

THE ASSOCIATION BETWEEN SELF-ESTEEM AND ALCOHOL-RELATED TOPICS AMONG UNIVERSITY STUDENTS: A SYSTEMATIC REVIEW

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ARTICLE INFO	ABSTRACT
<p>Article Type: Systematic Compilation</p> <p>Keywords: Alcohol, Rosenberg, Self-Esteem, University Students</p> <p>Corresponding Author(s) Ghaith Al-Badran</p> <p>Adress: Ankara Yıldırım Beyazıt University, Psychology</p> <p>E-mail: psy.g.albadran@ gmail.com</p>	<p><i>Alcohol-related problems among university students are becoming a severe problem. There are many reasons behind their motive for consuming alcohol. This study aims to examine the relationship between alcohol-related topics and self-esteem which is considered an essential predictor of consumption. A systematic review was conducted and eight databases were scanned according to the PRISMA Guideline. As a result, 41 studies examining the relationship between alcohol-related topics and self-esteem among university students were analyzed. It was found that the number of studies is increasing and the most preferred scale to measure self-esteem was The Rosenberg Self-Esteem Scale. The majority of the studies provided evidence for the claim that alcohol-related-topics and self-esteem are associated. There were also studies that emphasized gender differences. The limitations of the included studies were examined in detail and it is recommended that more studies be conducted for generalizability. Also, it is recommended that conducting meta-analyses and studies in qualitative or longitudinal design may provide in-depth information about the association between alcohol-related topics and self-esteem among university students.</i></p>

INTRODUCTION

World Health Organization (WHO) identifies alcohol as a psychoactive substance that causes dependency and has been widely worldwide for centuries (WHO, 2018). In accordance with the 2019 National Survey on Drug Use and Health, 85.6% of adults over the age of 18 said they had consumed alcohol at some point in their lives, 69.5% said they had consumed in the past year, and 54.9% said they had consumed in the past month. The survey revealed that 25.8% of adults (18 and older) reported binge drinking in the past month, while 6.3% said they had used alcohol heavily in the past month (NIAAA, 2022a).

Despite many alcohol awareness campaigns around the world, it keeps spreading among adults, youth, and even teenagers too (Chaput et al., 2012; Davoren et al., 2016; Ferreira & Weems, 2008; White & Hingson, 2013). Therefore the following questions should be asked and investigated: the pre-season or causes behind alcohol consumption, the good and the ugly side of alcohol, and finally is there any relationship between alcohol consumption and self-esteem. This study will explain briefly both the causes and the aspects of alcohol consumption, then it will dive into further details about the relationship between self-esteem and alcohol consumption, especially among university students.

1. ALCOHOL CONSUMPTION AMONG YOUTH

According to the CDC, binge drinking is defined as “consuming five or more alcoholic drinks on the same occasion for males and four or more alcoholic drinks on the same occasion for females on at least one day in the past thirty days. While heavy drinking is defined as consuming fifteen or more alcoholic drinks per week for males and eight or more alcoholic drinks per week for females” (CDC, 2019).

According to the National Institute on Alcohol Abuse and Alcoholism, in 2019 alone over seven million young adults under the age of twenty have reported alcohol consumption (NIAAA, 2022b). Even though adults tend to drink more than youth, yet when young adults drink they tend to binge drink it. In 2019, 4.2 young adults under the age of 20 had reported binge drinking at least once in the past month (NIAAA, 2022b). The alcohol consumption rate in the United States in 2020, by age group, has increased from 0.1% for 12-13 years, to 1.1% for pre-university age 16-17 years, to have a significant increase by 11.1% for the ages of 21-25 years which can be considered the university period. These figures will drop to 7.8% and continue with such a rate throughout the adulthood period with a small variation rate (Statista, 2020).

Despite the wide range of alcohol consumption awareness campaigns, warning labels on alcohol containers, and the common knowledge about the danger of alcohol consumption the question that should be asked is why the rate is still so high among youth? the answer to this question contains many aspects, it ranges from; easy accessibility, new challenges, trends, peer pressure, stress, increased independence or craving to be independent, and lastly popularity (NIAAA, 2022b).

2. THE REASONS OF ALCOHOL CONSUMPTION

There are many reasons for alcohol consumption that apply to the general population. According to The Open University (2019), there are many reasons why people choose to drink alcohol including:

- Good flavor,
- Desire to drink,
- It makes them feel better,
- Overcome their inhibition,
- Overcome pain,
- It helps them sleep,
- Drinking provides warmth, and
- Self-Esteem (Bartsch et al., 2017; Zeigler-Hill, Dahlen & Madson, 2017).

There are some other reasons for alcohol consumption that apply for college students. The alcohol consumption can be increased by certain characteristics of college life, such as the widespread availability of alcohol, the inconsistent enforcement of laws against underage drinking, and the lack of interactions with parents and other adults (NIAAA, 2022c).

3. ALCOHOL-RELATED NEGATIVE CONSEQUENCES

According to WHO, in 2018 there was over three million deaths every year result from harmful use of alcohol and this figure was before there was a significant increase in alcohol consumption due to pandemic where it increased by 54% compared to 2019 and that is in the U.S. alone which is a staggering figure for such a short period (The NielsenIQ, 2020). According to CDC (2021), excessive alcohol use will lead to chronic health effects such as: high blood pressure, heart disease, and stroke, liver disease, cancer and immediate health effects such as: injuries, violence, and poisonings, sexually transmitted infections, unintended pregnancy, and poor pregnancy outcomes.

