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Alcohol Consumption among Arabs in the United Arab Emirates

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Abstract

Background: Alcohol is a significant global risk factor for numerous diseases and injuries, contributing substantially to disability and mortality. Although cost-effective interventions are available, many countries still lack comprehensive national policies to reduce alcohol-related harm. The Arab world, comprising 22 diverse countries from North Africa to Western Asia, exhibits varying attitudes toward alcohol sales and consumption. Factors such as religion, gender, income level, and age can influence alcohol consumption in these countries. With its diverse population exceeding 10 million, the United Arab Emirates provides a valuable setting for studying alcohol consumption among Arab nationals residing there.

Methods: A cross-sectional study was carried out in various bars and restaurants serving alcohol in the UAE, involving a sample of 236 participants. The Alcohol Use Disorder Identification Test (AUDIT) was utilized to evaluate the severity of alcohol consumption. Additionally, data on drinking patterns and related factors such as age, income level, gender, religion, and nationality were gathered using a structured questionnaire.

Results: A total of 236 participants (226 males and 60 females) completed the AUDIT questionnaire, with the cut-off point set at 8 for both men and women. The results indicated a significant correlation between alcohol use and various factors. There were notable differences across age groups for both genders, with those aged 31-50 years showing the highest AUDIT scores compared to other age groups. Higher income levels were associated with AUDIT scores above the usual cut-off for both men and women. Men generally exhibited higher AUDIT scores than women. Additionally, participants from Gulf countries had the highest AUDIT scores, while religion did not show a significant relationship with alcohol consumption.

Conclusion: This study highlights a significant level of alcohol consumption among Arab nationals living in the United Arab Emirates, with factors such as age, gender, income level, and nationality playing a key role. However, religion did not appear to influence alcohol involvement.

Keywords: Arab, Alcohol consumption, Alcohol Use Disorder Identification Test (AUDIT), Nationality, Age, Gender, Income Level, Religion.

List of abbreviations:

AUD - Alcohol Use Disorder

AUDIT - Alcohol Use Disorder Identification test

CI - Confidence Intervals

DALYs - Disability-Adjusted Life Years

GBD - Global Burden of Disease

OR - Odds Ratios

SPSS - Statistical Package for the Social

UAE - United Arab Emirates

WHO - World Health Organization

PAU – Problematic Alcohol Use

BAC – Blood Alcohol Concentration

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Alcohol consumption among Arabs in the United Arab Emirates

1.0 Introduction

Alcohol misuse is a complex and pervasive issue that transcends geographic, cultural, and socioeconomic boundaries, posing significant challenges to individuals, families, and societies worldwide. Defined as the harmful or hazardous consumption of alcohol, it encompasses a spectrum of behaviors, from excessive drinking and binge drinking to alcohol dependence and addiction. The consequences of alcohol misuse extend far beyond the individual, impacting physical health, mental well-being, relationships, and societal dynamics.

In recent years, alcohol misuse has garnered increasing attention from researchers, policymakers, and healthcare professionals due to its profound implications for public health and social welfare. Despite efforts to address the issue through education, prevention programs, and regulatory measures, alcohol misuse remains a persistent concern, contributing to a wide range of negative outcomes, including accidents, injuries, violence, and chronic health conditions.

Over the last two decades, alcohol use disorder (AUD) has increased globally (Vos et al.,2016). According to the World Health Organization (2014), 3.3 million deaths worldwide were recorded in 2012 due to alcohol misuse. Universally, statistics showed that alcohol use and misuse resulted in an estimated 4 to 5 percent of disability-adjusted life-years (DALYs) and 4 percent of deaths. These deaths result from a range of alcohol-related conditions, including liver disease, cardiovascular disorders, certain cancers, and mental health disorders (Baan et al., 2007; Shield, Parry & Rehm, 2013), and also has a primary role in infectious diseases like tuberculosis and AIDS (Lonnroth et al., 2008; Baliunas et al., 2010). Moreover, alcohol misuse contributes to injuries and

accidents, both on the road and in other settings, with significant economic and social costs. (Rehm et al. 2009).

The consequences of alcohol misuse extend beyond the individual to impact families and communities. Relationships can be strained, and family dynamics disrupted by excessive drinking. Alcohol-related violence, accidents, and crime contribute to societal problems and place a burden on healthcare systems and law enforcement agencies (WHO,2018).

There is significant research done to study alcohol consumption in Western countries regarding gender, income, and religious level; however, research on alcohol consumption in Arab countries is relatively limited. This scarcity of data can be attributed to several factors, including the strong influence of Islamic principles that discourage alcohol use, cultural sensitivities, and the potential challenges associated with researching a sensitive topic in these regions.

Limited research can make it difficult to gain a comprehensive understanding of alcohol consumption patterns, associated behaviors, and their impact in Arab countries. However, there have been some efforts to examine this issue, particularly in the context of public health and healthcare policies. The Arab world comprises 22 diverse countries extending from North Africa to Western Asia (Mandil, 2009). Despite their shared membership in the League of Arab States, these countries have distinct histories and cultures and are at different stages of economic and political development. This diversity is also reflected in their varied approaches to alcohol sales and consumption. While alcohol is permitted in most Arab countries, it is completely banned in some, such as Libya, Saudi Arabia, Somalia, Sudan, Kuwait, and Yemen, with penalties for those found in violation of these laws. In other countries like the United Arab Emirates, alcohol is permitted, but it is subject to regulation, and there are specific legal requirements for purchasing and consuming it (Obaid et al., 2017).

Even in countries where alcohol is legal, its consumption might still be considered socially unacceptable, leading to under-reporting. This under-reporting bias is thought to be one of the reasons alcohol intake does not rank as a leading risk factor in the Arab world. According to the Global Burden of Disease (GBD) results, alcohol ranks 14th out of 24 risk factors in the Arab world, whereas it is the third leading risk factor worldwide (IHME, 2014). The disparity could also be because alcohol consumption is genuinely lower in Arab Islamic countries (AbuMadini, Rahim, Al-Zahrani, & Al-Johi, 2008).

In a span of 21 years (1993-2014), across 22 countries, only 81 published articles related to alcohol were identified. The number of articles peaked at 9 in both 2009 and 2010, while the lowest count was 1 in 1993 and 1996. This results in an average of 0.18 articles per country per year. Figure 1 illustrates the distribution of these publications by country between 1993 and 2014, with the United Arab Emirates (UAE) accounting for just four publications throughout this period (Ghandour et al., 2016). This scarcity of published research underscores the need for more studies on alcohol consumption in the UAE due to the insufficient data currently available.

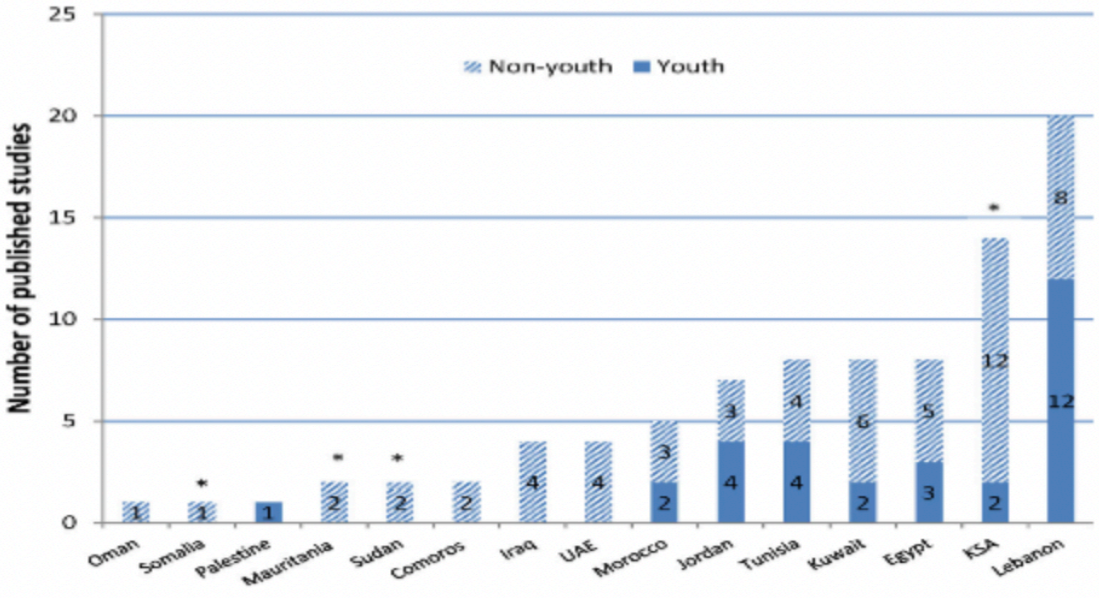


Figure 1. The number of peer-reviewed journal articles related to alcohol published between 1993 and 2014 by Arab country is as follows. Note that some Arab countries had no published articles during this period: Bahrain, Djibouti, Qatar, Syria, Algeria, Libya, and Yemen. It's also worth mentioning that two articles were relevant to more than one country, causing the total count to exceed 81. An asterisk (*) indicates countries where alcohol is prohibited or banned.

Examining the epidemiological evidence and policy context surrounding alcohol in the Arab world is crucial, especially given recent market research data indicating a spike in alcohol consumption from 2001 to 2011. This trend, which includes increased consumption even in countries where alcohol is officially banned, showed a 72% increase in liquor sales, compared to a 30% global average rise (Serjeantson, 2012). This information is significant because research has established a strong correlation between per capita alcohol sales and higher rates of self-reported consumption, along with risky drinking behaviors (Smith, Remington, Williamson, & Anda, 1990). Additionally, there's a notable ecological link between estimated alcohol sales and alcohol-related mortality rates (Robinson, Shipton, Walsh, Whyte, & McCartney, 2015).

This paper aims to contribute valuable insights into the landscape of alcohol consumption in one Arab country that has more than 200 nationalities residing in it, it is the United Arab Emirates (UAE). Given the unique cultural, religious, and legal dynamics of the UAE, understanding alcohol use within this context is essential. The UAE's diverse population includes both local Emiratis and expatriate communities, each bringing their cultural backgrounds and attitudes toward alcohol. Another reason for studying a country such as the United Arab Emirates is that it may provide insight into alcohol consumption in the Arab world, as it has people from all the Arab countries residing there. However, to understand the alcohol consumption analysis of Arab people living in the UAE, it is crucial to study the general background of each Arab country and its tolerance and consumption of alcohol use.

While numerous factors contribute to alcohol involvement in young adults, this paper undertakes the task of exploring the intricate landscape of alcohol consumption in the United Arab Emirates (UAE) among Arab nationalities, with a multifaceted perspective that examines differences based on age, gender, nationalities, religion, and income levels. In the UAE, a society deeply rooted in Islamic principles and diverse cultural influences, understanding how these variables intersect with alcohol use is of paramount importance. By investigating potential variations in consumption patterns across different age groups, between men and women, among different nationalities, peoples' beliefs in different religions, and across income strata, this research aims to uncover the intricate dynamics at play. It seeks to illuminate the factors contributing to disparities in alcohol consumption, whether influenced by cultural backgrounds, socioeconomic status, or gender roles within the UAE's multifaceted society.

1.1 Age and Alcohol Consumption

The elevated levels of alcohol consumption among young adults pose a critical public health challenge due to their association with various hazardous behaviors and serious negative outcomes. This age group is particularly susceptible to engaging in risky activities, such as impaired driving, which can result in devastating consequences. Research highlights that alcohol-related traffic accidents are one of the most severe and immediate outcomes of excessive drinking among young adults, often leading to fatalities (Hingson et al., 2005; Yi et al., 2004). Additionally, alcohol use in this demographic is linked to other short-term risks, including unintentional injuries, violence, and unsafe sexual practices, all of which contribute to the broader public health burden. These behaviors not only affect the individuals involved but also have broader societal implications, such as increased healthcare costs and loss of productivity, making the high prevalence of drinking in young adults a multifaceted issue that requires targeted interventions and preventive strategies.

Excessive alcohol consumption among older adults is associated with negative health outcomes, including poor health, cognitive decline, problematic drinking behaviors, and alcohol dependence (Blow & Barry, 2002; Moos et al., 2004; Oslin et al., 1998). However, moderate alcohol consumption might offer some health benefits (Ferreira & Weems, 2008; Lang et al., 2007; Stott et al., 2008). When comparing high alcohol intake between younger and older individuals, the adverse effects are more pronounced in older adults due to their reduced capacity to metabolize alcohol (Moore, 2003). To address this, the National Institute on Alcohol Abuse and Alcoholism (2007) and the American Geriatrics Society (Moore, 2003) have provided guidelines recommending that individuals aged 65 and above limit their alcohol intake to a maximum of one drink per day, seven drinks per week, and no more than three drinks on a single occasion. A study by Merrick et al. (2008) found that 9% of older adults exceeded these recommended guidelines based on a cross-sectional analysis of a nationally representative sample.

Research on drinking patterns across the lifespan generally shows that alcohol consumption increases and peaks during early adulthood, followed by declines in participation, overall consumption, and the number of drinks per occasion (Fillmore et al., 1991; Johnson et al., 1998). Cross-sectional studies consistently reveal that as people age, their alcohol consumption per occasion decreases, and the rate of abstention increases (Breslow et al., 2003; Breslow & Smothers, 2003; Johnson et al., 1998; Ruchlin, 1997). While some longitudinal studies have observed similar trends in decreased drinking with age (Goodwin et al., 1987; Moore et al., 2005), others have not found such patterns. For example, Eigenbrodt et al. (2001) reported increased abstention with age, and Glynn et al. (1985) identified a reduction in drinking problems among older adults, but neither study found a statistically significant decrease in alcohol consumption specifically linked to aging.

