



Assessment of Knowledge of Alcohol Consumption, Influencing Factors, and Frequency of Alcohol Misuses among University Students

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Abstract

Introduction: Alcohol misuse among university students remains a significant public health concern despite the existence of various interventions, policies, and laws aimed at addressing the issue. To better understand the situation, this scoping review aimed to assess the knowledge of alcohol consumption, perceived influencing factors, and prevalence of alcohol misuse among university students. **Method:** Meta-analysis was employed to synthesize data from several separate sources. Key electronic databases, manual searches for relevant materials, and grey literature were used to identify materials for the study. Search terms or phrases were developed from the keywords related to the research. Boolean logic was used to widen the search net. Endnote 20 was used to keep track of references while data were extracted from the various sources. Thematic approaches and socioecological models were used to guide the review process. **Results:** The review revealed good knowledge of alcohol use guidelines among students. The majority of the students were involved in alcohol use, with alcohol misuse significantly high among them. This proves to be influenced by gender, mostly males, living arrangements, peer pressure, and social coherence. **Conclusion:** Good knowledge of alcohol use guidelines was identified among university students. However, the SEM model revealed that alcohol misuse among students arises following the interaction of different influencing factors in an intertwined manner. Hence, alcohol misuse arises due to a multitude of factors in life. **Recommendation:** Relevant authorities, stakeholders, and parents to discourage students against alcohol misuse through enlightenment, policies, and more research.

Subject Areas

Public Health

Keywords

Knowledge, Alcohol Misuse, University Students, Binge Drinking, Socioecological Model

1. Introduction

Alcohol is a legally permitted psychoactive beverage that can be advantageous when consumed in moderation; its beneficial effects include cardiovascular protection and fostering social bonding when intake adheres to suggested limits [1] [2]. Alcohol misuse refers to the consumption of alcoholic drinks in a manner that may result in physical, social, and psychological issues. The problem statement is the recognition that alcohol misuse is a major public health issue worldwide [3] [4]. The mortality and morbidity rates among humans have been linked to the misuse of alcoholic beverages [5]. The effects of alcohol misuse encompass physical injuries, damage to property, unprotected sexual encounters, and a decline in academic performance that could result in dropping out of school, deteriorating mental health, and increased chances of memory loss [6]-[8]. Furthermore, other complications include birth anomalies, heart problems, liver diseases, increased risks of stroke, and loss of vision [9] [10]. Alcohol ranks among the top three risk factors that cause preventable illness capable of contributing to the burden of disease worldwide, it is linked to over three million deaths yearly, accounting for over 5% of all deaths worldwide [11]. Also, it is implicated among the top three risk factors for disease among young adults globally [12]. Furthermore, it is directly associated with over 2,000 injuries, illnesses, and other health problems [13]. Additionally, it is responsible for approximately 4% of global cancer cases each year [14]. In 2017, a World Health Organisation (WHO) report indicated that in Europe, alcohol was among the top three risk factors for morbidity and mortality, with alcohol misuse contributing to over 6% of all deaths in the region [15]. The yearly budget for health, crime, and loss of productivity caused by alcohol misuse in the UK is approximately over £22 billion [16]. Specifically, alcohol-related harm to health alone is estimated to cost around £3 billion annually in the UK [17]. Globally, the adult rate of alcohol consumption was about 38.3% [18]. Many of the alcohol-related problem was found among young people, with university students representing the highest proportion [19]. Alcohol consumption is regarded as a major public health problem in universities, with a weekly rate of about 90% among students [4] [20]. Alcohol misuse is commonly observed among university students [21]. Globally, it is more rampant in North American, European, and Australian universities [22]. The UK is considered among the top ten countries with a high rate of alcohol misuse among students [4]. When compared with their non-university peers, alcohol

consumption is higher among university students [19]. Although many students find drinking to be fun, the main cause of high alcohol consumption among UK students is misperception, which results in excessive drinking and a lack of self-control [23]. Alcohol misuse among universities is usually associated with parties, sports, major school holidays, academic breaks, specific days every week, and celebrations of personal milestones and achievements [19]. Peer pressure is perceived to play a crucial role in increasing the rate of alcohol consumption among university students. Others include self-efficacy, the environment where students live, and their level of general knowledge of alcohol use [24] [25].