The risks do not stop at physiological impact only, it goes beyond that to cause a mental impact too (CDC, 2021). Alcohol can cause social problems, including family problems, job-related problems, unemployment, depression and anxiety (Booth & Feng, 2002; Castaneda et al., 1996; Hammer, Parent & Spiker, 2018; Smith et al., 2021).

Due to student expectations and social pressures at the beginning of the academic year, the first six weeks of a freshman year are particularly susceptible to heavy drinking and alcohol-related consequences. Around 696,000 students are assaulted by another student who has been drinking, and around 1519 college students between the ages of 18 and 24 die from alcohol-related unintentional injuries per year, including motor vehicle accidents. Researches showed that one in five college women experience sexual assault during their time in college, despite the fact that calculating the incidence of alcohol-related sexual assaults is difficult because sexual assault is often underreported. About one in four college students claim that drinking has caused them to miss class or fall behind on their assignments. Other negative effects include attempted suicide, health issues, injuries, unsafe sexual activity, drunk driving, vandalism, property destruction, and engagement with the police (NIAAA, 2022c).

4. THE CONCEPT OF SELF-ESTEEM

Self-esteem can be defined as “the individual’s evaluation of his/her own worth, which includes beliefs about oneself i.e. I am unloved, I am worthy. It also includes emotional states, such as pride, and shame” (Snyder & Lopez, 2001). Self-esteem can be considered an important factor that may play a significant role in protecting and determining a person’s future behavior (Donnellan et al., 2005; Sanford & Donovan, 1984; Trzesniewski et al., 2006).

Individuals with high or healthy self-esteem will have a balanced evaluation of how they view themselves, i.e., the person has a good opinion of his/her abilities yet can also recognize his/her flaws. High self-esteem person can also have high self-worth and a sense of self-respect and self-love. Self-esteem can also be associated with an overall sense of well-being (Kavas, 2009; Rosenberg, 2015). On the other hand, a person with unhealthy or low self-esteem will suffer from self-dissatisfaction and self-rejection. Due to this negative perspective about the self, people who suffer from low self-esteem may tend to take risky behaviors leading them to suffer from negative developmental outcomes (Leary, Schreindorfer & Haupt, 1995). Scanning the literature provides us with evidence that there is a relationship between low self-esteem and health-risk behaviors such as smoking (Abernathy, Massad, & Romano-Dwyer, 1995; Glendinning & Inglis, 1999), alcohol consumption (Bartsch, et al., 2017), and other drugs (Alavi, 2011).

Self-esteem can be affected by many factors including thoughts and perceptions of the self, experiences at home, school and work, illness, disability or injury, status in society and media messages (Mayo Clinic, 2020). Alcohol is another factor that affects self-esteem, which is the main focus of the present study. Self-esteem might impact students even stronger, due to they are already under pressure from school or university demands, endless homework, teachers’ attitudes towards them, and of course peer pressure to keep up with trends, body image, popularity, and so on. All of these factors will force students to seek ways of reducing this pressure including consuming alcohol (Barker et al., 2018; Gao et al., 2021; Huang et al., 2018). Alcohol consumption is a serious issue that is spreading among students. Several studies have indicated that students who tend to consume alcohol also suffer from low self-esteem, while students who refrain from consuming it tend to have higher self-esteem (DeSimone, Murray, & Lester, 1994; Luhtanen & Crocker 2005). However, there are other studies that might contradict this by indicating that there is no conclusive evidence that links self-esteem to alcohol consumption (Baumeister et al., 2003; Steffenhagen & Steffenhagen, 1985).

5. TYPES OF SELF-ESTEEM

Self-esteem has taken on great importance in psychology studies. It is clear that the majority of this research discusses global self-esteem. However, many authors have emphasized the significance of other aspects of self-esteem such as contingent, explicit, implicit, collective, decisional, morally-based, academic, work role and relationship contingent.

Global self-esteem is defined as knowing the self, and it also comes with different terms such as self-worth and self-knowledge. Global self-esteem can be divided into two main components; high self-esteem and low self-esteem. High self-esteem is having a high evaluation of the self, while low self-esteem refers to unfavorable evaluations of the self (Barker & Bornstein, 2010; Baumeister et al., 2003).

Contingent self-esteem is the type of self-esteem that is shaped by many components such as; the approval of others or social comparisons. Throughout their lifetime each individual will face different events. This may shape the individual's self-esteem if the individual bases their self-worth on these outcomes (Knee et al., 2008).

Explicit self-esteem is defined as "conscious feelings of individuals' self-including; self-liking, self-worth, and acceptance (Harvard Health Publishing, 2007; Kernis, 2003; Rosenberg, 2015), while implicit self-esteem is typically believed to consist of nonconscious, automatic, and overlearned self-evaluations such as how the individual associate words that have favorable or unfavorable connotations with the self" (Harvard Health Publishing, 2007; Greenwald et al., 2002).

Collective self-esteem is "a concept originated by Dr. Jennifer Crocker. Crocker defined collective self-esteem as the relationship between a person's self-esteem and their attitude towards or about the group that the person is part of" (Crocker & Luhtanen, 1990).

According to Aquino & Reed (2002), *moral self-esteem* also known as the moral self-image can be defined as "the person's malleable moral self-concept that is, their self-concept related to the traits of the archetypical moral person such as; caring, hard-working, friendly, generous, and honest, etc."