Most studies that are nationally representative of alcohol use among the elderly are cross-sectional (Breslow & Smothers, 2003; Kerr et al., 2004; Kirchner et al., 2007; Merrick et al., 2008). Conversely, most longitudinal studies are not nationally representative (Eigenbrodt et al., 2001; Moos et al., 2004; Walton et al., 2000). The nationally representative longitudinal studies that do exist typically track drinking patterns for less than five years (Dawson et al., 2008; Karlamangla et al., 2006; Perreira & Sloan, 2001) or conduct fewer than five interviews (Goodwin et al., 1987; Moore et al., 2005; Perreira & Sloan, 2001). These longitudinal studies have provided limited insight into the correlates of changes in drinking behavior over time, beyond demographic factors.

1.2 Arab Society and Religion on Alcohol Consumption

Consuming alcohol is a complex behavior that is influenced by a variety of factors. Research has shown that social and cultural factors significantly influence alcohol use behaviors. These factors affect actual drinking behaviors and their acceptability among those societies. For instance, Alcohol consumption is less accepted in Arab-Islamic societies compared with other Western societies.

In Arab countries, Islam is the predominant religion, and its teachings strictly forbid the consumption of alcohol. This prohibition is clearly stated in the Quran, where it is considered haram (forbidden). The Quranic verse from Surah Al-Baqarah (2:219) specifically addresses alcohol and gambling: "They ask you about wine and gambling. Say, 'In them is great sin and [yet, some] benefit for people. But their sin is greater than their benefit.'"

Islamic law extends this prohibition to encompass not only the consumption of alcohol but also its production, sale, and distribution. Consequently, many Arab nations have enacted strict alcohol laws and regulations, making it illegal to buy or consume alcoholic beverages publicly.

For instance, in Saudi Arabia, the sale and consumption of alcohol are prohibited by law, with those found in violation facing severe penalties, including fines and imprisonment. Other Arab countries, such as Kuwait, Qatar, and the United Arab Emirates, also have stringent regulations governing alcohol.

In Muslim societies, religion, and sociocultural values are two major factors that often negatively affect alcohol drinking (Almarri & Oei, 2009; Bilal et al., 1990; Ghandour et al., 2009; Karam, Maalouf & Ghandour, 2004). The Holy Quran and Al-Hadith, the two major sources of Islamic law, explicitly state that alcohol drinking is prohibited (Tarighat-Esfanjani & Namazi, 2016). Thus, drinking alcohol is considered sinful in Muslim countries. Furthermore, a recent study found a strong correlation between alcohol use and stigma and social humiliation in Islamic nations (Lankarani & Afshari, 2014).

On the other hand, in some religions or cultures, like Christianity, moderate alcohol consumption is accepted; not only is accepted but is also embedded in some of their religious ceremonies. (Baron-Epel et al. 2014), which is the exact opposite of the Islamic religion.

In Christian-majority Arab countries, such as Lebanon, Syria, and Egypt, alcohol consumption is more prevalent compared to some other Arab nations. While these countries have sizable Christian populations, they also have a mix of religious and cultural influences that shape alcohol-related practices.

The stance on alcohol varies among Christian denominations in these countries. Some Christian communities, such as Maronite Catholics, Eastern Orthodox Christians, and some Protestant groups, allow moderate alcohol consumption, particularly during religious rituals like the Eucharist or as part of cultural celebrations. Wine, in particular, holds a significant religious symbolism within Christianity. It's important to note that even within Christian communities,

individual beliefs and practices related to alcohol can vary widely. Some individuals and groups may adhere to abstinence, while others may consume alcohol in moderation.

While alcohol consumption in Christian-majority Arab countries is generally more accepted than in some Muslim-majority countries, there is still a range of views and practices, reflecting the diversity within these regions.

Due to this fact, knowledge about alcohol consumption among Arab Muslims and Arabs, in general, is minimal. However, few studies were made that looked at alcohol consumption in Arab countries and proved the presence of alcohol consumption in these countries (AlMarri & Oei, 2009). Some Arab countries allow alcohol consumption while other Arab countries strictly forbid alcohol use and misuse (Ghandour, Karam, & Maalouf, 2009). Having more than one religion among the Arab countries created a fluctuation in alcohol consumption among Arabs. Among Christian Arabs, alcohol use is present as it is part of their religious and cultural norms. However, alcohol use is prohibited by the religion of Muslims and Druze, although alcohol use is not completely absent (Baron-Epel et al. 2014).

1.3 Gender and Alcohol Consumption

It Is well-known among societies that men consume alcohol more than women. This was proven in all major quantitative studies that were conducted to compare alcohol use or misuse in different societies. Examples of these studies could be the ones conducted by Jaervinen & Olafsdottir (1989); Plant (1990); Helzer et al. (1990); Hupkens, Knibbe & Drop, (1993) & Fillmore et al. (1991) (1997). Few attempts have been made to study whether drinking behaviors vary systematically across different societies regarding gender differences (Filmore et al., 1997). Although more research is needed in this area, these studies concluded that heavy drinking or misuse of alcohol is perceived as predominantly male behavior (Wilsnack et al., 2000).

Research measuring alcohol use among women and its consequences was minimal before the 1970s (Vogeltanz & Wilsnack, 1997). Having more research and studies in these areas may lead to the prevention of harmful drinking behaviors, especially among women. Two perspectives may give a part of the justification of the difference between men and women in alcohol consumption.

The first perspective is the biological difference in the body of a male versus the body of a female. There is a difference in how a male body reacts to the intake of alcohol in regards to a female body. Males or men usually have larger volumes of body water, which will allow alcohol to be circulated in larger amounts of water. On the other hand, females or women have smaller volumes of water in their bodies, therefore, alcohol distribution will be among lower amounts of water. The fact of having fewer amounts of water in the body of a female can be intensified to a certain extent by lower "first pass" metabolism of alcohol. This will result in alcohol being directly absorbed into the bloodstream causing a higher effect on the body (Frezza et al., 1990; Seitz, Egerer & Simanowski, 1993; Pozzato et al., 1995). This biological difference between genders explains why the same amount of alcohol intake by men and women will have different effects on their bodies. Women will have higher alcohol levels in their blood than men with the consumption of the same doses of alcohol (Marshall et al., 1983; Goist & Sutker, 1985; Cole-Harding & Wilson, 1987). As a result, women could obtain the same effect from drinking as men even with fewer amounts of alcohol consumed, therefore restricting their intake of alcohol more than men (York & Welte, 1994).

As biological explanations have some strengths, it also has some weaknesses. First, there is insufficient evidence that women do reduce their alcohol intake because of their higher alcohol blood peak level per unit of alcohol (see e.g. Mills & Bisgrove, 1983; Sutker et al., 1983; Goist &

Sutker, 1985; Lex et al., 1988; Williams, 1991). Second, the absence of explanations for how relatively small biological differences in alcohol distribution and metabolism would result in relatively large differences in drinking behavior between genders, or why such biological differences would lead women to not only drink less but also to drink less often (Helzer et al., 1990; Fillmore et al., 1991). Third, if the body water level difference between genders is the explanation for why alcohol intake is different, then the concept should also aid in the explanation of the difference in alcohol intake within the same genders. Fourth, biological differences cannot specifically explain the variation in differences between genders in their drinking behavior across different societies and subcultures.

The second perspective in explaining gender differences in alcohol intake is the cultural or social-structural perspective. The different social roles of men and women cause them to drink differently. Ethnography indicates that as roles between men and women are most clearly divided, so are the drinking patterns of the two genders (Child et al., 1965; Gefou-Madianou, 1992a; McDonald, 1994a).

The reason behind men drinking more than women could be because drinking alcohol may serve them to demonstrate their masculinity. All men have been using alcohol drinking as a way to ignore social differences, gain social support, escape from control by others, and build strong personal ties with one another (Salmore, 1989; Gefou-Madianou, 1992b; Hendry, 1994; Macdonald, 1994). By drinking excessively, men may also be obligated to expose their self-control, stamina, non-conformity, and willingness to take risks (Driessen, 1992; Gotoh, 1994; McDonald, 1994b).

Women on the other hand, unlike men, have been socially restricted from drinking alcohol fearing that drinking may affect their social behavior and responsibilities (Blume, 1997). Drinking

alcohol by women has been discouraged socially as the effects of alcohol on the body were considered unsuitable for their traditional roles. It might also indicate a dangerous failure of social control over the relationships between women and their families and how they behave publicly (McLaughlin, 1991; Ikuesan, 1994; Kua, 1994; Mphi, 1994; Purcell, 1994; Warner, 1997). Moreover, it has been feared that women's social control over their sexuality might reduce due to alcohol misuse or overdrinking, by making them more vulnerable to sexual advances (Gomberg, 1982; Snare, 1989; McLaughlin, 1991; Stewart, 1992; Purcell. 1994).

The socio-cultural perspective and its explanations also have several weaknesses. Firstly, if gender roles are the reason behind the differences in alcohol consumption between men and women, then as the differences in gender roles diminish, or as women gain access to traditionally male roles, drinking behaviors between men and women should also be expected to converge. In the past decade, some evidence of this convergence has been reported (Hammer & Vaglum, 1989; Mercer & Khavari, 1990; Saelan, Moller & Koster, 1992). Nevertheless, other research results have shown persistence in gender differences, specifically in young adult samples (Temple, 1987; Perkins, 1992; Johnston, O'Malley & Bachman, 1994), and in general adult people (Ferrence, 1980; Bell, Havlicek & Roncek, 1984; Midanik & Clark, 1994; Neve et al., 1996). Suppose the drinking behaviors of men and women did not change systematically with the gender roles changes. In that case, the sociocultural explanations of gender differences in alcohol intake between the two genders are at a challenge (Wilsnack et al., 2000). Secondly, such analyses do not explain the origin that gender differences in alcohol use came from, but only can explain the ideological justifications behind these differences. Thirdly, these analyses may be providing a little basis for predicting the drinking behavior of men and women, and the gender difference between these behaviors, but do not provide any explanations of why these differences vary from one culture to another. Fourthly, given the fact that gender roles have different rules in different

societies, these explanations cannot clearly explain why men's alcohol use consistently exceeds women's alcohol use cross-culturally (Wilsnack et al., 2000).

As years progress, women are getting more involved in alcohol consumption. Studies are showing a high percentage increase in women's alcohol consumption in comparison with men's percentages. According to data collected by Jernigan (2013), there's a noticeable global trend of the gender gap in alcohol consumption narrowing, with young females becoming a rapidly growing market for the alcohol industry. This trend is supported by substantial increases in current drinking, with a 66.4% rise among females compared to a 28.4% increase among males (Ghandour et al., 2015). Additionally, the rate of lifetime drunkenness has seen a significant surge, with a 122% increase among females compared to a 22% rise among males between 2005 and 2011 (Ghandour et al., 2015).

The fact that gender differences in drinking behavior have not been adequately explained reflects a lack of knowledge about these differences. While there is an increasing amount of data on the drinking habits of people around the world, few studies go beyond analyses that indicate men abuse alcohol more than women. It is remarkable how little is known about how gender differences in alcohol use and abuse vary or develop over time, across cultures. Research knows even less about how drinking behavior differs among men and women regarding causes, contexts, and consequences.

1.4 Income and Alcohol Consumption

Income significantly influences alcohol use patterns, reflecting an individual's access to resources, health-promoting environments, and exposure to stressors like financial issues and deprivation (Galobardes et al., 2006). Research highlights distinct differences in drinking behaviors between lower-income and higher-income individuals.

Lower-income individuals face a significantly higher risk of engaging in heavy or hazardous drinking due to a variety of socio-economic factors. Studies indicate that material stressors, such as financial instability and limited resources, often compel individuals in this group to turn to alcohol as a coping mechanism. This phenomenon, commonly referred to as the "self-medication" hypothesis, suggests that people use alcohol to manage the stress and deprivation associated with their economic conditions (Boardman et al., 2001).

The stress from financial strain, such as the inability to meet basic needs or the pressure of debt, contributes to increased alcohol consumption. This pattern of hazardous drinking is further supported by research from Anderson (2006), Batty et al. (2008), Huckle et al. (2010), and Karlamangla et al. (2006). These studies collectively highlight the correlation between economic hardship and the propensity for heavy drinking, emphasizing that the stress of limited resources can push individuals towards alcohol misuse.

Interestingly, despite the increased risk of hazardous drinking, lower-income individuals are also more likely to abstain from alcohol altogether. Several factors contribute to this trend. Cultural and religious norms play a significant role, as some communities and belief systems advocate for abstinence from alcohol. Additionally, health reasons may deter individuals from drinking, especially if they have preexisting conditions that could be exacerbated by alcohol consumption. Financial constraints also make it difficult for lower-income individuals to purchase alcohol, further contributing to higher rates of abstention (Anderson, 2006; Cummins et al., 1981; Knupfer, 1989). Although Global alcohol data, primarily derived from high-income countries, indicate that low-income groups are more likely to abstain from alcohol; however, when individuals from these groups do consume alcohol, they tend to engage in high-risk drinking patterns and suffer disproportionately more adverse health consequences compared to their more affluent counterparts (Allen et al., 2017; Hashibe et al., 2003; McGuire, 2011).