‘Alcohol policy’ is a legal and regulatory scheme introduced worldwide as a modality to decrease alcohol misuse and alcohol-related complications [26]. It is regarded as laws introduced to hinder the growth of alcohol-related harms [12]. Worldwide, alcohol policies lag behind other public health issues, which include obesity regulation and smoking, which are driven by high-profile political will [27]. If adequate action is not taken to circumvent the menace of misuse of alcohol, it will continue to destroy many lives and impact negatively on the economy. This review is justified because it will help in providing evidence-based solutions towards addressing the issues related to alcohol misuse and its consequences. The WHO developed a global strategy in 2010 to address alcohol misuse worldwide [28]. These include price regulation, limiting the availability of alcohol, prohibition of drinking-driving, and regulating the selling of alcohol [29]. Controlling the availability of alcohol involves regulating the price of sale, regulating outlet licenses, the age at which individuals can purchase the product, and regulating the time and duration of marketing [30]. Alcohol misuse among university students remains a significant public health concern, despite the existence of various interventions, policies, and laws aimed at addressing the issue [19]. To intensify the approach towards developing a robust public health strategy for health promotion to decrease alcohol misuse in university settings, we need a better understanding of the situation. This scoping review aims to evaluate general knowledge about alcohol use, factors influencing alcohol misuse, and the frequency and pattern of alcohol misuse among university students. Alcohol misuses are often identified among university students [19]. Similarly, it was revealed that most of the students between 18 and 24 years of alcohol consumption pattern had increased since joining the university [31]. Studies were conducted on alcohol misuse among university students across different geographical locations. This indicates that extensive research has been conducted on this public health issue. Therefore, we intend to partake in this review to answer the following research questions.

- 1) What are the attitudes of students who have good knowledge of alcohol consumption towards alcohol misuse?
- 2) What are students’ perceptions regarding factors influencing alcohol misuse in different settings?
- 3) What are the common sociodemographic characteristics of university students that prompt the frequency of alcohol misuse across different regions?

2. Methodology

The method used was meta-analysis. Several studies' findings were reviewed to provide a more accurate estimate of an impact or relationship and a more robust conclusion than individual studies alone. The procedures were created in a way that would provide satisfactory answers to the study questions. These processes included establishing the eligibility criteria, looking for and choosing relevant research, choosing and evaluating the quality of the studies, synthesizing the included articles, gathering and summarizing, and consulting [32].

In the search strategy, the use of electronic databases was employed in identifying articles that were linked to the research topic, which included Medical Literature Analyses and Retrieval System Online (Medline), Applied Social Sciences Index and Abstracts (ASSIA), PsycINFO, Scopus, and the cumulative Index to Nursing and Allied Health Literature (CINAHL). Key terms related to the study area were used to search for articles. Relevant articles were retrieved using different terminologies synonymous with the key terms to enhance the scope [33]. Keywords were further explored using Boolean logic linking and truncation to facilitate the identification of large collections of articles depending on the operators used [34], which include 'AND', 'OR', and wild card asterisk-*. The use of 'AND' to combine keywords facilitated the search for documents that included both keywords, hence excluding articles containing either single or none of the keywords [35]. The symbol asterisk-* signifies wildcard. It was placed at the end of some keywords to replace a character or characters in a word, therefore enabling the finding of synonyms for the research topic [33]. The following Search strings and keywords were used during the search for articles: (knowledge, OR education, OR awareness, OR understanding, OR perception*, OR attitude*, OR practice*, OR prevalence) AND ("alcohol*" OR "alcohol misuse" OR "alcohol abuse" OR "binge drinking" OR "alcohol dependent*") AND (university student* OR "higher education student*" OR "college student" OR "undergraduate" OR "pre-graduate" OR "post-graduate"). Concerning global strategies by the WHO (2010) to curtail the harmful nature of alcohol misuse [28], we focused on articles between 2010 and 2024. University students between the ages of 18 and 30 years were focused upon as they are relevant to the demographic analyses because that is a crucial stage among alcohol consumers. No country restriction was considered to enhance the review's breadth and better understanding across different cultural contexts. Furthermore, only studies published in English were considered to minimize communication gaps. Two thousand two hundred and fifty-eight (2258) articles were identified during the initial search. An additional 12 papers were added using further search strategies, such as manual search for articles and citation tracking. EndNote 20 was utilized to streamline materials, and a unique identifier was ascribed to each article to keep a record of the references. Furthermore, abstracts of the identified articles were read to filter out studies unrelated to the topic or target population. In the end, twenty-two studies were utilized in this review.