Decisional self-esteem is "the relationship between decision-making and individual self-esteem. Individuals with low self-esteem tend to feel less sure of their abilities which will affect their decision-making abilities, while individuals with overly high self-esteem may overestimate their abilities which might also affect their decision-making" (Arsandaux et al., 2020; Commendador, 2007).

Relationship contingent self-esteem (RCSE) is a type another types of self-esteem. RCSE depends mostly on the process and nature of the individual's romantic relationship (Knee et al., 2008).

6. METHOD

The systematic review method was used to collect, analyze and interpret the data. In the systematic review; the studies published on the relevant subject are scanned in detail, the studies are included in the examination in line with inclusion criteria, and the findings obtained are synthesized qualitatively and quantitatively (Torgerson, 2003). This systematic review study was conducted in accordance with the PRISMA protocol (Attachment 1). PRISMA is a guide that provides transparency and accountability between papers in the presentation of results, specifying standards for reporting the results of systematic reviews (Moher et al., 2009). In the present study, eight databases were scanned in June 2022; different combinations of the determined keywords were searched in the titles and abstracts of the studies (Table 1).

Table 1. The Search Strategy

Databases	EBSCO, JSTOR, MEDLINE/PubMed, SAGE, ScienceDirect, Scopus, Web of Science, Wiley
Keywords	Alcohol, Self-esteem, Student
Inclusion/Exclusion	<ul style="list-style-type: none">• Published in a peer-reviewed journal• English language• Having studied the self-esteem and alcohol consumption among university students• Research article• Availability of full text

EndNote 20, which is a database application used to store, manage and find bibliographic information, was used to extract the studies from the databases. Later, the titles and abstracts of the studies were examined one by one and the studies were chosen according to the inclusion criteria. 41 studies that comply with the relevant criteria were determined as a result of the screening and those studies were included in the scope of the review.

Ensuring validity and reliability in qualitative researches can be explained with the concepts of credibility and confirmability. While credibility provides internal validity, confirmability provides external reliability (Guba & Lincoln, 1989). In this study, the research method, data, findings and results were explained in a way that researchers could benefit from, all the studies accessed were analyzed in an unbiased and impartial manner with their sources. According to Bronson & Davis (2012), in order to reduce the likelihood of individual bias in the process of examining studies, two or more coders need to evaluate the rigor of design and implementation in an independent but standardized manner by examining the extent to which the studies meet the inclusion and exclusion criteria. In this study, the studies included in the scope of the study were coded into a database independently created by two researchers on the Microsoft Office Excel program according to the pre-determined categories. Differences in coding have been agreed upon by consensus.

7. FINDINGS

Studies included in the systematic review as a result of inclusion and exclusion criteria were examined in detail based on two aspects: Characteristics of the studies and qualitative synthesis. In this section of the study, the findings will be analyzed in detail based on these two aspects.

7.1. Characteristics of the Studies

A total of 41 studies were analyzed by the year of publication and it was found that the publication years ranged from 1976 until 2022. It was found that 20% of the studies were published in the 1900s, increasing to 24% by the 2000s and reaching 39% in the 2010s. As can be seen in Figure 1, the number of studies is increasing throughout the time but decreasing in the 2020s due to the fact that the data was collected in mid-2022.

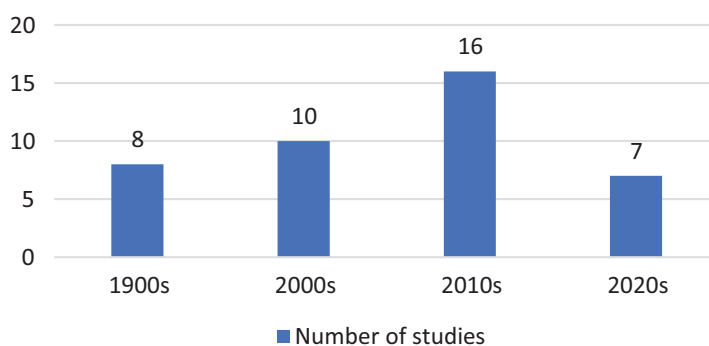


Figure 1. Distribution of studies by year

Studies were conducted in the universities from 11 different countries, including United States of America (65.85%), Canada (7.32%), France (4.88%), South Africa (4.88%) and others such as Australia, Germany and the United Kingdom as can be seen in the Table 2.

Table 2. Descriptive Findings of Studies

Variable		Frequency (n)	Percentage (%)
Country	United States of America	27	65.85
	Canada	3	7.32
	France	2	4.88
	South Africa	2	4.88
	Australia	1	2.44
	Botswana	1	2.44
	Germany	1	2.44
	Greece	1	2.44
	New Zealand	1	2.44
	South Korea	1	2.44
	United Kingdom	1	2.44
Study Design	Quantitative	40	97.56
	Qualitative	1	2.44
Universe Grade	Freshmen	5	12.20
	Frist to third grade	1	2.44
	Senior	1	2.44
	All	34	82.93
Universe Gender	Only Female	3	7.32
	All	38	92.68
Self-Esteem Type*	Global (Self-esteem)	35	76.09
	Contingent	3	6.52
	Explicit	2	4.35
	Implicit	2	4.35
	Collective	1	2.17
	Decisional	1	2.17
	Morally-based	1	2.17
	Relationship Contingent	1	2.17
Alcohol-related Topics*	Consumption	29	46.77
	Drinking motives	7	11.29
	Problem drinking	7	11.29
	Heavy drinking	4	6.45
	Alcohol-related problems	3	4.84
	Expectancy	2	3.23
	Negative Consequences	2	3.23
	Addiction	1	1.61
	Alcohol risk behaviors	1	1.61
	Alcohol use disorder	1	1.61
	Attitudes towards alcohol	1	1.61
	Contemplation	1	1.61
	Dependence	1	1.61
	Protective drinking behavior	1	1.61
	Risky drinking	1	1.61