The duality of alcohol use among lower-income groups—where some engage in hazardous drinking while others abstain—reflects the complex interplay of social, economic, and cultural factors.

In contrast to lower-income individuals, higher-income individuals exhibit different drinking behaviors, often characterized by light and frequent alcohol consumption. This pattern is facilitated by their disposable income, which allows them to purchase alcohol without experiencing financial strain (Wagenaar et al., 2009). The ability to afford alcohol more easily means that drinking can become a regular part of their lifestyle without the same economic concerns that might limit consumption in lower-income groups.

Social norms among middle- and high-income groups also play a significant role in shaping drinking behaviors. Supportive social norms within these communities often encourage light, frequent drinking, especially within professional and social networking contexts. In many cases, alcohol consumption is an integral part of socializing, whether it is during business meetings, social gatherings, or events. This acceptance and normalization of alcohol use in social settings can contribute to the prevalence of light drinking among higher-income individuals (B. Peters & Stringham, 2006a).

Moreover, higher-income individuals typically have better access to health information and resources that promote moderate drinking. They are more likely to be aware of the health risks associated with heavy drinking and, as a result, may consciously choose to drink in moderation. This greater awareness and access to health information can lead to drinking habits that reflect a preference for healthier lifestyles. Research by Huckle et al. (2010) and B. L. Peters & Stringham (2006b) supports this notion, suggesting that higher-income individuals' drinking patterns are often influenced by a greater understanding of the health implications of alcohol consumption.

Additionally, Ziebarth & Grabka (2009) note that the emphasis on healthy living and wellness prevalent among higher-income groups further contributes to their moderate drinking habits. This focus on health can lead to a more measured approach to alcohol consumption, where individuals are mindful of maintaining a balance that supports their overall well-being.

A study by Kinra et al. (2010) found that individuals from lower socioeconomic groups drank more frequently and were three times more likely to engage in regular heavy drinking compared to wealthier and more educated groups. Conversely, well-educated individuals were eight times more likely to consume large quantities of alcohol during drinking occasions. Another ten studies consistently showed that alcohol use was most prevalent among lower-income, less-educated, unskilled, and lower-caste groups (Deepa et al., 2011; Gupta et al., 2012; Hemström, 2002; Houehanou et al., 2015; Global burden of disease data visualizations, 2015; Jones et al., 2015; Kar et al., 2010; Laux et al., 2012).

In conclusion, income strongly impacts alcohol consumption patterns. Lower-income individuals are more prone to heavy or hazardous drinking due to stress and financial strain. In contrast, higher-income individuals tend toward light, frequent drinking, facilitated by disposable income and supportive social norms. Studies reflecting these results were conducted in Western countries, so it is crucial to dig more in-depth into whether these results also reflect the situation in the Arab countries.

1.5 Nationality and Alcohol Consumption

In Middle Eastern countries, alcohol, and substance abuse are often misunderstood and heavily stigmatized due to strict legal frameworks and conservative religious cultures. The region's stringent laws against alcohol consumption, including severe penalties for possession and use, create a clandestine environment where individuals struggling with alcohol misuse fear legal

repercussions. This fear deters many from seeking necessary support and treatment. (addcouncel, 2022)

Cultural and religious norms place a strong emphasis on social and familial honor, leading to the shaming and shunning of individuals who misuse alcohol. Arab families in Middle Eastern countries, aiming to protect their reputations, may distance themselves from affected members, exacerbating the isolation and guilt felt by those struggling with addiction. This social ostracism makes recovery more challenging.

Furthermore, the lack of awareness and understanding about addiction in these societies means that the issue is often minimized or ignored. Addiction is frequently viewed as a moral failing rather than a medical condition, limiting the development of supportive infrastructures like counseling services and rehabilitation centers.

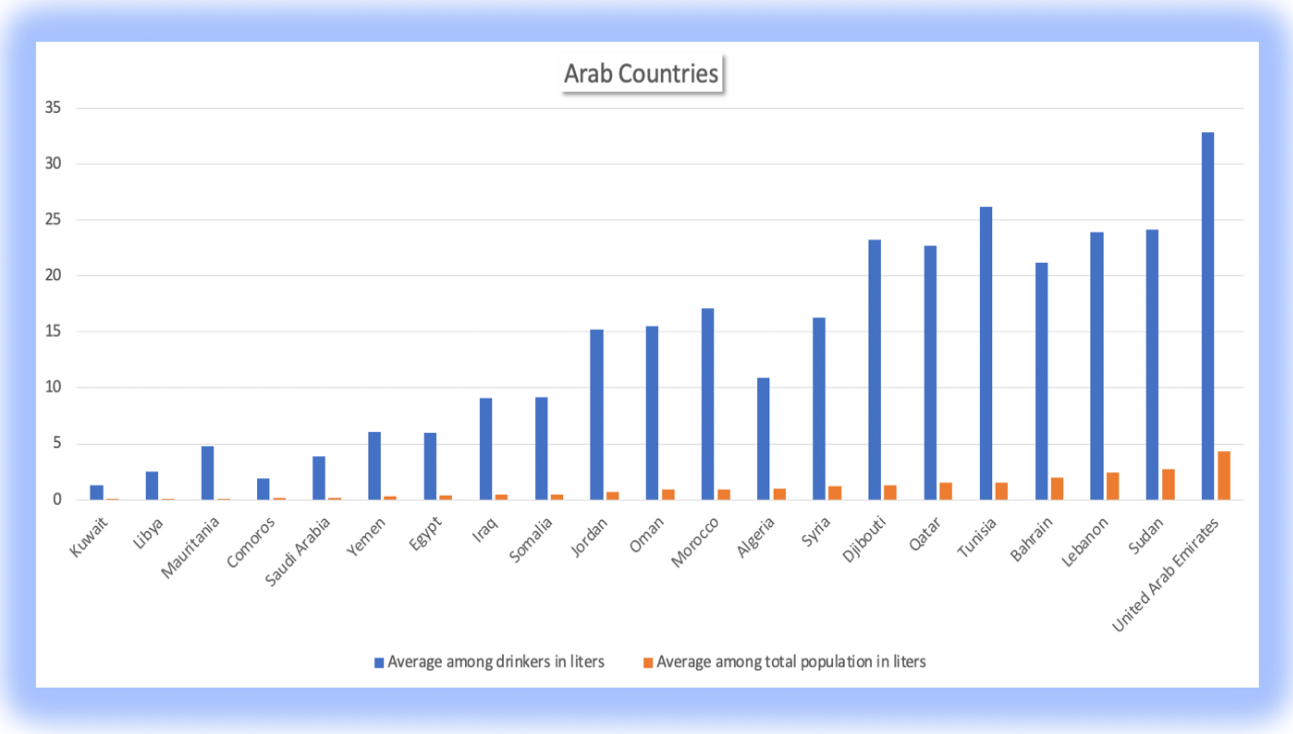


Figure 2. shows the average alcohol consumption among drinkers in liters and the average alcohol consumption among the total population in liters in the Arab countries. Retrieved from:

https://stepfeed.com/arab-countries-ranked-by-alcohol-consumption-from-lowest-to-highest-5822

Figure 2 presents a detailed comparison of average alcohol consumption in liters among drinkers and the total population across various Arab countries. This comparison highlights significant disparities between individual consumption levels and the broader population averages, revealing underlying cultural, legal, and social influences on alcohol use.

In Lebanon and Tunisia, the average alcohol consumption among drinkers is high, ranging from 23 to 30 liters. These countries have more liberal attitudes towards alcohol, reflected in the higher averages. The total population averages in these countries are also significant, showing that a notable portion do drink.

Countries like Sudan, Bahrain, and Qatar show moderate levels of alcohol consumption among drinkers, with averages between 21 and 27 liters. These countries have a mix of conservative and liberal attitudes towards alcohol, which is reflected in the mid-range consumption figures. The total population averages are lower, indicating that while those who drink do so moderately, a substantial portion of the population abstains.

In contrast, countries such as Kuwait, Libya, and Mauritania have the lowest average alcohol consumption among drinkers, all below 5 liters. These nations have strict regulations and cultural taboos against alcohol, resulting in very low consumption rates. The total population averages are near zero, reflecting widespread abstinence from alcohol.

Iraq, Somalia, Jordan, Oman, Morocco, Algeria, Syria, and Djibouti exhibit varying levels of alcohol consumption among drinkers, typically ranging from 5 to 24 liters. These countries have moderate to strict regulations regarding alcohol, contributing to the differences in consumption rates. The total population averages in these countries remain low, consistent with broader cultural norms that discourage alcohol use.

The United Arab Emirates stands out with the highest average alcohol consumption among drinkers, exceeding 32 liters. This substantial consumption rate reflects the availability and acceptance of alcohol within certain social groups, despite the conservative cultural backdrop. The total population average is also relatively high compared to other countries, indicating a larger segment of the population partakes in alcohol consumption. A new report by the World Health Organization (WHO) has found that drinkers in the UAE are consuming almost twice the global average of alcohol per year, placing them in the highest health risk categories. The consumption rate in the UAE is 32.8 liters of pure alcohol equivalent per person annually, compared to the global average of 17 liters per person. This rate surpasses those of traditionally heavy-drinking Western nations such as the UK, Ireland, the US, and Australia. When considering the entire UAE population aged 15 years or older, including non-drinkers, the average alcohol consumption was 4.3 liters per capita between 2008-2010, up from 2.5 liters per capita between 2003-2005. (Thomas, 2014)

The chart underscores the significant disparity between the consumption habits of those who drink and the overall population averages. In many Arab countries, stringent laws and cultural norms lead to low overall consumption rates, but among those who do drink, the consumption can be quite high. This dichotomy highlights the complex interplay between legal restrictions, cultural attitudes, and individual behaviors regarding alcohol use in the Arab world.

1.6 United Arab Emirates Background

1.6.1 Geographics

The United Arab Emirates (UAE), located in the Middle East, was established in 1971 as a federation comprising seven emirates: Abu Dhabi, Dubai, Sharjah, Ajman, Umm Al Quwain, Fujairah, and Ras Al Khaimah. Covering a total area of about 83,600 square kilometers (32,278

square miles) (Profile, 2007), the UAE's formation marked a significant political development, bringing these emirates under a unified national structure while allowing them to maintain individual autonomy.

The highest legislative and executive authority in the UAE is vested in the Federal Supreme Council, which includes representatives from each emirate. This council is responsible for shaping national policies, enacting federal laws, and ensuring their implementation. The President and Vice President of the UAE are selected from among the council members, traditionally from Abu Dhabi and Dubai, reflecting their considerable influence within the federation.

Despite the central authority of the Federal Supreme Council, individual emirates retain significant powers, particularly in areas such as natural resources, internal security, and economic management. For instance, it is illegal in Sharjah to consume alcohol while it is legal in the remaining six emirates with rules implemented for its consumption.

1.6.2 Population

The population of the United Arab Emirates (UAE) has experienced remarkable growth since its establishment. In 1971, the population was approximately 344,512. By 2022, this number had surged to an estimated 9.4 million, marking an extraordinary increase. This dramatic growth can be attributed largely to the influx of expatriates, who make up over 88% of the population, originating from more than 200 different countries (Gaber, 2022; World Bank, 2021).

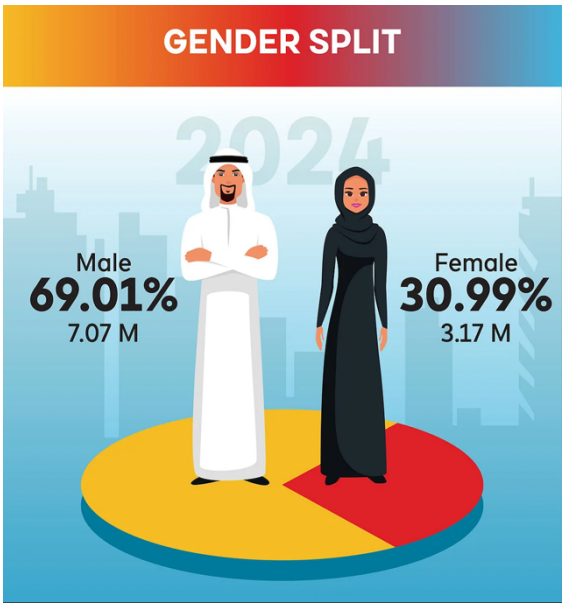
In 2023, the UAE's population continued to grow, reaching 10.17 million, which reflects a 0.89% increase compared to the previous year. Of this total, around 9 million individuals are expatriates, representing 88.52% of the population. This high percentage of expatriates underscores the UAE's position as a global hub for business, tourism, and employment. The diverse expatriate community includes individuals from Asia, Europe, Africa, and the Americas, contributing to the UAE's multicultural society. In contrast, the nationals of the UAE, known as

Emiratis, make up only about 1.48% of the total population. The significant presence of expatriates has also influenced the cultural and social landscape of the UAE.

1.6.3 Gender Split

The demographic composition of the United Arab Emirates (UAE) reveals a notable gender imbalance, heavily skewed towards males. Approximately 69.01% of the population, which equates to roughly 7.07 million individuals, are males. This significant male population plays a crucial role in various aspects of the UAE's social and economic landscape, particularly in its labor force and expatriate communities (Global Media Insight, 2023).