The Caldwell framework was used as a guide to assess the identified articles [34]. The results were compiled, condensed, and behavior using thematic qualitative data analysis. All the results derived were coded and later expanded according to their thematic content. The emerging themes were defined using the following steps: identification of coded information from the chosen articles, code classification into themes, drawing a pattern and sub-theme, and summarising and synthesizing the information obtained. Findings are expressed in the result section narratively and using tables.

3. Study Limitation

Most of the research utilized a non-probability sampling technique. This approach results in potential bias and behavior problems [35]. Sampling weaknesses among qualitative and mixed sampling techniques may decrease the trustworthiness of the results [36]. The issue of bias was another common limitation related to most of the studies identified. However, a low propensity for social bias is associated with anonymous questionnaires. Few studies utilized a validated tool to measure the rate of alcohol use among students, however, sampling bias ranging from only undergraduates, a specific gender, or students living on-campus limits the behavior ability of the results of these studies. Based on the twenty-two studies included in the review, only four studies utilized the theoretical framework to guide their research. Two studies utilized the theory of planned behavior, while the other two utilized a socioecological model. None of the included studies used materials with longitudinal data to measure change over time.

4. Results

Sociodemographic correlates of alcohol misuse

Gender and living arrangements of students were identified as the common sociodemographic correlates of alcohol misuse.

Sociodemographic correlates of alcohol misuse according to different authors

Gender: Five articles were connected to the influence of gender on alcohol misuse.

A multi-centric study conducted by Yi *et al.* among 8996 undergraduate students enrolled through convenience sampling, out of which female respondents' proportion was 62.3%, while 37.7% were males [37]. The proportion of alcohol misuse among male and female students was 24.4% and 16.1%, respectively, as in **Table 1**. Similar to the findings of Yi *et al.*, a study by Nasui *et al.* in 2016 amongst 468 Romanian undergraduates using a randomized sample design, with male and female respondent proportions of 35.5% and 64.5%, respectively [38]. The tendency of alcohol misuse among male respondents was higher than among female respondents, with scores of 19.3% and 16.2%, respectively. Also, a large study conducted at an Australian university by Hallett *et al.* in 2012 revealed that the rate of alcohol consumption was significantly high among students (90%), out of which

48% engaged in alcohol misuse [39]. It was revealed that the proportion of misuse was higher in male than female respondents, with corresponding results of 50.6% and 35.7%, respectively. Furthermore, a study by Miskulin *et al.* in 2010 in Croatia among 831 undergraduate students revealed a high rate (90.9%) of alcohol consumption among the respondents out of which 39.8% were identified as engaged in alcohol misuse [40]. The proportion of alcohol misuse was higher among males, 69.2%, against females' 30.8%. However, an Italian study by Lamberti *et al.* in 2018 conducted among 1500 undergraduate and postgraduate students revealed that alcohol misuse among male and female respondents was 5.5% and 7.1%, respectively [9].

Table 1. The proportion of respondents with alcohol misuse by gender according to different authors.