Variable		Frequency (n)	Percentage (%)
Objective	Primary	26	63.41
	Secondary	15	36.59
Dependent Variable*	Behavioral	13	23.21
	Psychological	11	19.64
	Parental	3	5.36
	Addiction	2	3.57
	Attachment	2	3.57
	Cognitive	2	3.57
	Personality	2	3.57
	Other	5	8.93
	N/A	16	28.57

*Multiple coding available

The majority of the studies were in quantitative design (97.56%) and only one study was in qualitative design. The universe of the studies was examined in detail for grade and gender. It was found that the majority of the studies have included students from all grades (82.93%) and both genders (92.68%). Among these studies, five were conducted only on freshmen and three were including only female students (Table 2). The universe sizes of the 41 studies varied between 100 and 7809 with an average of 930. On the other hand, the sample sizes of the studies varied between 44 and 5082 with an average of 481. It was also found that 19 studies lacked information on the universe size (Table 3).

Table 3. *The Universe and Sample Size*

	Universe Size*	Sample Size
Minimum	100	44
Maximum	7809	5082
Average	930	481

*19 studies lack information on universe size

As mentioned in the literature, there are different types of self-esteem. Therefore in the present study, the type of self-esteem examined in each study was analyzed. There were eight different self-esteem types included in the studies such as global self-esteem, contingent self-esteem, explicit and implicit self-esteem and global self-esteem was the most studied by 76.09% (Table 2).

As the present study includes studies examining the relationship between self-esteem and alcohol among university students, different approaches to alcohol were found. While the majority of the studies examined the relationship between self-esteem and alcohol consumption (46.77%), others focused on different approaches such as the motives of drinking (11.29%), problem drinking (11.29%), heavy drinking (6.45%). Addiction, attitudes towards alcohol, dependence and risky drinking were also among the different approaches (Table 2).

Assessment of the association between self-esteem and alcohol was the primary objective in 63.41% of the studies. The remaining 36.59% of the studies investigated the association between self-esteem and alcohol as a secondary objective. In studies examining the relationship between self-esteem and alcohol as a secondary objective, dependent variables used were varied from behavioral (23.21%), psychological (19.64%) and parental (5.36%), etc. Behavioral variables included topics such as impulsivity, binge eating, casual sexual behavior, controlled orientation and perfectionism. Psychological variables included topics such as stress, anxiety, depression, mental well-being and narcissism. At last, parental variables included topics such as earlier parent-child relationships, parental bonding and parental neglectfulness. It was also found that 16 studies lacked clear information on the dependent variable (Table 2).

There are various scales developed by authors for measuring self-esteem and alcohol-related topics. In order to determine the most used scales studies were examined and found that the most used self-esteem scale by far was The Rosenberg Self-Esteem Scale (58.70%) (Table 4).

Table 4. *Self-Esteem Scales Used in the Studies*

Self-Esteem Scales	Frequency (n)	Percentage (%)
The Rosenberg Self-Esteem Scale	27	58.70
The Contingent Self-Esteem Scale (CSE)	3	6.52
The Coopersmith Self-Esteem Inventory (CSEI)	3	6.52
Roberts's Self-Esteem Inventory	2	4.35
The Name-Letter Test	2	4.35
Culture-Free Self-Esteem Inventory	1	2.17
Interpersonal Disposition Inventory	1	2.17
Melbourne Decision Making Questionnaire	1	2.17
Relationship-Contingent Self-Esteem Scale	1	2.17
The Collective Self-Esteem Scale	1	2.17
The Contingencies of Self-Worth Scale	1	2.17
The Index of Self-Esteem (ISE)	1	2.17
Survey prepared by authors	1	2.17
N/A	1	2.17

For alcohol-related topics, survey made by authors (19.67%) were the most used scale followed by AUDIT (13.11%) and Daily Drinking Questionnaire (DDQ) (9.84%) (Table 5). It was also found that for "alcohol consumption" topic, survey prepared by authors (n=9), DDQ (n=6) and AUDIT (n=2) were used the most. For alcohol consumption, survey prepared by authors (n=9), DDQ (n=6) and AUDIT (n=2) were preferred the most.

Table 5. *Alcohol Scales Used in the Studies*

Alcohol Scales	Frequency (n)	Percentage (%)
Survey prepared by authors	12	19.67
AUDIT	8	13.11
Daily Drinking Questionnaire (DDQ)	6	9.84
Drinking Motives Questionnaire – Revised (DMQ-R)	4	6.56
Rutgers Alcohol Problem Index (RAPI)	3	4.92
AUDIT-C	2	3.28
Drinking Motive Questionnaire Revised Short Form (DMQ-R SF)	2	3.28
Alcohol Consumption Inventory (ACI)	1	1.64
Alcohol Expectancy Scale	1	1.64
Alcohol Use Questionnaire	1	1.64
Breath sample	1	1.64
Brief Young Adult Alcohol Consequences Questionnaire	1	1.64
CAGE	1	1.64
College Student Life Space Scale (CSLSS)	1	1.64
CORE Alcohol and Drug Survey	1	1.64
Diagnostic Interview Schedule Version III-A (DIS-III-A)	1	1.64
Hypertension Self-Care Activity Level Effects Scale (H-SCALE)	1	1.64
Measurement of Attitudes Towards Alcohol (SMATA)	1	1.64
Michigan Alcoholism Screening Test (MAST)	1	1.64
National Institute on Alcohol Abuse and Alcoholism	1	1.64
Protective Behavioral Strategies Scale (PBSS-Adapted by Ray)	1	1.64
Reasons for Drinking Alcohol Questionnaire	1	1.64