The high proportion of males is largely driven by patterns of migration and employment opportunities. The UAE has attracted a vast number of expatriate workers, predominantly males, to support its rapid economic growth and development. These expatriates, mainly from South Asia, the Middle East, and other regions, are employed in various sectors such as construction, oil and gas, hospitality, and services. The demand for male labor in these physically demanding and labor-intensive industries contributes to the gender disparity.



Females constitute about 30.99% of the UAE's population, totaling approximately 3.17 million residents. This lower female-to-male ratio is influenced by several factors, including the nature of employment opportunities and cultural norms. While there are significant numbers of female expatriates in the UAE, they are often employed in specific sectors such as healthcare, education, and domestic services. Additionally, many female expatriates accompany male

workers as family members, contributing to the overall demographic makeup (Global Media Insight, 2023).

The gender distribution in the UAE also reflects the broader societal and cultural dynamics. Traditional gender roles and expectations can influence migration patterns, with males more likely to migrate for work. Moreover, government policies aimed at attracting skilled labor and professionals have resulted in a diverse expatriate community, further impacting the gender ratio.

Overall, the demographic composition of the UAE, with its significant male majority, highlights the interplay between economic needs, migration trends, and cultural factors. This unique gender distribution has profound implications for the country's social and economic landscape, shaping its labor market, expatriate communities, and development trajectory (Global Media Insight, 2023).

1.6.4 Nationalities of Residence

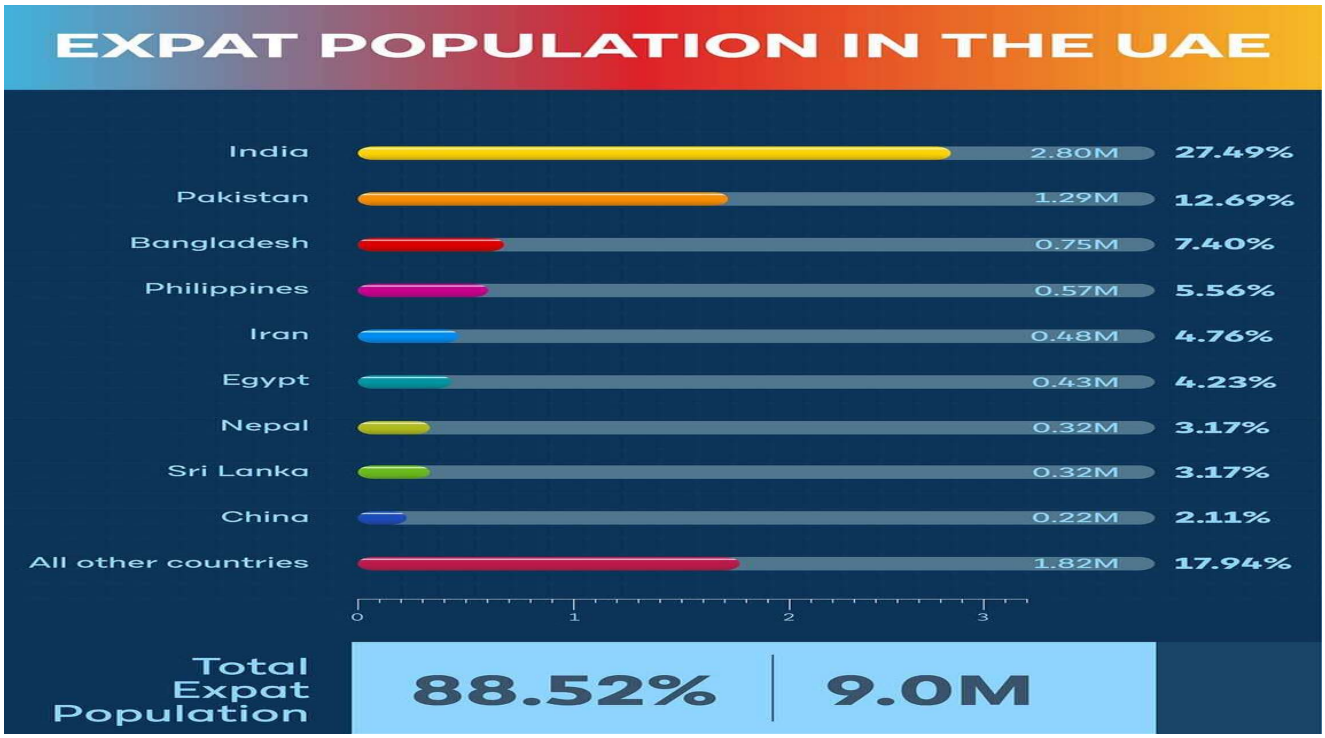


Figure 3. Expat population in UAE according to nationalities. Retrieved from https://www.globalmediainsight.com/blog/uae-population-statistics/

Figure 3 illustrates the diverse expatriate population in the United Arab Emirates (UAE), highlighting the significant contributions from various countries. Among these expatriate communities, India represents the largest group, comprising 27.49% of the total expat population. Pakistan follows as another substantial contingent, accounting for 12.69%. Bangladesh, the Philippines, Iran, Egypt, Nepal, Sri Lanka, and China make up notable percentages as well, ranging from 2.4% to 7.4%. Additionally, individuals from various other countries, collectively constituting 17.94% of the expat population, contribute to the rich cultural fabric and workforce diversity in the UAE. This demographic mosaic underscores the cosmopolitan and inclusive nature of the UAE, where people from around the world come together to live and work in this dynamic Middle Eastern nation.

Among Arab countries, Egypt is considered to have the highest Arab expat population with 4.23% of the total expat population living in the UAE. All the remaining Arab nationalities living in the country count altogether 17.94% of the total expat population according to the graph presented (Global Media Insight, 2023).

The socioeconomic landscape has transformed significantly since the UAE's inception, with citizens transitioning from a nomadic and secluded lifestyle to one marked by urban affluence. The influence of the expatriate community, diverse in cultures and traditions, has played a notable role in shaping society (Sarhan, 1995).

1.6.5 Religions

While Islam is the predominant religion in the UAE, with approximately 76.9% of the population adhering to it, it's essential to acknowledge the country's diverse and cosmopolitan nature. The UAE is home to a significant expatriate community, which contributes to a rich tapestry of religious beliefs. In addition to Muslims, there are thriving Christian communities (9%), as well as followers of Hinduism and Buddhism (10%), and various other religions (5%) (Global Media Insights, 2023).

Operating under Islamic principles and Sharia law, the UAE strictly prohibits alcohol and other illicit substances for Muslims. However, the country's burgeoning expatriate population and its emergence as a global tourism hotspot have prompted revisions in alcohol policies (Ahmed et al., 2015). Until 2020, expatriates were required to possess licenses for purchasing and consuming alcohol from authorized providers. Recent amendments to the Federal Criminal Code, following a judgment by the Union Supreme Court, have led to adjustments in alcohol regulations to accommodate societal changes (United Arab Emirates Ministry of Justice, 2022).

The court's decision also emphasizes that if an emirate's local law prohibits alcohol consumption and has jurisdiction, this law supersedes the Federal Criminal Code. Consequently, residents in six emirates no longer necessitate licenses to consume alcohol, while Sharjah maintains a strict prohibition. The legal drinking age of 21 and a zero-tolerance policy for drinking and driving, public intoxication, and alcohol provision to Muslims have been retained.

According to the WHO Status Report on Alcohol and Health in 2018 (World Health Organization, 2019), per capita pure alcohol consumption in the UAE increased from 3.1 liters in 2010 to 3.6 liters in 2016, ranking it among the highest in the Arab World.

1.6.6 Income Levels of Residence

The average income in the United Arab Emirates (UAE) can vary widely depending on factors such as occupation, experience, industry, and location within the country. Percentiles provide insights into income distribution by examining values at various points along the spectrum. According to World Salaries (2023), in the context of the average salary in the United Arab Emirates, approximately 25% of the population earns less than 125,100 AED, indicating the lower end of the income distribution. Conversely, about 75% of the population earns more than 125,100 AED, signifying the majority of earners surpass this income threshold. Furthermore, around 75% of the population earns less than 610,100 AED, representing the bulk of income earners. Meanwhile, approximately 25% of the population earns more than 610,100 AED, highlighting the upper segment of the income distribution.

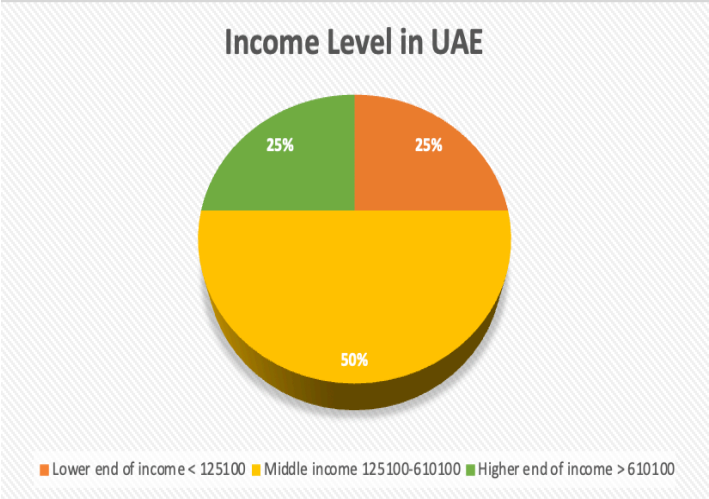


Figure 4. Income Level in UAE

These percentiles allow us to better understand how incomes are distributed across the population, with one set indicating the lower-income range and the other showcasing the upper-income range. According to these results, it could be possible to classify incomes in UAE for this paper as **lower 25% income** (with income less than 125,100 AED) **middle 50%** (with income ranging from 125,100 AED to 610,100 AED), and **higher 25%** (with income more than 610,100AED)

Given that the United Arab Emirates (UAE) encompasses all the factors that play a role in the variance of alcohol consumption as examined in the current study—including gender differences, income disparities, religious diversity, and the presence of a diverse array of nationalities—it becomes imperative to delve into a comprehensive analysis of alcohol consumption patterns within the UAE while considering the influence of these multifaceted factors. This holistic exploration will allow us to better understand how these variables intersect and impact alcohol consumption trends in the country.

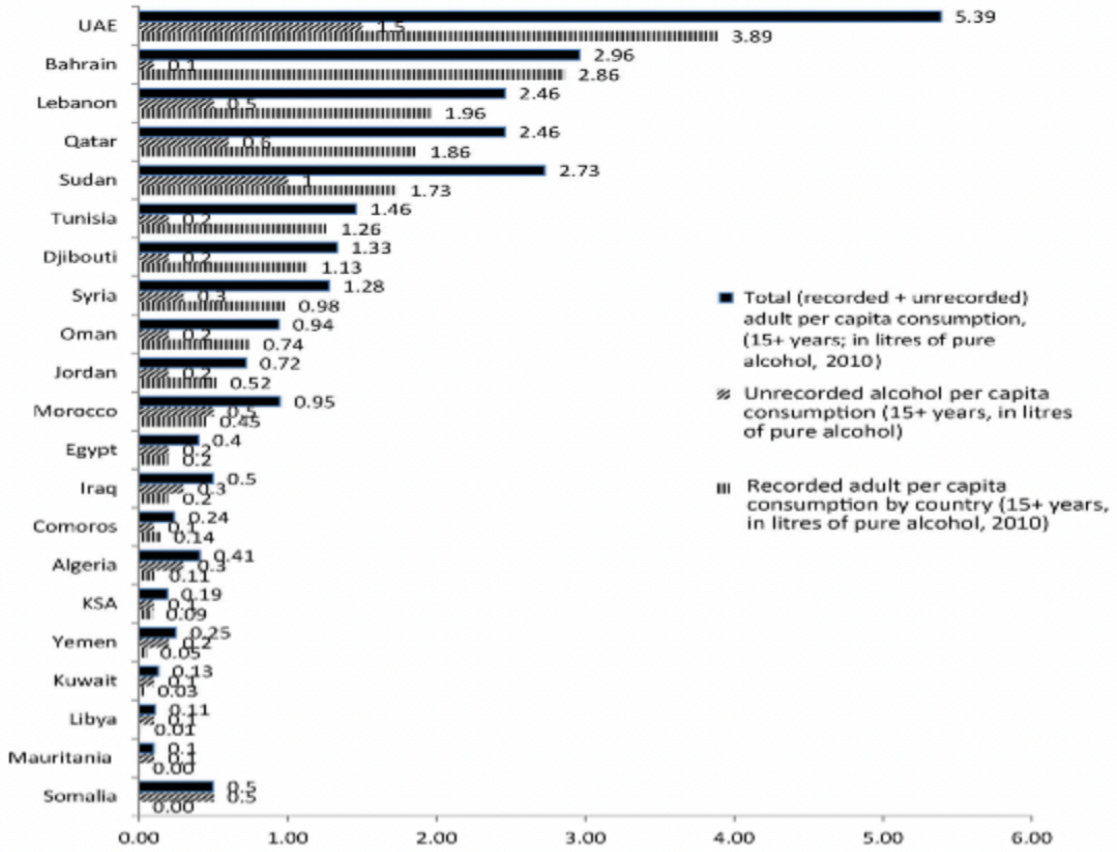


Figure 5. Depicts the recorded, unrecorded, and total alcohol per capita consumption for individuals aged 15 and older (measured in liters of pure alcohol) based on 2010 estimates. This data was sourced from the Global Information System on Alcohol and Health, part of the World Health Organization. The information can be accessed through the following links:

http://apps.who.int/gho/data/node.main.A1034?lang=en and http://apps.who.int/gho/indicatorregistry/App_Main/View_indicator.aspx?iid=462.