Authors (Date)	Variable	
	Male	Female
Yi <i>et al.</i> in 2017	24.4	16.1
Nasui <i>et al.</i> in 2016	19.3	16.2
Hallett <i>et al.</i> in 2012	50.6	35.7
Miskulin <i>et al.</i> in 2010	69.2	30.8
Lamberti <i>et al.</i> in 2018	5.5	7.1

The result of this study counters the findings from the four other studies. In this study, the Alcohol Use Disorders Identification Test (AUDIT-C) was used. It represents respondents' probability of alcohol misuse being a hazardous drinker. The greater the score, the more probable the individual's drinking compromises their safety and health. The AUDIT-C score's main drawback is that it occasionally yields inconsistent results with self-reported drinking habits. This means that people may screen positive for unhealthy alcohol use even though they report drinking within recommended limits, and vice versa. This discrepancy can occur because the AUDIT-C is brief and may not accurately capture complex drinking patterns, which can cause uncertainty in clinical decision-making when interpreting the score.

Living arrangements: Van Zyl *et al.* conducted a study among 339 randomly selected students living on-campus at a university in South Africa [7]. The study revealed that more than 80% of the respondents were found to be involved in alcohol use, out of which 25.3% engaged in alcohol misuse, as in **Table 2**. Another study conducted at Malawian University by Tembo, Burns, & Kalembo in 2017 among 2518 undergraduates that were randomly sampled showed that 40.1% of university students staying off-campus engaged in alcohol misuse than 48.1% of students living on campus, which is higher [31].

Risk factors of alcohol misuse: The following are common risk factors of alcohol

misuse identified among the studies: peer influence, fear of social criticism/isolation, and knowledge of alcohol consumption.

Peer influence: Tonkuriman *et al.* conducted a study among 413 university students in Thailand using non-probability sampling and revealed that 94.7% of alcohol misuse among students was associated with the influence of their peers [25]. Muli & Lagan, in Scotland University, UK, pointed out that 97.8% of the 595 respondents attributed students' drinking habits to the desire to please their peers [2]. This finding affirms the role of peer influence in alcohol misuse. Franca *et al.* studied 731 respondents at a French university and revealed that more than 80% of the respondents who were involved in alcohol misuse admitted to the fact that their friends condoned the practice [41]. However, a study conducted by Chikere & Mayowa among 482 male respondents at a Nigerian university identified that 16.4% of the student's alcohol consumption habits were peer-driven [42]. This finding is lower compared to the findings of the earlier-mentioned studies.

Table 2. The proportion of respondents with alcohol misuse by living arrangements according to different authors.

Authors (Date)	Variable	Percent (%)	
	Living arrangement	Misuse alcohol	Not misuse alcohol
Van Zyl <i>et al.</i>	On campus	25.3	74.7
	Off-campus	-	-
Tembo, Burns, & Kalembo	On campus	48.1	51.9
	Off-campus	40.1	59.9

The desire not to be socially isolated and social coherence: Four studies were identified that assessed the role of social coherence and social isolation as factors driving alcohol misuse. Kawaida *et al.* conducted a study among 594 university students in Japan, exploring the reasons students engaged in heavy drinking, and revealed that a significant proportion of respondents admitted that their desire to be socially coherent is one of the factors that influence the level of alcohol they use [43]. Dumbili & Onyima conducted a study at a Nigerian university among 33 respondents to determine the relationship between social coherence and alcohol consumption [44]. Participants in the study believed that drinking alcohol enhances social cohesion. Also, they believed engaging in the consumption of high amounts of alcohol makes them 'bolder'. Chikere & Mayowa, in another study conducted among 482, revealed that the majority of the participants believed that heavy drinking upgrades their status to the level of the "most happening guys" [42]. Muli & Lagan revealed that 96% of the respondents admitted to drinking heavily to avoid being criticized by peers or becoming socially isolated [2].