Alcohol Scales	Frequency (n)	Percentage (%)
Rozin and Stoess's Addiction Scale	1	1.64
Rutgers Collegiate Substance Abuse Screening Test (RCSAST)	1	1.64
The Alcohol Expectancy Questionnaire-Adolescent (AEQ-A)	1	1.64
The Brief Young Adult Alcohol Consequences Questionnaire	1	1.64
The College Alcohol Problems Scale – Revised (CAPS-r)	1	1.64
The Frequency-Quantity Questionnaire	1	1.64
The Ontario Lifestyles Survey (OLS)	1	1.64
WHO Model Core Questionnaire	1	1.64
N/A	1	1.64

The detailed information about the studies such as year of publication, author, name of the self-esteem and alcohol scales used, dependent variables (if available), the type of self-esteem and alcohol-related topics and the main findings are given in detail in Table 5. Each study was numbered sequentially and citations in the qualitative synthesis section were made according to their numbers written in Table 6.

Table 6. Summary of the Studies

No	Author	Self Esteem Scale	Alcohol Scale	Dependent Variable(s)	Self-Esteem Type	Alcohol-Related Topic(s)	Main Finding
1	Schaeffer et al. (1976)	The Coopersmith Self-esteem Inventory (CSEI)	Survey prepared by authors	N/A	Self-esteem	Consumption	"Heavy use of alcohol was related with low self-esteem."
2	Lapp, J.E. (1984)	Interpersonal Disposition Inventory	Survey prepared by authors	N/A	Self-esteem	Consumption	"High self-esteem is associated with higher alcohol consumption."
3	Richman & Flaherty (1990)	The Rosenberg Self-Esteem Scale	Michigan Alcoholism Screening Test (MAST)	Interpersonal dependency, Earlier parent-child relationships, Social support	Self-esteem	Problem drinking	"There is no association between alcohol and self-esteem."
4	Corbin et al. (1996)	The Rosenberg Self-Esteem Scale	Daily Drinking Questionnaire (DDQ)	N/A	Self-esteem	Consumption	"Self-esteem between drinking groups were not significant for males. For females, self-esteem decreased as drinking increased."
5	Valliant & Scanlan (1996)	The Coopersmith Self-esteem Inventory (CSEI)	The Ontario Lifestyles Survey (OLS)	Living arrangement	Self-esteem	Consumption	"A positive correlation was found between the excessive alcohol behavior and self-esteem in males. There was a positive correlation between total weekly consumption of alcohol and self-esteem in females."
6	Walitzer & Sher (1996)	The Rosenberg Self-Esteem Scale	Diagnostic Interview Schedule Version III-A (DIS-III-A)	N/A	Self-esteem	Alcohol Use Disorder	"Low self-esteem plays an important role in alcohol problems in women. There was minimal evidence to suggest that alcohol use predicts later self-esteem."
7	Glindemann et al. (1999)	Roberts's Self-Esteem Inventory	Breath sample	N/A	Self-esteem	Consumption	"Low self-esteem is associated with higher alcohol consumption."
8	Greenberg et al. (1999)	The Rosenberg Self-Esteem Scale	Rozin and Stoess's Addiction Scale	N/A	Self-esteem	Addiction	"There is no association between alcohol and self-esteem."
9	Lewis & O'Neill (2000)	The Rosenberg Self-Esteem Scale	The Alcohol Expectancy Questionnaire-Adolescent (AEQ-A), CAGE, Rutgers Collegiate Substance Abuse Screening Test (RCSAST)	Social functioning	Self-esteem	Problem drinking, Expectancy	"Problem drinking is associated with low self-esteem."
10	Peltzer et al. (2001)	The Rosenberg Self-Esteem Scale	WHO Model Core Questionnaire	Risk taking, Wellbeing, Stress, Anomia	Self-esteem	Consumption	"There is no association between alcohol and self-esteem."
11	Neighbors et al. (2004)	The Contingent Self-Esteem Scale (CSE)	Drinking Motives Questionnaire – Revised (DMQ-R), Alcohol Consumption Inventory (ACI), Rutgers Alcohol Problem Index (RAPPI)	Controlled orientation	Contingent Self-Esteem	Drinking motives, Consumption, Alcohol-related problems	"Those higher in contingent self-esteem reported greater likelihood of drinking as a means of gaining social approval or avoiding social rejection. The relationships between controlled orientation and drinking frequency and drinking problems were partially mediated by contingent self-esteem."