1.6.7 Alcohol Consumption Among Arabs

The most recent data from the Global Information System on Alcohol and Health (GISAH) for 2010, as illustrated in Figure 5, indicate that the United Arab Emirates (UAE) had the highest recorded adult per capita alcohol consumption among Arab countries, with a rate of 3.89 liters. This figure is derived from official records that track alcohol consumption through production, export, import, and sales/taxation data. However, these records do not capture the full extent of alcohol consumption due to unrecorded production and consumption, which occurs without governmental oversight.

Unrecorded alcohol consumption includes home-brewed or informally produced alcoholic beverages that are not subject to official monitoring. This segment of alcohol consumption is significant, accounting for nearly 30% of total worldwide adult alcohol use. Such unrecorded consumption is particularly relevant in regions where strict regulations and cultural norms limit the availability and reporting of alcohol.

In the context of the UAE, unrecorded per capita alcohol consumption is notably high, at 1.5 liters. This reflects the presence of a substantial informal market for alcohol, driven by various factors including the high demand for alcohol among expatriates and the restrictive legal environment. When combining both recorded and unrecorded figures, the total per capita consumption of pure alcohol in the UAE for individuals aged 15 and older reaches 5.39 liters. This positions the UAE as the country with the highest alcohol consumption among Arab nations.

The high levels of both recorded and unrecorded alcohol consumption in the UAE can be attributed to several factors. The country's large expatriate population, which hails from diverse

cultural backgrounds, contributes to a higher demand for alcohol. Additionally, the relatively liberal stance of emirates like Dubai and Abu Dhabi towards alcohol sales and consumption, particularly in designated areas such as hotels and licensed venues, supports higher consumption rates.

Overall, the UAE's leading position in alcohol consumption among Arab countries underscores the unique social and economic factors influencing alcohol use in the region. It highlights the need for comprehensive strategies to address both recorded and unrecorded alcohol consumption.

2.0 Methodology

2.1 Questionnaire/AUDIT Test

The Alcohol Use Disorders Identification Test (AUDIT), developed by the World Health Organization (WHO), is a widely recognized tool for identifying risky or harmful alcohol use, as well as alcohol dependence and abuse (Babor et al., 1992). When the AUDIT was first developed, its primary aim was to identify individuals engaging in hazardous and harmful alcohol consumption, rather than solely those with alcohol dependence. The selection of the questions was based on their correlation with alcohol intake rather than their ability to diagnose alcohol dependence (Saunders & Aasland, 1987). This method allows for the early detection of excessive drinking, which can help address medical conditions that may arise from such behavior. Additionally, it facilitates early intervention to prevent the progression from excessive drinking to alcohol dependence. While the AUDIT does include questions related to symptoms of dependence, it is crucial to recognize how these questions are intended to function within the broader context of the tool.

2.1.1 AUDIT Questions

AUDIT is a 10-item questionnaire, which can be split into three sections in terms of assessing the individual's alcohol intake. The first three questions are designed to assess the quantity and frequency of alcohol consumption. These questions are crucial because they help determine the pattern of alcohol use, which is a significant indicator of potential alcohol-related problems.

Questions 4–6 of the AUDIT assess aspects such as impaired control over drinking, the increasing significance of alcohol in one's life, and drinking in the morning. The responses to these questions give clinicians valuable insights into potential symptoms of alcohol dependence. These responses may indicate the need for further diagnostic evaluation by a trained professional. However, it is important to note that while a patient's acknowledgment of these symptoms might suggest possible dependence, the AUDIT itself is not a diagnostic tool. A formal diagnosis of alcohol dependence requires the use of a validated diagnostic interview, such as the Composite International Diagnostic Interview, or an assessment by a trained specialist (Babor et al., 2001).

Questions 7–10 of the AUDIT focus on instances where alcohol use has led to physical harm. While a patient's acknowledgment of such experiences doesn't solely establish a diagnosis of harmful alcohol use, as opposed to hazardous use, these responses can play a key role in guiding an effective brief intervention. They offer clinicians insights into aspects of their drinking that patients may be dissatisfied with, potentially motivating them to consider reducing their alcohol intake. Additionally, questions about being injured due to drinking or having others express concern include a "lifetime" response option ("Yes, but not in the past year"). This option helps identify individuals with past alcohol problems, which can inform intervention or referral decisions, including the potential suspicion of relapse after an episode of alcohol dependence. These questions also capture social and physical harms that might not directly correlate with the

quantity of alcohol consumed. For instance, younger drinkers might be more prone to harm than older drinkers due to lower alcohol tolerance.

The AUDIT was specifically designed to assess three key areas: typical alcohol consumption, signs of potential dependence that can guide counseling and referrals to specialized care, and evidence of harm or problems that can help in advising patients to cut back or stop drinking. While recognizing excessive consumption is crucial for identifying hazardous or harmful use, all three domains are vital for determining a patient's risk level and providing appropriate counseling to reduce that risk (Higgins-Biddle & Babor, 2018)

2.1.2 AUDIT Scoring

Questions 1 to 8 on the AUDIT are rated on a 5-point scale, ranging from 0 to 4, while questions 9 and 10 are scored 0, 2, and 4, respectively. Scores on the AUDIT range from 0 to 40. A score of 0 represents an abstainer who has never experienced alcohol-related problems. According to World Health Organization (WHO) guidelines, a score of 1 to 7 suggests low-risk alcohol consumption. Scores between 8 and 14 indicate hazardous or harmful drinking, while a score of 15 or higher suggests a likely alcohol dependence, indicating moderate to severe alcohol use disorder. Consequently, the maximum score achievable on the AUDIT is 40 (Saunders et al., 1993).

The original WHO study found that the term "drink" in questions 2 and 3 of the AUDIT referred to alcohol amounts ranging from 8 to 13 grams. If a standard drink is defined as a quantity outside this range (e.g., 20 grams), it is recommended to adjust the response categories to reflect this difference.

Notably, various studies have validated the AUDIT, demonstrating improved sensitivity and specificity with different cut-off points (Adewuya, 2005; Bradley et al., 2003; Dawson et al., 2005a; Dybek et al., 2006; Gache et al., 2005; Knight et al., 2003; Pal et al., 2004; Pérula et al.,

2005). Additionally, recent research indicates that different cut-off scores may be needed for male and female patients (Reinert & Allen, 2002, 2007).

In this study, the AUDIT scores are categorized as follows: a score of 7 or below indicates abstinence or low-risk drinking; scores between 8 and 14 suggest hazardous alcohol use; scores from 15 to 19 indicate harmful use, and scores ranging from 20 to 40 suggest possible alcohol dependence. An AUDIT score of 8 or higher is associated with risky drinking behaviors, which may encompass hazardous or harmful alcohol use or potential dependence, as well as DSM-IV Alcohol Use Disorders (Bergman & Källmén, 2002; Heather et al., 2011).

2.1.3 AUDIT Languages

Although initially intended for primary care settings, the AUDIT has been validated in a variety of health care and community environments in recent studies (Lima et al., 2005). The test has been translated into multiple languages and utilized in numerous countries, including Nigeria (Adewuya, 2005), India (Carey et al., 2003; Pal et al., 2004), Brazil (Lima et al., 2005), Switzerland (Bergman & Källmén, 2002; Selin, 2003), Spain (Gómez et al., 2005; Pérula et al., 2005), Germany (Bischof et al., 2005; Dybek et al., 2006; Neumann et al., 2009; Rumpf et al., 2003), Vietnam (Giang et al., 2005), China (Chen et al., 2004, 2005; Tsai et al., 2005), and France (Gache et al., 2005). However, few studies have examined these non-English versions' validity, reliability, and factorial structure, which may affect cross-study comparability.

Azzi et al. conducted a survey in 2023 to validate the Arabic version of the Alcohol Use Disorder Identification Test (AUDIT) scale using a random sample of 789 Lebanese adult participants. The Arabic version of the AUDIT scale demonstrated strong internal consistency, with McDonald’s omega values of .88 and .89. These results align with previous research on the psychometric properties of the AUDIT scale, where Cronbach’s alpha values ranged between 0.81 and 0.93 (de Meneses-Gaya et al., 2009). Similarly, Cronbach’s alpha in other validation studies

showed values of 0.87 in French, 0.87 in Portuguese, 0.93 in Spanish, and 0.81 in Swedish (Gache et al., 2005; Alvarado et al., 2009; Moretti-Pires & Corradi-Webster, 2011; Bergman & Kallmen, 2003). Additionally, a study by Hallit et al. (2020) validated the Arabic version of the AUDIT scale for use among Lebanese teenagers, reporting a Cronbach's alpha of 0.978, which is consistent with findings in the broader Lebanese population (Hallit et al., 2020). Therefore, the Arabic version of the AUDIT scale is a valuable tool for assessing problematic alcohol use in the Lebanese population.

In this study, the AUDIT survey was made available in both English and Arabic to accommodate the diverse linguistic background of participants in the United Arab Emirates (UAE). The UAE is a multicultural nation with a significant population of Arabic-speaking nationals, alongside a large expatriate community that primarily communicates in English. Recognizing this linguistic diversity, the researchers provided the survey in Arabic to ensure that native Arabic speakers could fully comprehend the questions and provide accurate responses.

For participants who might struggle with the nuances of English, offering the survey in their native language was crucial. This approach not only enhanced the inclusivity of the study but also improved the reliability of the data by reducing the risk of misinterpretation that could arise from language barriers. Ensuring that participants could respond in the language they were most comfortable with was vital for capturing authentic self-reported data on alcohol consumption, dependence, and related issues. This method underscores the importance of cultural and linguistic considerations in research, particularly in a setting as diverse as the UAE.

2.2 Participants

In this study, a random sample of 285 participants residing in the United Arab Emirates (UAE) was selected between August 2023 and January 2024. Although data collection occurred in two specific emirates, Dubai and Ajman, the participants represented residents from across the

UAE, not just those living in these two emirates. The survey was conducted at five different locations in each of the two emirates, specifically targeting a diverse range of customers in various restaurants, pubs, and bars. These locations were strategically chosen based on their ratings, with two 5-star, two 4-star, and one 3-star establishments selected in each emirate to ensure the inclusion of participants from different income levels, religious backgrounds, and nationalities.

All participants were legally adults, aged 18 years or older, in compliance with UAE law, which prohibits individuals under 18 from entering venues that sell alcohol. The study specifically targeted individuals who consumed alcohol, ensuring that only those who met this criterion were eligible to participate. Additionally, the research focused on participants of Arab nationality, despite the diverse range of nationalities residing in the UAE. This exclusion was intentional, as the primary objective of the study was to assess alcohol consumption patterns specifically among Arabs living in the UAE. By narrowing the participant pool to Arab nationals who consume alcohol, the study aimed to gather more relevant and culturally specific data on alcohol use within this demographic. This approach helped ensure that the findings would be more applicable to understanding alcohol consumption trends among Arab residents in the UAE. Individuals who declined to participate in the survey were excluded from the study.

The data collection process was carried out through personal interviews with trained students who had prior experience in data collection from previous studies. This approach was designed to minimize interrater variability and ensure the highest possible quality of data collection. By utilizing experienced data collectors and selecting a wide range of locations, the study aimed to gather a representative and comprehensive sample of the UAE's diverse population.

2.3 Procedure

Participants in the study were informed that their participation was entirely voluntary and that the questionnaire would be administered anonymously. They were assured that all information

provided would be treated with the utmost confidentiality, ensuring that their data and responses would remain secure and unidentifiable. This assurance was crucial in encouraging honest and accurate responses.