Knowledge of alcohol use: Studies were identified to assess knowledge of alcohol consumption and risks associated with alcohol misuse among university students,

as in **Table 3**. A study by Gill & O'May in 2011 among 808 respondents sampled via convenience sampling method from two universities in Scotland showed that 70% of the respondents had good knowledge of the recommended guidelines for alcohol use [45]. A study by Reavley, Jorm, McCann, & Lubman in an Australian study among 774 university students revealed that 65% of the respondents had good knowledge of alcohol use guidelines [46]. Hasking & Schofield's study among 258 Australian university undergraduate students revealed that good knowledge of alcohol use guidelines was reported among 70% of the respondents [47].

Table 3. Showing a level of knowledge of students on alcohol consumption and risk associated with alcohol misuse in studies by different authors.

Authors (Date)	Percent (%)	
	Had good knowledge	Had poor knowledge
Gill & O'May	70.0	30.0
Reavley, Jorm, McCann, & Lubman	65.0	34.5
Hasking & Schofield	40.1	59.9
Hasking & Schofield	70.0	30.0

5. Discussion

Alcohol misuse is associated with complex interactions between personal, social, and environmental factors [48], it is important to discuss our findings based on the theory of planned behavior and the socioecological model.

Sociodemographic characteristics of respondents: This review recorded a significantly higher proportion of female respondents' rates, probably due to higher numbers of female students studying at the university level in several countries, as seen in the UK [49]. Also, the respondents' age range in this study was between 18 - 28 years because young adults between this age range had the highest representation in most universities [49]. Furthermore, this review revealed that most students live off-campus, which was expected because most university students stay off-campus [50], following the limited available space for accommodation on campuses [51].

The socioecological model: The Socioecological Model (SEM) implies that individual factors are not the only determinants of human behavior, but rather follow a diverse level of influencing factors [52]. This model helps public health practice for a long-time approach [53]. Five hierarchical levels were associated with this model, including the intra-personal, interpersonal, organizational, community, and societal levels [53].

Intrapersonal level: This review was focused on younger individuals between the age ranges of 18-30 years. This is very critical as alcohol misuse is more likely to occur within this age group [54]. This is further influenced by increased social connections in the university, reduced parental guidance, and high-level inde-

pendence [48]. Most of the studies that examine gender as a factor that influences alcohol misuse identified males to be inclined to consume more alcohol than their female counterparts. This is likely due to biological and cultural factors [55]. Biological factors include the fact that men's body sizes are usually greater than those of the females, which makes alcohol levels in females' blood rise rapidly and maintain more than in males, leading to early consequences [56]. Culturally, men are more predisposed to risky social behaviors than women [55]. The key parameter in the intrapersonal level of the SEM is knowledge of alcohol consumption. This review revealed a good knowledge of the weekly recommended guidelines for alcohol consumption. However, neither good nor poor knowledge of alcohol consumption lowers or increases the levels of alcohol consumption. This might be explained by the fact that weak academic skill which is a strong common factor that influences alcohol misuse among students [57]. A stressful academic life or poor academic performance results in alcohol use among students, which can also be exacerbated by alcohol misuse, leading to a bidirectional effect [58]. Furthermore, alcohol misuse results in decreased students' time spent studying, truancy in classes, and a decrease in intellectual engagement, therefore resulting in poor academic outcomes [4] [57]. One of the components of hazardous drinking is binge drinking [59]. It was reported by most of the identified studies that university students who consumed alcohol engaged in binge drinking, which was common among male and undergraduate students. This agrees with the findings of Norman, Webb, and Millings [17]. The factors identified to prompt university students into binge drinking include enjoyment motives, social motives, sensation seeking, and relieving academic stress [43].

Interpersonal level: Peer influences are seen as the most important factor that influences university students to misuse alcohol. This review revealed that peer influence is a strong indicator of alcohol misuse among students. This factor can be displayed in many ways, including mutual group personality, perception of driving social benefits, and social endorsement by peers [60]. Others include escaping socially isolated or to 'feel among' [44].