12	Benjamin & Wulfert (2005)	The Index of Self-Esteem (ISE)	CORE Alcohol and Drug Survey, Survey prepared by authors	Binge eating, Impulsivity, Tolerance of deviance, Rejection sensitivity, Personality traits	Self-esteem	Consumption, Heavy drinking	"There is no association between alcohol and self-esteem."
13	Luhtanen & Crocker (2005)	The Rosenberg Self-Esteem Scale	Survey prepared by authors	Narcissism, Contingencies of self-worth	Self-esteem	Consumption	"The level of self-esteem didn't predict alcohol use."
14	Kassel et al. (2007)	The Rosenberg Self-Esteem Scale	Survey prepared by authors	Adult attachment styles, Dysfunctional attitudes	Self-esteem	Consumption	"There is no association between alcohol and self-esteem."
15	Lewis et al. (2007)	The Contingencies of Self-Worth Scale	Drinking Motives Questionnaire – Revised (DMQ-R), Daily Drinking Questionnaire (DDQ)	N/A	Morally based self-esteem	Drinking motives, Consumption	"High morally based self-esteem is associated with lower alcohol consumption."
16	Pritchard et al. (2007)	The Rosenberg Self-Esteem Scale	Survey prepared by authors	Perfectionism, Stress, Optimism, Personality	Self-esteem	Consumption	"There is no association between alcohol and self-esteem."
17	Dehart et al. (2009)	The Rosenberg Self-Esteem Scale, The Name-Letter Test	Survey prepared by authors	Daily interpersonal events	Explicit self-esteem, Implicit self-esteem	Consumption	"Implicit and explicit self-esteem were not associated with average level of drinking."
18	Neumann et al. (2009)	The Rosenberg Self-Esteem Scale	The Frequency-Quantity Questionnaire, The College Alcohol Problems Scale – Revised (CAPS-r)	N/A	Self-esteem	Consumption, Alcohol risk behaviours	"High self-esteem is associated with higher alcohol consumption."
19	Kounenou, K. (2010)	Culture-Free Self-Esteem Inventory	Survey prepared by authors	Entertainment activities	Self-esteem	Consumption, Drinking motives	"There is no association between alcohol and self-esteem."
20	Phillips & Ogell (2011)	Melbourne Decision Making Questionnaire	AUDIT	Gambling	Decisional self-esteem	Problem drinking	"Students at risk of developing a drinking problem tended to have lower decisional self-esteem."
21	Backer-Fulghum et al. (2012)	The Rosenberg Self-Esteem Scale	Reasons for Drinking Alcohol Questionnaire, Survey prepared by authors	Parental bonding, Parental neglectfulness, Stress	Self-esteem	Drinking motives	"High self-esteem is associated with fewer alcohol-related problems."
22	Zeigler-Hill et al. (2012)	The Rosenberg Self-Esteem Scale	Daily Drinking Questionnaire (DDQ), AUDIT, The Brief Young Adult Alcohol Consequences Questionnaire	Protective Behavioral Strategies	Self-esteem	Consumption, Heavy Drinking, Negative Consequences	"Men with low self-esteem continued to report relatively high levels of alcohol consumption. Self-esteem level was not associated with the amount of alcohol consumed but it was negatively associated with harmful drinking patterns and negative consequences."
23	Oluwoye et al. (2013)	The Rosenberg Self-Esteem Scale	AUDIT	Stress, Anxiety	Self-esteem	Problem drinking	"Higher levels of self-esteem were associated with low alcohol consumption."

24	Pedersen et al. (2013)	The Rosenberg Self-Esteem Scale, The Collective Self-Esteem Scale	Daily Drinking Questionnaire (DDQ)	N/A	Consumption	"There is no association between alcohol and self-esteem. Self-esteem was positively related to drinking only for White students."
25	Rivers et al. (2013)	The Rosenberg Self-Esteem Scale	College Student Life Space Scale (CSLSS)	Emotional Intelligence	Risky drinking	"There is no association between alcohol and self-esteem."
26	Tomaka et al. (2013)	The Rosenberg Self-Esteem Scale, The Contingent Self-Esteem Scale (CSE)	Rutgers Alcohol Problem Index (RAPI), AUDIT	Stress	Alcohol-related problems, Consumption	"High self-esteem is associated with fewer alcohol-related problems. Contingent self-esteem is associated with more frequent alcohol-related problems."
27	Zeiger-Hill et al. (2013)	The Rosenberg Self-Esteem Scale, The Contingent Self-Esteem Scale (CSE)	Daily Drinking Questionnaire (DDQ), AUDIT, Brief Young Adult Alcohol Consequences Questionnaire	N/A	Consumption, Heavy Drinking, Negative Consequences	"High contingent self-esteem is associated with more alcohol-related negative consequences. Contingent self-esteem was associated with greater alcohol consumption for men with high levels of self-esteem but it was associated with less alcohol consumption for men with low self-esteem."
28	Roemer & Walsh (2014)	The Rosenberg Self-Esteem Scale	Rutgers Alcohol Problem Index (RAPI)	Living arrangement	Alcohol-related problems, Consumption	"High self-esteem is associated with fewer alcohol-related problems. There is no association between alcohol and self-esteem."
29	DiBello et al. (2015)	Relationship-Contingent Self-Esteem Scale	Daily Drinking Questionnaire (DDQ), Drinking Motives Questionnaire – Revised (DMQ-R)	Romantic jealousy	Consumption, Drinking motives	"RCSE may contribute to drinking problems specifically because of more cognitive rumination."
30	Blank et al. (2016)	The Rosenberg Self-Esteem Scale	AUDIT-C	General self-efficacy, Mental well-being	Problem drinking	"An interaction between sex and heavy drinking frequency for self-esteem was found."
31	Collison et al. (2016)	The Rosenberg Self-Esteem Scale	Measurement of Attitudes Towards Alcohol (SMATA)	N/A	Attitudes towards alcohol	"Self-esteem was negatively associated with attitudes towards alcohol use."
32	Garekise & Plattner (2016)	The Rosenberg Self-Esteem Scale	Survey prepared by authors	N/A	Consumption, Contemplation, Dependence	"An increase in self-esteem will decrease the probability of contemplating drug use to forget about hurtful events."
33	Govender, Indiran et al. (2017)	N/A	N/A	N/A	Drinking motives	"Female students with low self-esteem are twice as likely as those with higher self-esteem to abuse alcohol."
34	Hamilton & DeHart (2017)	The Rosenberg Self-Esteem Scale, The Name-Letter Test	Survey prepared by authors	Belongingness need	Consumption	"Low implicit self-esteem may be a stronger risk factor for college student drinking."
35	Gierski et al. (2020)	The Coopersmith Self-Esteem Inventory (CSEI)	AUDIT, Alcohol Use Questionnaire, Drinking Motive Questionnaire Revised Short Form (DMQ-R SF)	Anxiety, Depression, Impulsivity	Problem drinking, Consumption	"Alcohol use disorder is associated with low self-esteem."