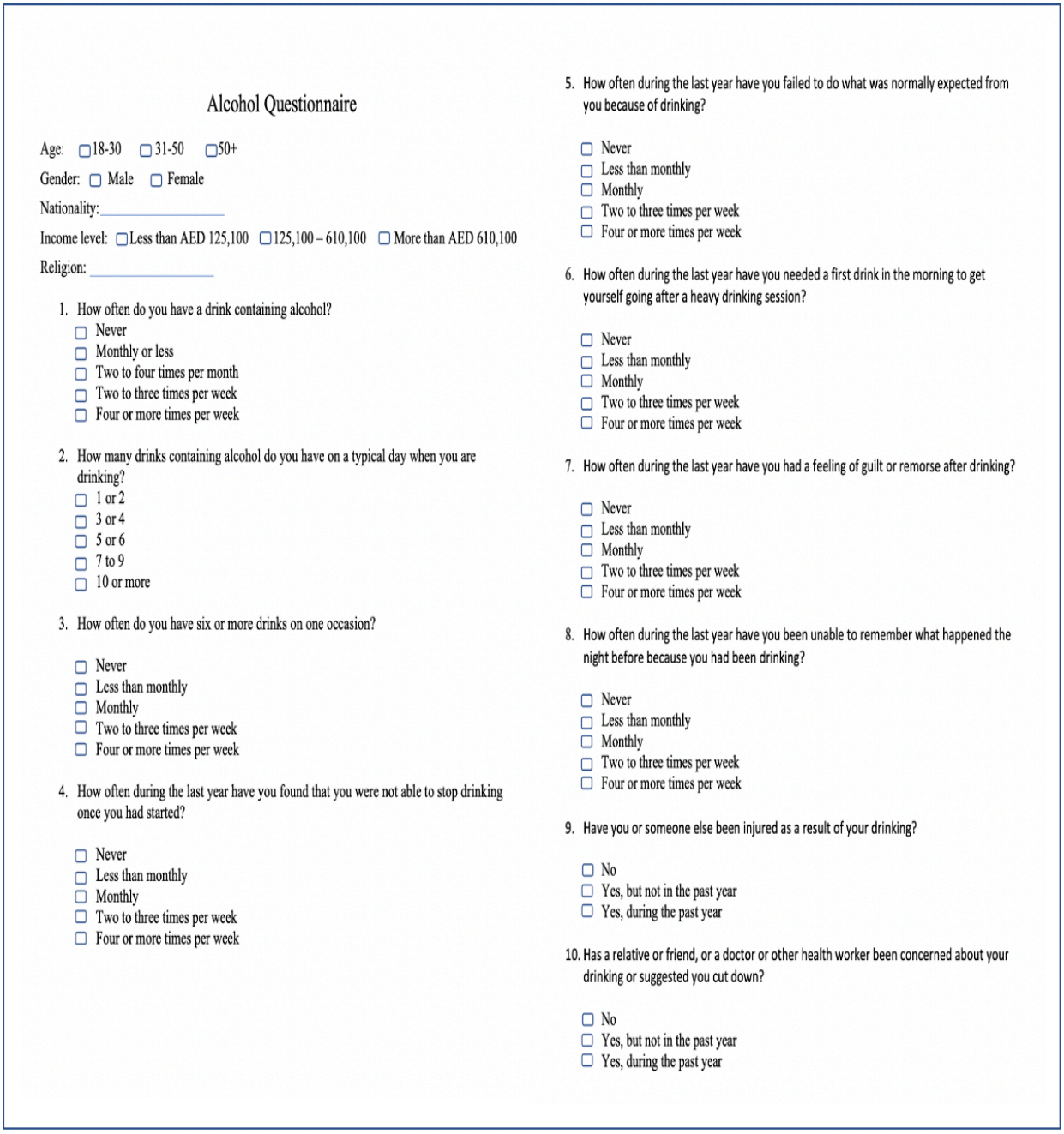
The data collection process was carried out directly at the customers' tables in the selected venues. Trained students, who were well-versed in data collection techniques, approached participants in a respectful and non-intrusive manner. They explained the purpose of the study, the confidentiality measures in place, and the importance of the participants' contributions to the research. The students were careful to create a comfortable and private environment for participants to complete the questionnaire, allowing them to answer freely without any external pressure.

By collecting data in this manner, the study aimed to capture a real-time and candid snapshot of the participants' alcohol consumption behaviors and attitudes. This approach also helped to increase response rates and ensure the reliability of the data collected. The training and experience of the students conducting the interviews were vital in maintaining the consistency and quality of the data across different locations and participants.

2.4 Instruments

The questionnaire in this study was divided into two key sections to gather comprehensive data. The first section focused on sociodemographic characteristics, including age, gender, nationality, religion and income level. This information was crucial for understanding how demographic factors might influence alcohol consumption patterns among Arab participants in the United Arab Emirates, a country with a diverse population. By examining variables like age, gender, religion, and nationality, the study aimed to identify trends and potential differences in drinking behaviors across different groups.

The second section utilized the Alcohol Use Disorders Identification Test (AUDIT) to assess participants' alcohol consumption. This part of the questionnaire included 10 questions designed to identify hazardous or harmful drinking practices and signs of potential alcohol dependence. AUDIT questions and their Arabic translation are presented in Tables 1 & 2.



Alcohol Questionnaire

Age: ☐18-30 ☐31-50 ☐50+

Gender: ☐ Male ☐ Female

Nationality:_____

Income level: ☐Less than AED 125,100 ☐125,100 – 610,100 ☐ More than AED 610,100

Religion: _____

1. How often do you have a drink containing alcohol?
   - ☐ Never
   - ☐ Monthly or less
   - ☐ Two to four times per month
   - ☐ Two to three times per week
   - ☐ Four or more times per week

2. How many drinks containing alcohol do you have on a typical day when you are drinking?
   - ☐ 1 or 2
   - ☐ 3 or 4
   - ☐ 5 or 6
   - ☐ 7 to 9
   - ☐ 10 or more

3. How often do you have six or more drinks on one occasion?
   - ☐ Never
   - ☐ Less than monthly
   - ☐ Monthly
   - ☐ Two to three times per week
   - ☐ Four or more times per week

4. How often during the last year have you found that you were not able to stop drinking once you had started?
   - ☐ Never
   - ☐ Less than monthly
   - ☐ Monthly
   - ☐ Two to three times per week
   - ☐ Four or more times per week

5. How often during the last year have you failed to do what was normally expected from you because of drinking?
   - ☐ Never
   - ☐ Less than monthly
   - ☐ Monthly
   - ☐ Two to three times per week
   - ☐ Four or more times per week

6. How often during the last year have you needed a first drink in the morning to get yourself going after a heavy drinking session?
   - ☐ Never
   - ☐ Less than monthly
   - ☐ Monthly
   - ☐ Two to three times per week
   - ☐ Four or more times per week

7. How often during the last year have you had a feeling of guilt or remorse after drinking?
   - ☐ Never
   - ☐ Less than monthly
   - ☐ Monthly
   - ☐ Two to three times per week
   - ☐ Four or more times per week

8. How often during the last year have you been unable to remember what happened the night before because you had been drinking?
   - ☐ Never
   - ☐ Less than monthly
   - ☐ Monthly
   - ☐ Two to three times per week
   - ☐ Four or more times per week

9. Have you or someone else been injured as a result of your drinking?
   - ☐ No
   - ☐ Yes, but not in the past year
   - ☐ Yes, during the past year

10. Has a relative or friend, or a doctor or other health worker been concerned about your drinking or suggested you cut down?
    - ☐ No
    - ☐ Yes, but not in the past year
    - ☐ Yes, during the past year

Table 1. AUDIT Questionnaire English language version.

استبيان الكحول

العمر: ☐30 – 18 ☐50 – 31 ☐51+

الجنس: ☐ذكر ☐انثى

الجنسية: _____

مستوى الدخل: ☐ اقل من درهم 125,100 ☐125,100 – 610,100 ☐ اكثر من درهم 610,100

الديانة: _____

١. كم مرة تتناول مشروباً يحتوي على الكحول؟

☐ ابداً
☐ شهرياً او اقل
☐ مرتين الى أربع مرات شهرياً
☐ مرتين الى ثلاث مرات في الأسبوع
☐ أربع مرات او أكثر في الأسبوع

٢. ما هو عدد المشروبات التي تحتوي على الكحول التي تتناولها في اليوم العادي عندما تشربها؟

☐ 1 او 2
☐ 3 او 4
☐ 5 او 6
☐ 7 الى 9
☐ 10 او أكثر

٣. كم مرة تتناول 6 مشروبات او أكثر في مناسبة واحدة؟

☐ ابداً
☐ اقل من شهرياً
☐ شهرياً
☐ مرتين الى ثلاث مرات في الأسبوع
☐ أربع مرات او أكثر في الأسبوع

٦. كم مرة خلال العام الماضي كنت بحاجة الى مشروب في الصباح لتتمكن من الاستمرار بعد جلسة شرب كثيفة؟

☐ ابداً
☐ اقل من شهرياً
☐ شهرياً
☐ مرتين الى ثلاث مرات في الأسبوع
☐ أربع مرات او أكثر في الأسبوع

٧. كم مرة شعرت فيها بالذنب او الندم خلال العام الماضي بعد الشرب؟

☐ ابداً
☐ اقل من شهرياً
☐ شهرياً
☐ مرتين الى ثلاث مرات في الأسبوع
☐ أربع مرات او أكثر في الأسبوع

٨. كم مرة خلال العام الماضي لم تتمكن من تذكر ما حدث في الليلة السابقة لأنك كنت تشرب الخمر؟

☐ ابداً
☐ اقل من شهرياً
☐ شهرياً
☐ مرتين الى ثلاث مرات في الأسبوع
☐ أربع مرات او أكثر في الأسبوع

٩. هل تعرضت انت او أي شخص آخر للإصابة نتيجة شرب الخمر؟

☐ لا
☐ نعم، ولكن ليس في العام الماضي
☐ نعم خلال العام الماضي

١٠. هل شعر قريب او صديق او طبيب او عامل صحي آخر بالقلق بشأن شربك للخمر او اقتراح عليك التقليل من شرب الخمر؟

☐ لا
☐ نعم، ولكن ليس في العام الماضي
☐ نعم خلال العام الماضي

Table 2. AUDIT Questionnaire Arabic language version.

2.5 Ethics approval and Consent to participate

The questionnaires were distributed to participants only after obtaining formal permission from the managers of the respective establishments. Before administering the survey, the objective of the study was clearly explained to each participant to ensure they fully understood the purpose and importance of the research. Participation in the survey was entirely voluntary, with no pressure or obligation placed on the individuals. Each participant was also required to provide written informed consent, confirming their willingness to take part in the study and their understanding that their participation was voluntary. This process ensured that the participants were fully aware of their rights and the nature of the study, fostering an environment of transparency and ethical research practices.

2.6 Statistical Analyses

Data were processed using the IBM Statistical Package for Social Sciences (SPSS) statistics 27. The chi-square test was employed to compare qualitative variables. The correlation between quantitative variables was assessed using Pearson's correlation coefficient (r). Additionally, a multivariate logistic regression analysis was conducted to explore the relationship between hazardous alcohol use, potential alcohol dependence, and selected predictors. Odds ratios (OR) along with their 95% confidence intervals (CI) were calculated to assess the strength of association between the dependent variable (hazardous alcohol use to possible dependence) and various independent variables.

The regression analysis included variables that showed significant associations with a positive AUDIT screen (score ≥ 8) in the univariate analysis. These variables were age, gender, nationality, income level, and religion. The results were considered statistically significant if the p-value was 0.05 or less. This approach enabled a thorough examination of the factors contributing

to hazardous alcohol use and potential dependence, offering valuable insights for targeted interventions.

3.0 Results

This chapter presents and interprets the analysis of the survey data. The statistical analysis and data processing were performed using IBM SPSS Statistics 27. The chapter begins with a descriptive summary of the demographic characteristics of the participants, followed by a descriptive summary of their responses to the survey questions. To address the main research question, the chi-square test of independence was applied.

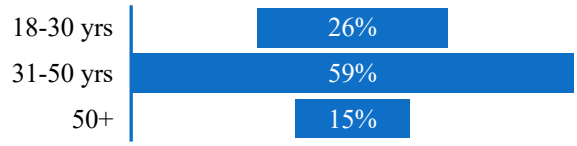
3.1 Sample Demographics

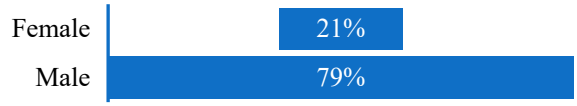
In the present study, 286 participants provided valid and complete survey responses. As detailed in Table 1, the majority of the sample consisted of male participants (79.0%), while females accounted for 21.0%. The age distribution shows that most participants (59.1%) were between 31 and 50 years old, followed by 25.5% in the 18-30 age group. Participants over 50 years old comprised the smallest portion of the sample, representing 15.4%.

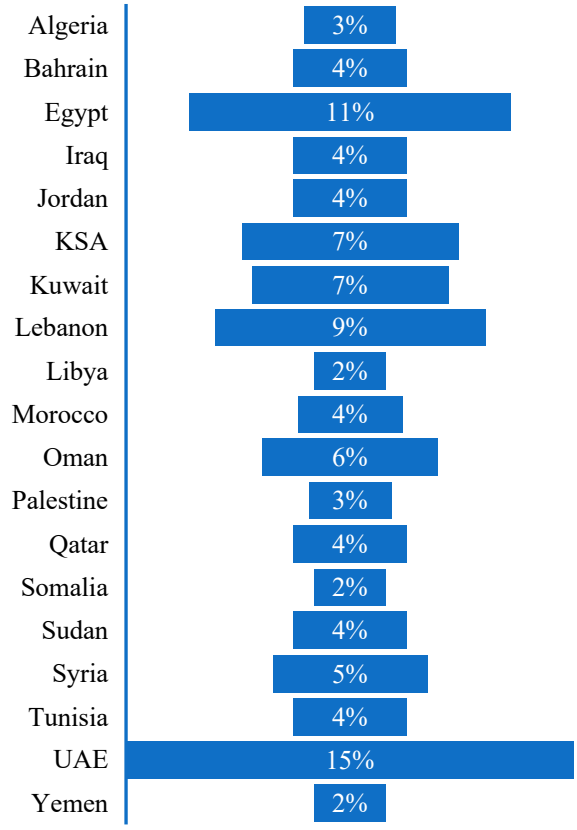
The majority of participants in the study were from the United Arab Emirates (UAE) (15.0%), followed by Egypt (10.8%), Lebanon (9.1%), Saudi Arabia (7.3%), Kuwait (6.6%), Oman (5.9%), and Syria (5.2%). Together, these nationalities comprised 60.1% of the sample. Regarding income distribution, nearly half of the participants (47.2%) fell within the middle-income bracket of 125,100-610,100 AED. Additionally, a significant portion (32.5%) belonged to the lower-income category, earning less than 125,100 AED, while 20.3% were in the higher-income category, with earnings exceeding 610,100 AED.

