at frequent intervals. Due to this feature,
there is high amount of risk of coma.

5. **Coma**: BAC ranges from 0.35 to 0.50%. Patient becomes unconscious, body reflexes become poor, there is drop in pulmonary beats with decrease in breathing.

6. **Death**: BAC exceeds the mark of 0.50%. This is a very fatal stage marked by Central Nervous System failure, which ultimately leads to death. (Pakhare Jayashree, 2010)

Numerous studies have shown that misuse of alcohol by college students in the US is a pervasive problem. Most of what is known about consumption levels is based on self-report survey data, which assumes that students are aware of and can accurately calculate how much alcohol they consume. A study in the September issue of Alcoholism: Clinical & Experimental Research compares students' actual blood alcohol concentrations (BACs) against their self-reported consumption and estimated BACs. The results indicate that students might actually overestimate rather than underestimate their levels of drinking. (Kraus L. et al, 2005)

**Moderate Drinking**

Although the benefits and risks associated with moderate drinking have gained increasing attention in recent years from both researchers and the general public, no universal definition of moderate drinking exists. Most currently used definitions are based on a certain number of drinks consumed in a specific time period. Defining a “drink,” however, also is difficult because alcoholic beverages can differ substantially in their alcohol content, even within the same beverage category (e.g., beer, wine, or distilled spirits). Because international differences in drink definitions also exist, comparing studies from different countries is difficult. The development of a universal definition of moderate drinking is hampered further by variations in the way alcohol consumption levels and drinking patterns are being assessed (i.e., the survey methods and assessment modes used). Despite these problems, definitions of moderate drinking
and drinking guidelines have been developed in the United States and other countries. (Dufour C. 1999)

According to U. S. Department of Health and Human Services and SAMHSA’s (Substance Abuse & Mental Health Services Administration) National Clearinghouse for Alcohol and Drug Information, seventy six million American adults have been exposed to alcoholism in the family.

Alcoholism is responsible for more family problems than any other single cause. According to (Silverstein 1990), one of every four families has problems with alcohol. (Parsons Tetyana 2003)

**Alcohol and Adolescent Brain Development**

Adolescence is a time of transition, physically, socially, and emotionally. The adolescent brain is in transition as well. Research also suggests that adolescents are less sensitive than adults to some of alcohol's effects. The findings suggest that adolescents might be able to stay awake and mobile at higher blood alcohol levels than adults with an equivalent history of alcohol exposure while, at the same time, experiencing greater alcohol-induced cognitive impairments and, possibly, more injury to the brain following high alcohol exposure levels. (White et al 2001)

**Alcohol Disorders among College Students**

Research results from U.S National institute of health in 2002 shows that one in three meet diagnosis for alcohol problem and six percent of college students meet criteria for a diagnosis of alcohol dependence (also referred to as alcoholism), and 31 percent meet the clinical criteria for alcohol abuse. Also found that more than two of every five students report at least one symptom of these conditions, putting them at increased risk of developing a true alcohol disorder.

**Reports from NIAAA (National Institute on Alcohol Abuse and Alcoholism) Task Force on College Drinking Time frame: 1998 – 2002**

- Death: 1,400 Alcohol-Related Unintentional
- Injury Deaths Injury: 500,000 unintentional injuries
- Assault: 600,000 assaults
- Sexual Abuse: 70,000 victims of sexual assault
- Unsafe sex: 400,000 had unprotected sex;
- Drunk Driving: 2.1 Million Drove Under the Influence
• Academic problems: 25% report negative academic consequence

In addition to these acute consequences of drinking, evidence suggests that alcohol consumption can lead to longer term cognitive impairment (Saltz RF. 2004)

The college environment itself (specifically, such factors as peer influence and alcohol availability) may contribute to college students’ risk of alcohol-related harm. O’Malley and Johnston (2002) found that although college-bound high school students drink less than their peers, their alcohol consumption surpasses that of their non college peers during the college years, only to decrease again after they finish college. In light of these observations, drinking among college students deserves special attention. (Larimer et al, 2002)

The NIAAA Task Force on College Drinking commissioned several review papers on various aspects of drinking among college students (e.g., drinking patterns and consequences of alcohol consumption). With respect to prevention research, however, the Task Force found that studies evaluating prevention approaches focused mostly on interventions aimed at individual student drinkers rather than on interventions aimed at entire college populations (i.e., universal interventions). (Larimer and Cronce 2002) concluded that the most promising interventions incorporate several components, such as training in drinking skills and life skills, self-monitoring, and challenges to students’ expectancies. Brief interventions which include alcohol information, skills training, and personalized, nonjudgmental feedback to enhance motivation to change can be effective in both individual and group formats. (Wechsler, H et al, 2000)

**College Students Encounter Problems When Others Drink Too Much**

60.5% had study or sleep interrupted
53.6% had to take care of a drunken student
29.3% had been insulted or humiliated
20.1% experienced an unwanted sexual advance (women)
18.6% had a serious argument or quarrel
13.6% had property damaged
9.5% had been pushed, hit, or assaulted
1.3% had been a victim of sexual assault or date rape (women)(Wechsler et al 2008)