36	Lannoy et al. (2020)	Survey prepared by authors	Drinking Motive Questionnaire Revised Short Form (DMQ-R SF), AUDIT	N/A	Self-esteem	Consumption, Heavy Drinking	"Students with low self-esteem and heavy alcohol consumption were clustered."
37	Longo et al. (2020)	The Rosenberg Self-Esteem Scale	AUDIT-C	Casual sexual behavior	Self-esteem	Problem drinking	"Self-esteem was a significant factor related to engagement in casual sexual behavior in the context of alcohol use."
38	Sharma et al. (2020)	Robert's Self-Esteem Inventory	Protective Behavioral Strategies Scale (PBSS-Adapted by Ray), Survey prepared by authors, Alcohol Expectancy Scale	N/A	Self-esteem	Consumption, Expectancy, Protective drinking behavior	"Males engage in drinking to enhance their self-esteem more than women. Self-esteem is positively associated with protective drinking behavior."
39	Thomas & Warren-Findlow (2020)	The Rosenberg Self-Esteem Scale	Hypertension Self-Care Activity Level Effects (H-SCALE)	Body satisfaction	Self-esteem	Consumption	"There is no association between alcohol and self-esteem."
40	Lee et al. (2022)	The Rosenberg Self-Esteem Scale	AUDIT	Internet Addiction, Smartphone addiction, Stress, Resilience	Self-esteem	Consumption	"There is no association between alcohol and self-esteem."
41	Schick et al. (2022)	The Rosenberg Self-Esteem Scale	Drinking Motives Questionnaire – Revised (DMQ-R), National Institute on Alcohol Abuse and Alcoholism	N/A	Self-esteem	Drinking motives, Consumption	"There is no association between alcohol and self-esteem. Self-esteem is negatively associated with drinking motives."

7.2. Qualitative Synthesis

In this section, a qualitative synthesis of the 41 studies is reported based on their content. Fourteen studies (34%) found that *there is no association between self-esteem and alcohol consumption* (3, 8, 10, 12, 13, 14, 16, 17, 19, 22, 24, 25, 39, 40, 41). Also, there is one study found that participants' implicit and explicit self-esteem were unrelated to their average level of drinking (17).

Eleven studies found that *there is an association between self-esteem and alcohol consumption*. Three out of eleven studies proved that there is a positive correlation between *high self-esteem and alcohol consumption* (2, 5, 18). A study found that "as males engaged in excessive alcohol behavior their self-esteem increased. They also found that as total weekly consumption increased, self-esteem increased for females" (5). Another study proved that higher self-esteem predicts greater peak alcohol consumption (18). The remaining eight studies proved that *low self-esteem is associated with higher alcohol consumption* (1, 7, 15, 20, 23, 34, 35, 36).

There are five studies that found a difference in *gender* between self-esteem and alcohol consumption (22, 27, 30, 33, 38). Two out of five studies found that female students with low self-esteem are more likely to consume alcohol (30, 33). The other two studies found that male students with low self-esteem reported high levels of alcohol consumption (22, 27, 38). Yet one study contradicted these findings by pointing out that males with low self-esteem tend to consume less alcohol (27). There was only one study that examined the difference in *race* between self-esteem and alcohol consumption and it was found that self-esteem was positively associated with drinking only for white students (24).

In addition to the studies examining the relationship between alcohol consumption and self-esteem, it has been determined that there are also studies on the *attitude toward alcohol use, drinking motives, harmful drinking patterns and negative consequences*. A study found that "self-esteem was negatively associated with attitudes towards alcohol use which means individuals with low self-esteem tended to have the least restrictive attitudes towards alcohol use and those with high self-esteem had the most restrictive attitudes towards alcohol use" (31). Another study concluded that self-esteem is negatively associated with drinking motives such as to forget worries, to fit in with a group, to be sociable and to be liked (41). One study conducted in the USA found that self-esteem is negatively associated with harmful drinking patterns and negative consequences (22).