In terms of religion, Muslims represented the vast majority of the sample (83.2%), while Christians represented only 16.8%.

Demographics	n	%	Chart
Age			
18-30 years	73	25.5%	
31-50 years	169	59.1%	
50+ years	44	15.4%	
Gender			
Female	60	21.0%	
Male	226	79.0%	
Nationality			
Algeria	9	3.1%	
Bahrain	11	3.8%	
Egypt	31	10.8%	
Iraq	11	3.8%	
Jordan	11	3.8%	
KSA	21	7.3%	
Kuwait	19	6.6%	
Lebanon	26	9.1%	
Libya	7	2.4%	
Morocco	10	3.5%	
Oman	17	5.9%	
Palestine	8	2.8%	
Qatar	11	3.8%	
Somalia	7	2.4%	
Sudan	11	3.8%	
Syria	15	5.2%	
Tunisia	11	3.8%	
UAE	43	15.0%	







Yemen	7	2.4%
Income Level		
Less than 125,100 AED	93	32.5%
125,100 – 610,100 AED	135	47.2%
More than 610,100 AED	58	20.3%
Religion		
Christian	48	16.8%
Muslim	238	83.2%

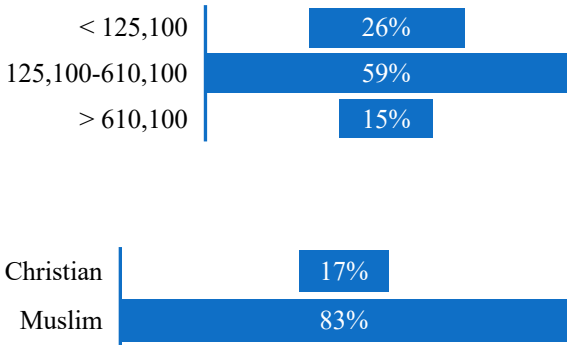


Table 3. Demographic Descriptive Summary of Participants [N=286]

3.2 Response Descriptive Summary

A descriptive summary of the alcohol consumption questions is provided in Table 4, which includes the counts (n) and percentages (%) for each of the 10 response categories. Following the table, a detailed explanation of the descriptive analysis is presented.

Alcohol Consumption	n	%
1. How often do you have a drink containing alcohol?		
Monthly or less	79	27.6%
Two to four times per month	140	49.0%
Two to three times per week	45	15.7%
Four or more times per week	22	7.7%
2. How many drinks containing alcohol do you have on a typical day when you are drinking?		
1 or 2	36	12.6%
3 or 4	118	41.3%
5 or 6	100	35.0%
7 to 9	31	10.8%

Alcohol Consumption	n	%
10 or more	1	.3%
3. How often do you have six or more drinks on one occasion?		
Never	98	34.3%
Less than monthly	107	37.4%
Monthly	67	23.4%
Two to three times per week	14	4.9%
4. How often during the last year have you found that you were not able to stop drinking once you had started?		
Never	73	25.5%
Less than monthly	124	43.4%
Monthly	86	30.1%
Two to three times per week	3	1.0%
5. How often during the last year have you failed to do what was normally expected from you because of drinking?		
Never	86	30.1%
Less than monthly	168	58.7%
Monthly	32	11.2%
6. How often during the last year have you needed a first drink in the morning to get yourself going after a heavy drinking session?		
Never	177	61.9%
Less than monthly	93	32.5%
Monthly	15	5.2%
Two to three times per week	1	.3%
7. How often during the last year have you had a feeling of guilt or remorse after drinking?		
Never	55	19.2%
Less than monthly	149	52.1%
Monthly	79	27.6%
Two to three times per week	3	1.0%

Alcohol Consumption	n	%
8. How often during the last year have you been unable to remember what happened the night before because you had been drinking?		
Never	135	47.2%
Less than monthly	117	40.9%
Monthly	34	11.9%
9. Have you or someone else been injured as a result of your drinking?		
No	194	67.8%
Yes, but not in the past year	83	29.0%
Yes, during the past year	9	3.1%
10. Has a relative or friend, or a doctor or other health worker been concerned about your drinking or suggested you cut down?		
No	250	87.4%
Yes, but not in the past year	33	11.5%
Yes, during the past year	3	1.0%

Table 4. Descriptive Summary of Alcohol Consumption Questions

Figure 6 highlights the distribution of alcohol consumption levels among the participants. A significant 57.7% of the participants exhibited hazardous or harmful drinking behaviors, indicating a high prevalence of risky alcohol use within the group. In contrast, 24.8% of participants were categorized as low-risk drinkers, meaning their alcohol consumption posed minimal health risks. Additionally, 17.5% of the participants showed a likelihood of alcohol dependence, suggesting they may have moderate to severe alcohol use disorders.

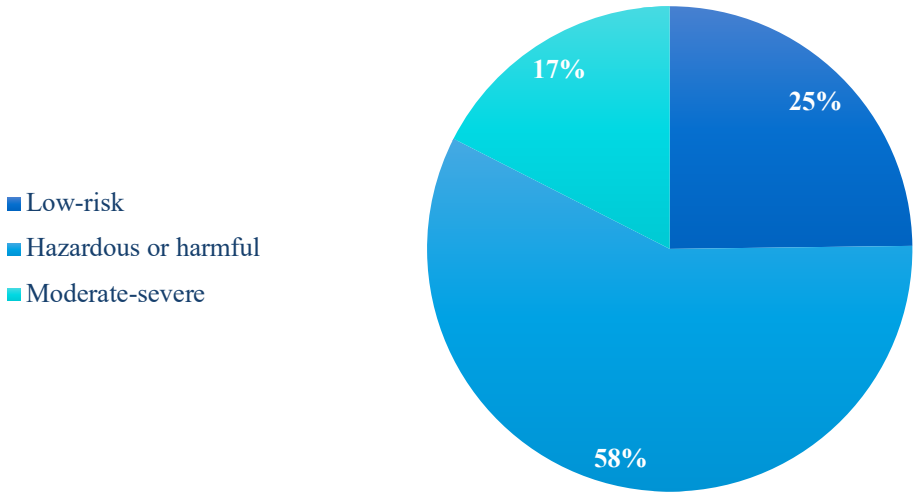


Figure 6. Alcohol Consumption Level Among Participants

3.3 Demographic Differences

The Chi-square test of independence was employed to identify significant differences in alcohol consumption levels across various demographic categories, with the results presented in Table 4. To assess the strength of the association between two categorical variables, specifically demographic characteristics and alcohol consumption levels, Cramer's V correlation statistic was utilized. Cramer's V was chosen as an alternative to the traditional Chi-square statistic because it addresses the issue of comparability across tables of different dimensions, offering a more standardized measure of association (Gingrich, 2020).

In Table 5, the counts (n) and percentages (%) for each demographic category are presented according to different levels of alcohol consumption. The table also includes Cramer's V (CV) and the significance level (Sig.) for these associations. The results indicate that age, gender, nationality, and income level show significant relationships with alcohol consumption levels, as detailed in the table. In contrast, religion does not have a significant association with alcohol consumption levels.

	Alcohol Consumption							
	Low-risk		Hazardous or harmful		Moderate-severe		Total	
Demographics	**n**	**%**	**n**	**%**	**n**	**%**	**CV**	**Sig.**
Age							**.150**	**.012**
18-30 years	28	38.4%	37	50.7%	8	11.0%		
31-50 years	32	18.9%	106	62.7%	31	18.3%		
50+ years	11	25.0%	22	50.0%	11	25.0%		
Gender							**.331**	**<.001**
Female	30	50.0%	29	48.3%	1	1.7%		
Male	41	18.1%	136	60.2%	49	21.7%		
Nationality							**.356**	**<.001**
Algeria	5	55.6%	3	33.3%	1	11.1%		
Bahrain	2	18.2%	7	63.6%	2	18.2%		
Egypt	17	54.8%	10	32.3%	4	12.9%		
Iraq	3	27.3%	6	54.5%	2	18.2%		
Jordan	4	36.4%	6	54.5%	1	9.1%		
KSA	2	9.5%	13	61.9%	6	28.6%		
Kuwait	2	10.5%	13	68.4%	4	21.1%		
Lebanon	6	23.1%	16	61.5%	4	15.4%		
Libya	6	85.7%	1	14.3%	-	-		
Morocco	3	30.0%	6	60.0%	1	10.0%		
Oman	2	11.8%	11	64.7%	4	23.5%		
Palestine	5	62.5%	3	37.5%	-	-		
Qatar	-	-	7	63.6%	4	36.4%		
Somalia	2	28.6%	4	57.1%	1	14.3%		
Sudan	1	9.1%	6	54.5%	4	36.4%		
Syria	5	33.3%	9	60.0%	1	6.7%		
Tunisia	1	9.1%	6	54.5%	4	36.4%		
UAE	5	11.6%	31	72.1%	7	16.3%		
Yemen	-	-	7	100.0%	-	-		

Income Level							**.233**	**<.001**
Less than 125,100 AED	39	41.9%	43	46.2%	11	11.8%		
125,100 – 610,100 AED	25	18.5%	90	66.7%	20	14.8%		
More than 610,100 AED	7	12.1%	32	55.2%	19	32.8%		
Religion							**.032**	**.863**
Christian	13	27.1%	26	54.2%	9	18.8%		
Muslim	58	24.4%	139	58.4%	41	17.2%		

Table 5. Results of Chi-square Tests of Alcohol Consumption Level by Demographics

3.3.1 AUDIT Scoring

AUDIT scores show a cutoff point below 8 indicating low risk and 8 or more indicating harmful or severe alcohol consumption (as shown in Table 6). The findings suggest a strong relationship between alcohol consumption levels and variables such as age, gender, nationality, and income level, as outlined in the accompanying table. These factors appear to influence drinking behavior significantly. However, the data shows no notable correlation between religious affiliation and alcohol consumption, indicating that religion does not play a significant role in shaping drinking patterns in this context.

	Score	
Demographic Categories	**Below 8**	**≥ 8**
Age		
18-30 years	28 (38.4%)	45 (61.6%)
31-50 years	32 (18.9%)	137 (81.1%)
50+ years	11 (25.0%)	33 (75.0%)
Gender		
Female	30 (50.0%)	30 (50.0%)

Male	41 (18.1%)	185 (81.9%)
Nationality		
Algeria	5 (55.6%)	4 (44.4%)
Bahrain	2 (18.2%)	9 (81.8%)
Egypt	17 (54.8%)	14 (45.2%)
Iraq	3 (27.3%)	8 (72.7%)
Jordan	4 (36.4%)	7 (63.6%)
KSA	2 (9.5%)	19 (90.5%)
Kuwait	2 (10.5%)	17 (89.5%)
Lebanon	6 (23.1%)	20 (76.9%)
Libya	6 (85.7%)	1 (14.3%)
Morocco	3 (30.0%)	7 (70.0%)
Oman	2 (11.8%)	15 (88.2%)
Palestine	5 (62.5%)	3 (37.5%)
Qatar	-	11 (100.0%)
Somalia	2 (28.6%)	5 (71.4%)
Sudan	1 (9.1%)	10 (90.9%)
Syria	5 (33.3%)	10 (66.7%)
Tunisia	1 (9.1%)	10 (90.9%)
UAE	5 (11.6%)	38 (88.4%)
Yemen	-	7 (100.0%)
Income Level		
Less than 125,100 AED	39 (41.9%)	54 (58.1%)
125,100 – 610,100 AED	25 (18.5%)	110 (81.5%)
More than 610,100 AED	7 (12.1%)	51 (87.9%)
Religion		
Christian	13 (27.1%)	35 (72.9%)
Muslim	58 (24.4%)	180 (75.6%)

Table 6. Demographic Percentage below Score of 8 and Equal to or Above 8.

3.3.2 Age

Chi-square tests revealed a significant association between age and alcohol consumption level, with Cramer's V = 0.150 and a p-value of 0.012. According to Figure 7, older participants tend to exhibit a higher likelihood of developing alcohol dependence, including moderate to severe alcohol use disorder, compared to their younger counterparts. In contrast, younger participants are more frequently categorized as engaging in low-risk alcohol consumption. This suggests that as individuals age, the risk of more severe alcohol-related issues increases, while younger individuals are more likely to have lower levels of alcohol consumption.