The Task Force's findings regarding the efficacy of individual-level interventions have been reviewed and summarized by (Larimer and Cronce 2002), who distinguish between educational
or awareness programs, cognitive-behavioral interventions, and motivational enhancement
techniques. With one or two exceptions, this review found little evidence to support the
effectiveness of purely educational or awareness programs. Newer approaches combining
 provision of information with other components, such as motivational enhancement, await
evaluation and may be found to be more successful (Saltz. RF. 2004)

A randomized controlled trial involving Japanese junior college students aimed at
investigating the effects of a single session of alcohol health education concerning the effects of
alcohol, alcohol-related health problems, and drinking behavior. Findings based on this study
was alcohol-related education can be considered an effective way to increase awareness of
alcohol-related health problems, but less effective for changing drinking the behavior of
Japanese junior college students (Masayo Geshi et al, 2007)

**What Colleges Are Doing to Address Alcohol and Other Drug Problems**
In college alcohol study by Harvard school of public Health study from 1990 to 2000 came in
Journal of American College Health pages 48 to 208 explains a detailed work out for colleges
and universities to implement policies and programs to curb alcohol and other drug use and its
associated negative consequences.(Wechsler H. et al, 2000)

*In India we also need to work out strategies like this for our students.*
Magnitude of and Trends in Alcohol-Related Mortality and Morbidity among U.S. College
Students Ages 18-24, 1998-2005 by Ralph and others aimed to estimate, among college students
ages 18-24, the numbers of alcohol-related unintentional injury deaths and other problems over
the period from 1998 through 2005. The analysis integrated data on 18- to 24-year-olds and
college students from each of the following data sources: the National Highway Traffic Safety
Administration Fatality Analysis Reporting System, Centers for Disease Control and Prevention
Injury Mortality Data, National Coroner Studies, census and college enrollment data, the
National Household Survey on Drug Use and Health, and the College Alcohol Study. The results
of the study showed among college students ages 18-24, alcohol-related unintentional injury
deaths increased 3% per 100,000 from 1,440 in 1998 to 1,825 in 2005. (Ralph et al 2009)

Identification, Prevention and Treatment: A Review of Individual-Focused Strategies to Reduce
Problematic Alcohol Consumption by College Students The purpose of this article is to review
and assess the existing body of literature on individually focused prevention and treatment approaches for college student drinking. (Larimer et al 2002)

A sample of college student completed a measure of alcohol-related and alcohol-free activity participation and enjoyment. The goals of the study were to examine the influence of drinking quantity and contextual variables on activity enjoyment and to identify enjoyable alcohol-free activities that take place on evenings when students might otherwise be drinking. (Murph et al, 2006), Harvard School of Public Health conducted a College Alcohol Study a self-administered survey on environmental correlates of underage alcohol use and related problems of college students, this study examined drinking levels and ensuing problems among college students and factors associated with binge drinking (Wechsler H et al, 2000)

A very important and obvious factor coming clear in (Ganaraja B, et al 2007) study is that tasting/testing alcohol before had a great influence on the alcohol intake and attitude to drinking in first year medical students. Hence first exposure and the knowledge of limits must be a factor which the educators and parents must keep in mind. Even though limited alcohol consumption could have many positive effects on the health, it is necessary for the society to keep it under the limits in the growing age. (Ganaraja B, et al 2007)

Another study explores comprehensive personality factors that are associated with the co-occurrence of binge eating and binge drinking among a diverse sample of 208 college undergraduates also given insight into the present study (Rush C Christina et al 2009),

Encouraging but limited research indicates that brief motivational interventions may be an effective way to reduce heavy episodic drinking in college students. Two kinds of programs to test – (a) brief motivational interview (BMI; n = 34) or (b) an alcohol education session (AE; n = 30). The findings demonstrate that mandated BMIs can reduce alcohol problems in students referred for alcohol violations. (Borsari, Brian et al 2005)

Efficacy of counselor vs. computer-delivered intervention with mandated college students, the purpose of this study was to evaluate the efficacy of two brief interventions and the inclusion of a 1-month booster session with college students who were referred to attend alcohol education following an alcohol-related incident. Results showed that promoting specific behaviors in the
context of in-person brief interventions may be a promising approach to reducing drinking volume among identified at-risk students. (Barnett P Nancy et al 2007)

A study done by Carey and Correia about drinking motives predict alcohol-related problems in college students. This study evaluated the relationship between drinking motives and alcohol-related problems, after first accounting for high-risk alcohol consumption and gender. Subjects were 139 male and female (61%) college undergraduates. The result of the study using hierarchical regression techniques, they found that the combination of maximum daily quantity and negative reinforcement reasons for drinking accounted for 61% of the variance on a measure of lifetime alcohol-related problems. (Carey K B, C J Correia. 1997)