There were four studies on *self-esteem and alcohol-related problems*. Three studies found that high self-esteem is associated with fewer alcohol-related problems such as getting into fights, going to work or school drunk, causing shame or embarrassment to someone, passing out, or fainting suddenly (21, 26). There were three studies examining the difference in *gender between self-esteem and alcohol-related problems*. One study found that female students' self-esteem dropped as their drinking level increased and that females may be more prone to low self-esteem due to heavy alcohol use (4). A prospective study concluded that throughout the research period (from 1st to 4th grade), women who had an alcohol use problem in years three or four had rather low levels of self-esteem. Additionally, the study offers convincing evidence for women's prospective prediction from self-esteem in year one to the diagnosis of alcohol use disorder in year four (6). Another study found that greater drinking frequency in males was predicted by higher self-esteem and the most frequent binge drinkers were men with high self-esteem (18).

There were two studies that examined the association between *contingent self-esteem and alcohol consumption* and one study that examined the association between *contingent self-esteem and alcohol-related problems*. Those studies found that high contingent self-esteem is associated with higher alcohol consumption (11), more negative consequences (27) and more frequent alcohol-related problems (26). One study examined the association between *morally based self-esteem and alcohol consumption* and found that high morally based self-esteem is associated with lower alcohol consumption (15).

There were 25 studies that included dependent variables in their study model of self-esteem and alcohol. One study concluded that an increase in self-esteem will decrease the probability of alcohol consumption to forget about hurtful events (32). One study found that self-esteem is related to engagement in casual sexual behavior in the context of alcohol consumption (37). According to the results of another study, those with higher contingent self-esteem consumed alcohol more frequently in an attempt to gain social approval or to prevent social rejection. Contingent self-esteem served as a partial mediator in the relationships between controlled orientation, drinking frequency, and drinking problems (11).

8. DISCUSSION AND CONCLUSION

This study aimed to review the studies examining the relationship between self-esteem and alcohol-related topics among university students. Among the studies found, certain topics were discovered from full-text readings and those topics were written in italic in the findings section. After reading the full texts of those studies, it is important to point out some of their limitations.

8.1. Limitations

One of the most notable limitations of these studies was *generalizability*. Due to the fact that the majority of these studies were in a cross-sectional design, it was not possible to make causal inferences between self-esteem and alcohol-related topics among university students. In order to be able to generalize the findings, the study designs of future researches should be prospective-longitudinal. Findings of majority of these studies are not applicable to students in similar age group outside the university setting. One might not observe these dynamics outside of a university setting since the university provides an environment where drinking is a common part of socializing. Therefore it is recommended that future studies should include same-age non-university students. Also, to determine if differences last throughout a university education, a longitudinal study is required. Preferably, the sample should include students before attending university, during and after the university education in order to determine if the university had any effect on the relationship between self-esteem and alcohol-related topics. Because this longitudinal study to follow-up students from before, during and after university education would be complex, it would be also beneficial if the authors include in their cross-sectional studies questions regarding alcohol consumption before university education.

Another aspect of the generalizability limitation was the *sample*. Most of the studies were conducted in a single university and mentioned that as a limitation and therefore the findings cannot be generalized for that country. A replication of the study with bigger sample sizes across other university populations would be helpful in better understanding the association between self-esteem and alcohol-related topics. The likelihood that these results can be generalized would increase with replication including more universities.

Another limitation of the studies was *sample characteristics*. It was determined that a very limited study exists on the heterogeneous samples in terms of age, sex, ethnicity and race. Racial, ethnic, and sexual minority groups were mostly neglected in the reviewed studies. Future research should include students from diverse backgrounds.

The other limitation worth noting was *response bias*. Due to the fact that forty out of forty-one studies were in quantitative design and used self-reported questionnaires which may lead to response bias. The answers are given to the questionnaires and therefore the results of these studies may have been influenced by socially desirable response distortions. It is also possible that especially freshmen might not answer the questions regarding alcohol consumption honestly in order to avoid legal ramifications or they believed that reporting less alcohol use would be socially desirable.

Lastly, another limitation found was *scale scorings*. There are some scales that reflect results of the time of test-taking while others reflect relatively more stable scores. For instance, the Rosenberg Self-Esteem Scale which was used the most in the studies may reflect perceived self-esteem at the time of test taking. On the other hand scores from the scales for measuring Emotional Intelligence, parental neglectfulness and parental bonding, etc. may be relatively stable (Brackett & Mayer, 2003). One's self-esteem might differ over time it is important to use alternative methods for measuring self-esteem to help explain the findings.

The present study also has some limitations. As mentioned in the method section, inclusion and exclusion criteria were determined for the search strategy. One of the exclusion criteria was languages other than English, therefore studies published in other languages were excluded from the review. Also, only the studies published in peer-reviewed journals were included thus chapters, conference papers and dissertations were excluded. There were a number of studies meeting the search criteria yet the full text was not accessible. Despite these limitations, the results of the present study may provide insights for university students, university psychologists and management and for future researchers.

8.2. Conclusion

As a result of the present study, *low self-esteem was found to be associated with more alcohol consumption or alcohol-related problems*. By taking the limitations of the studies mentioned above into consideration, it is not practical to conclude one statement about the association between self-esteem and alcohol-related topics.

In conclusion, it is recommended that the managers and psychologists of universities should implement awareness campaigns throughout university education and particularly for freshmen. It is also recommended that educational material which describes the negative consequences of alcohol consumption should be distributed to all students. They should focus on the detection and treatment of students at risk. Lastly, they should also organize activities to enhance students' bonds with peers without facilitating substance use which will improve their self-esteem.

For future researchers, it is recommended that conducting meta-analyses and studies in qualitative or longitudinal design may provide in-depth information about the association between self-esteem and alcohol-related topics among university students.

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ATTACHMENT 1. Study Selection Flow Chart According to PRISMA