Organizational level: Davoren *et al.* reported a significant increase in alcohol consumption rate among students since the commencement of their university life [4]. Similarly, Tarrant *et al.* revealed that most of the students between 18 - 24 years reported that their alcohol consumption pattern had increased since being admitted into the university [61]. The following factors were perceived to influence drinking patterns among university students, which include alcohol sale policies in the universities, drinking patterns among various social groups in the university, negative evaluation from lecturers, and attitude of students towards social isolation and criticism of students that stay off alcohol. Poor relationships or negative evaluations from teachers relate closely to alcohol misuse among students [62]. This finding is more relevant to the male gender because female students generally work independently and are more likely to achieve better academic performance than male students [63]. Also, being a member of a social group such as

that of a sports team was revealed to be associated with alcohol misuse [64]. Ideally, Sporting activities enable individuals to stay healthy, however, alcohol misuse is relatively higher among university students engaging in sports [6]. This can be influenced by stress, over-drinking culture to celebrate an accolade, and the promotion and selling of alcohol during sports events [65]. The availability of alcohol in events and social gatherings is a norm among students [60]. All heighten students' exposure to alcohol usage. Some studies revealed that most students believed that easy access to alcohol and availability on campus could influence alcohol misuse, especially with weak alcohol policies within some universities [3].

Community Level: The community sphere of the SEM includes the following factors: the drinking behavior of role models and students' living arrangements. Simons-Morton *et al.* revealed that students living independently have a higher tendency to engage in alcohol misuse [65]. This might be due to the high level of restriction on campus [31]. In addition, less guidance, more independence, and proximity or frequent exposure to shops and pubs to purchase alcohol are associated with students' increased alcohol misuse [46]. This is often seen in off-campus settings. Furthermore, Muli & Lagan revealed a strong perception that students emulate the drinking behavior of their role models as a factor that influences their drinking habits as well [3]. Role models include actors, actresses, politicians, musicians, sportspersons, and other characters [66]. Consequently, students with role models engaging in healthy habits exhibit healthy behaviors [66].

Societal level: Muli & Lagan reported that students revealed that weak alcohol policies can be a strong factor that influences their alcohol misuse [3]. The WHO policies to reduce alcohol misuse include increasing the price of alcohol to limit regular purchases, alcohol sale regulation, and limiting availability [29]. Other policies include the health behavior of alcoholic products, restriction of branded sponsorship, and weekly consumption guidelines [30]. Despite these policies, the implementation has not been well adhered to by stakeholders in some countries [4]. Students usually procure cheaper alcohol products available [67].

6. Conclusions and Recommendations

This review revealed that most students were knowledgeable about the alcohol use guidelines of their various countries and the risks associated with alcohol misuse. The respondents strongly perceived that the main factors that influence their drinking habits include avoidance of being socially isolated, peer influences, being a member of a sports team, drinking behaviors of role models, and weak alcohol policies in the university. The prevalence of alcohol use among university students was high, with the majority engaging in alcohol misuse or binge drinking behavior. The general knowledge of alcohol consumption does not automatically lead to a low propensity to engage in alcohol misuse. Several factors contribute to negative alcohol drinking behaviors as seen in the SEM. Recommendations include the following:

- Education recommendation: Education of students on bad drinking habits,

their impact on academic performance, and how to prevent them through seminars, shows, and dramas.

- Offer tutorial extra classes to aid academics and address related challenges.
- Incorporation of the roles of parents, students, and stakeholders in designing policies regarding alcohol use. Involving the students could help identify other ways to engage them in activities that could reduce cases of alcohol misuse. Policies should be reviewed intermittently to monitor progress and gaps.
- Future studies should consider a Longitudinal approach to determine causality. One potential avenue for further study would be research to explore the relationship between alcohol misuse, good knowledge of alcohol misuse, and the associated risks involved in alcohol factors. These will help develop tentative intervention programs for students.

Conflicts of Interest

The authors declare no conflicts of interest.

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