Another study examines the associations between coping responses, drinking motivations, expectations of meeting social and academic goals, and family of origin problem drinking and measures of college students' quantity/frequency of alcohol use and social complications of alcohol use were investigated in a sample of 218 college students' (Karwacki S B, Bradley J R 1996)

The purpose of paper this to explore a culturally appropriate design for educating international students about alcohol because implementing alcohol education programs for a general college student population often overlooks the specific needs of international students. This paper highlighted the need to tailor alcohol education programs to international students .( Esch & Ubbes,2009)

The psychometric properties of the Modified Drinking Motives Questionnaire--Revised (Modified DMQ-R) [Blackwell, E., & Conrod, P. J. (2003). based on a five-factor model of drinking motives with separate coping-anxiety and coping-depression factors, were evaluated in undergraduates. (Grant Valerie et al 2007)

Coping-anxiety and coping-depression motives predict different daily mood-drinking relationships by Valerie and others findings showed that individuals with different drinking motives show distinctive patterns of alcohol use and problems. Drinking to cope, or endorsing strong coping motives for alcohol use, has been shown to be particularly hazardous. It is
important to determine the unique triggers associated with coping drinking. One limitation of past research has been the failure to contend with the complexities inherent in coping motives. (Grant Valerie et al 2009)

The literature on drinking motives suggests that individuals drink for three distinct reasons: coping motives (CM: to reduce and/or avoid negative emotional states); social motives (SM: to affiliate with others); and enhancement motives (EM: to facilitate positive emotions). Main effects of gender, with men scoring significantly higher on the DMQ-EM subscale and tending to score higher on the DMQ-SM subscale when compared to women; and also showed an effect of age group on the DMQ-EM subscale, with younger students scoring significantly higher than older students; . (Stewart S H et al, 1996)

Development and Validation of the Drinking Motive Questionnaire Revised Short Form (DMQ-R SF) by Emmanuel Kuntsche, Sandra Kuntsche is a short form of the Drinking Motive Questionnaire Revised (DMQ-R; Cooper, 1994) was developed; using different item selection strategies based on a national representative sample of 5,617 12- to 18-year-old students in Switzerland. To confirm the concurrent validity of the short-form questionnaire, or DMQ-R SF, data from a second national sample of 2,398 12- to 17-year-old students were analyzed by means of structural equation modeling. The results confirmed the four-dimensional factor structure of the DMQ-R SF both in general and among subpopulations.( Kuntsche Emmanuel et al, 2009)

DeJong William (2008), explains in his book to develop effective programs and policies to reduce alcohol- and other drug-related (AOD) problems on campus. This book gives a straightforward method for gathering and reporting student survey data on substance use–related problems.( DeJong William 2008),

Mustafa N. Kirmani and L.N.Suman from National Institute of Mental Health and Neurosciences, Bangalore aimed at examining attitude towards alcohol and drinking, alcohol-related expectancies among undergraduate students. The sample consisted of 433 students (231 boys and 202 girls). The tools used in the study were Socio-demographic Data Sheet, Attitude Towards Alcohol and Drinking Scale (ATADS), Alcohol-Related
Expectancy Questionnaire-Adolescent Version (AEQ-A) and the General Health Questionnaire-12 (GHQ-12). Results revealed that boys had higher psychological distress along with a more favorable attitude towards alcohol than girls. Further, boys expected that alcohol use could lead to positive outcomes while girls expected that alcohol use could lead to negative outcomes. The findings have implications for prevention of alcohol abuse among college going students. (Kirmani N Mustafa and Suman 2010)

Smoking, Drinking, and Drug Use in Young Adulthood - A book written by Wadsworth (N. Katherine 1997) is focused on how the new freedoms and new responsibilities in young adulthood affect drug use and also focuses on the influences of adult social roles on alcohol use, drug use, and other problem behaviors. The author attempted to highlight the central studies that inform this field of inquiry, and to incorporate disparate theoretical perspectives on these issues. (Wadsworth N. Katherine (1997)

In terms of overall environmental campus change, correcting misperceptions of use, increasing perceptions of policy enforcement, increasing awareness of prevention programming resources, and involving students in campus prevention efforts may help reduce alcohol and other drug use and the resulting negative consequences” In essence, alcohol free options, such as Late Night, afford multiple opportunities for socializing in lower-risk settings, thereby creating a safe and enjoyable environment in which to live and learn. (Maney W Dolores et al 2002)

Risk-takers a book is primarily concerned with the youthful use and misuse of alcohol, tobacco and illicit drugs and with the sexual behaviour of young people. And a brief introduction to the many possible reasons why people sometimes use and misuse psychoactive (mind-altering) drugs. (Plant Moira 1992)

Peter Finn’s book is a guide to prevent alcohol related problems in campuses. It gives guidelines for setting up substance free residence halls or flors and guidelines for maintaining them. (Peter Finn 1997)