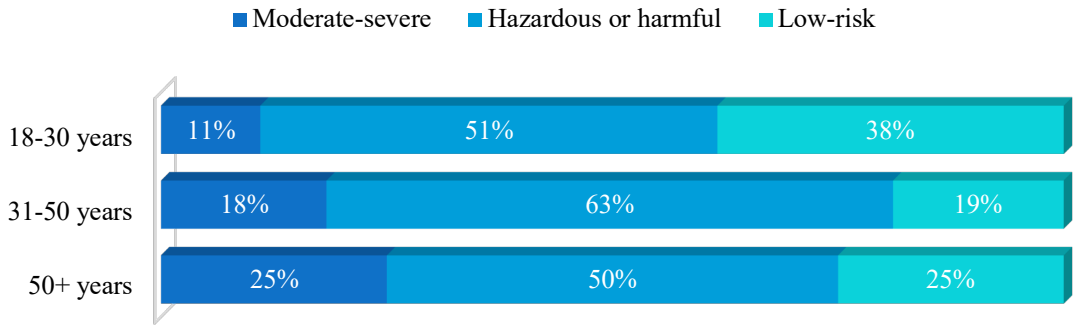


Figure 7. Alcohol Consumption Level * Age

According to AUDIT scores, the results revealed that 61.6% of participants aged 18-30 scored 8 or higher, while 81.1% of those aged 31-50 and 75% of participants aged 50 and above also scored in this range. Overall, 75.2% of the participants were identified as engaging in risky alcohol consumption, with 57.7% falling into the hazardous or harmful drinking category and 17.5% categorized as having moderate-severe alcohol intake or alcohol dependence (Figure 8).

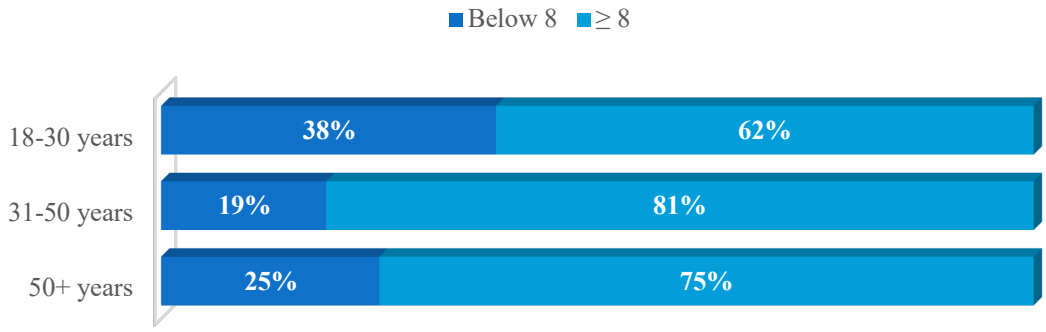


Figure 8. AUDIT Scoring * Age

3.3.3 Gender

Chi-square tests demonstrated a significant relationship between gender and alcohol consumption level, with Cramer's V = 0.331 and a p-value of less than 0.001. As illustrated in Figure 9, female participants are more likely to have lower levels of alcohol consumption compared to male participants. This indicates a clear gender disparity, where males tend to report higher levels of alcohol consumption than females, suggesting potential differences in drinking patterns or social behaviors between the genders.

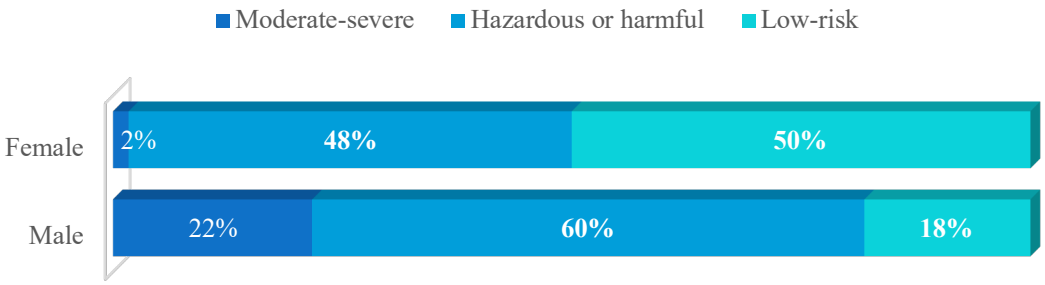


Figure 9. Alcohol Consumption Level * Gender

In this study, gender differences in alcohol consumption patterns were notable (Figure 10) . Among the female participants, half (50%) were categorized as being at low risk for alcohol-related problems, with an AUDIT score of less than 8. However, the other 50% of female participants had scores of 8 or higher, placing them in the category of harmful or severe alcohol

use. Within this group, nearly half (48.3%) were identified as having hazardous or harmful drinking behaviors. A small proportion of these women (1.7%) were found to have more serious alcohol-related problems, falling into the category of moderate-severe alcohol dependence. For male participants, the results showed an even more pronounced pattern of risky alcohol use. A significant majority (81.9%) of the men who took part in the study had AUDIT scores of 8 or above, placing them in the harmful or severe alcohol use category. Among these men, 60.2% were identified as engaging in hazardous or harmful drinking. Furthermore, 21.7% of the men in this group were classified as having moderate to severe alcohol dependence.

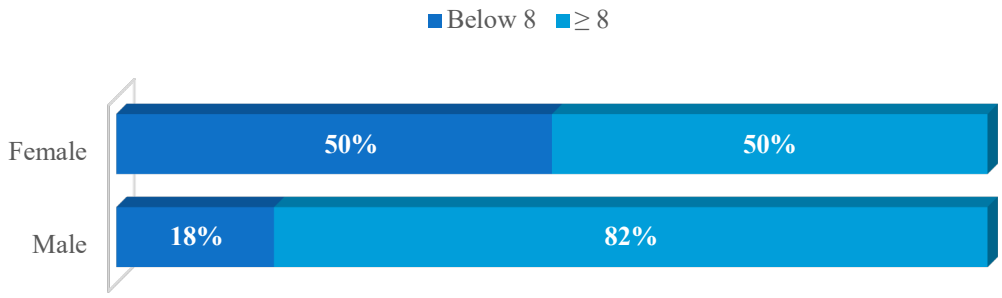


Figure 10. AUDIT Scoring * Gender

3.3.4 Income Level

Chi-square tests revealed a significant relationship between income level and alcohol consumption level, with Cramer's V = 0.233 and a p-value less than 0.001. As shown in Figure 11, participants in the highest income bracket (more than AED 610,100) displayed the highest percentage of alcohol dependence, including moderate to severe alcohol use disorder, at 32.8%. Conversely, the highest proportion of participants exhibiting hazardous or harmful alcohol consumption was found in the income range of AED 125,100 to AED 610,100, at 66.7%.

In contrast, the lowest income category reported the highest percentage of low-risk alcohol consumption, with 41.9% of participants falling into this group. These results suggest that higher

income levels are associated with a greater likelihood of severe alcohol dependence, while those in mid-range income brackets are more prone to hazardous drinking behaviors. Lower-income individuals, on the other hand, are more likely to have low-risk alcohol consumption, highlighting a complex relationship between income and alcohol use patterns.

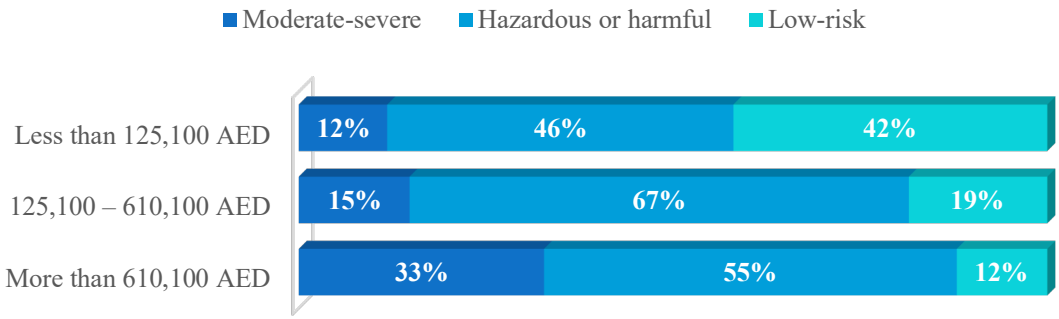


Figure 11. Alcohol Consumption Level * Income Level

The study highlights how income levels influence the risk of alcohol use disorder (AUD) as shown in Figure 12. Participants from the middle-income group showed a high risk of AUD, with 81.5% scoring 8 or higher on the AUDIT. Among these, 14.8% were identified as having moderate to severe alcohol dependence. Conversely, the low-income group exhibited a more balanced risk distribution, with almost no predominant trend towards either high or low risk. In contrast, the high-income group demonstrated an even more pronounced risk, as 87.9% scored 8 or higher on the AUDIT, reflecting the highest susceptibility among the income groups studied.

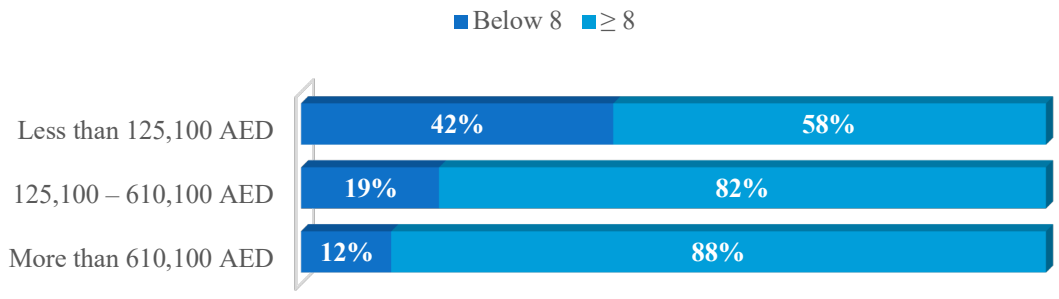
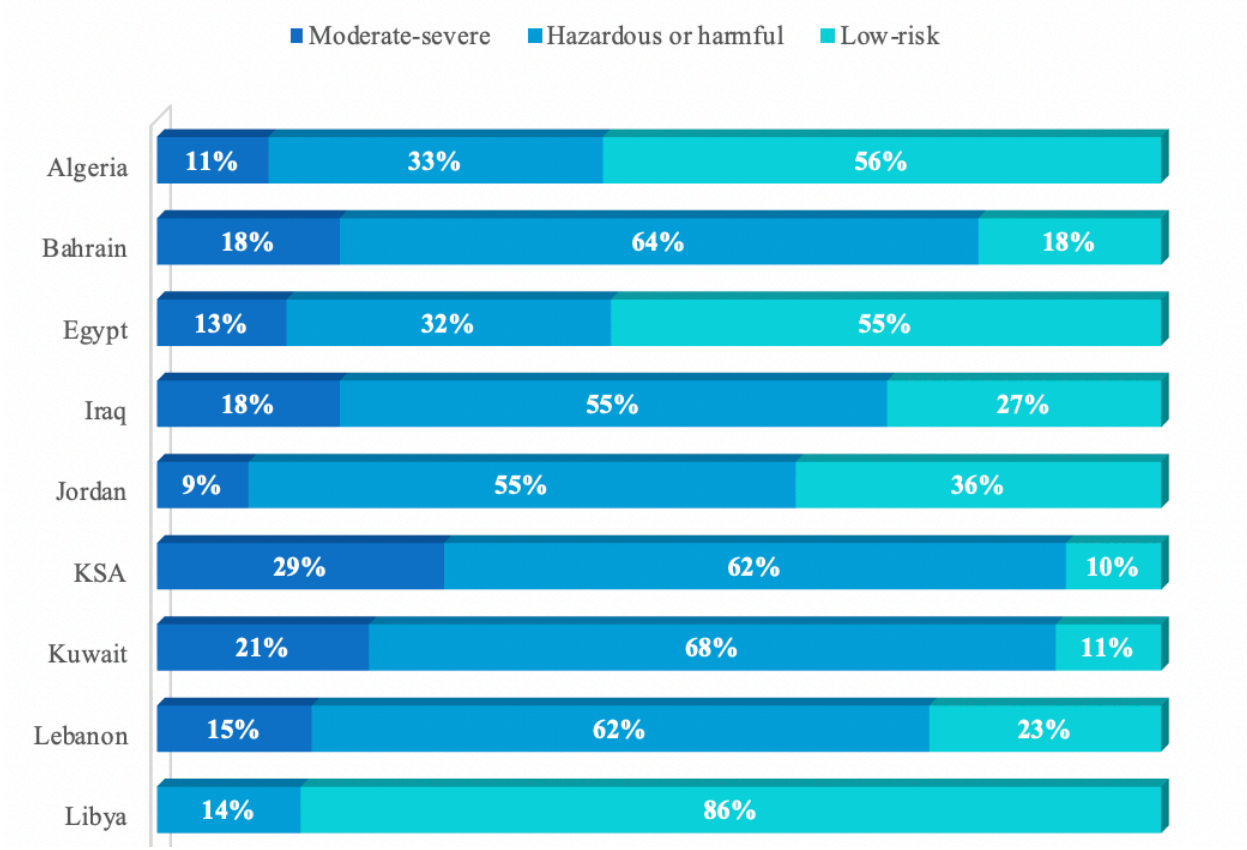


Figure 12. AUDIT Scoring * Income Level

3.3.5 Nationality

Chi-square tests revealed a significant association between nationality and alcohol consumption level, with Cramer's V = 0.356 and a p-value less than 0.001. Figure 13 shows that participants from Tunisia, Sudan, and Qatar exhibited the highest percentage of alcohol dependence, including moderate to severe alcohol use disorder, with a rate of 36.4%. This was followed by participants from Saudi Arabia (28.6%), Oman (23.5%), and Kuwait (21.1%).

Regarding hazardous or harmful alcohol consumption, Yemen had the highest percentage (100.0%), followed by the UAE (72.1%), Kuwait (68.4%), and Oman (64.7%). In contrast, the highest percentages of low-risk alcohol consumption were observed in Libya (85.7%), Palestine (62.5%), Algeria (55.6%), and Egypt (54.8%).



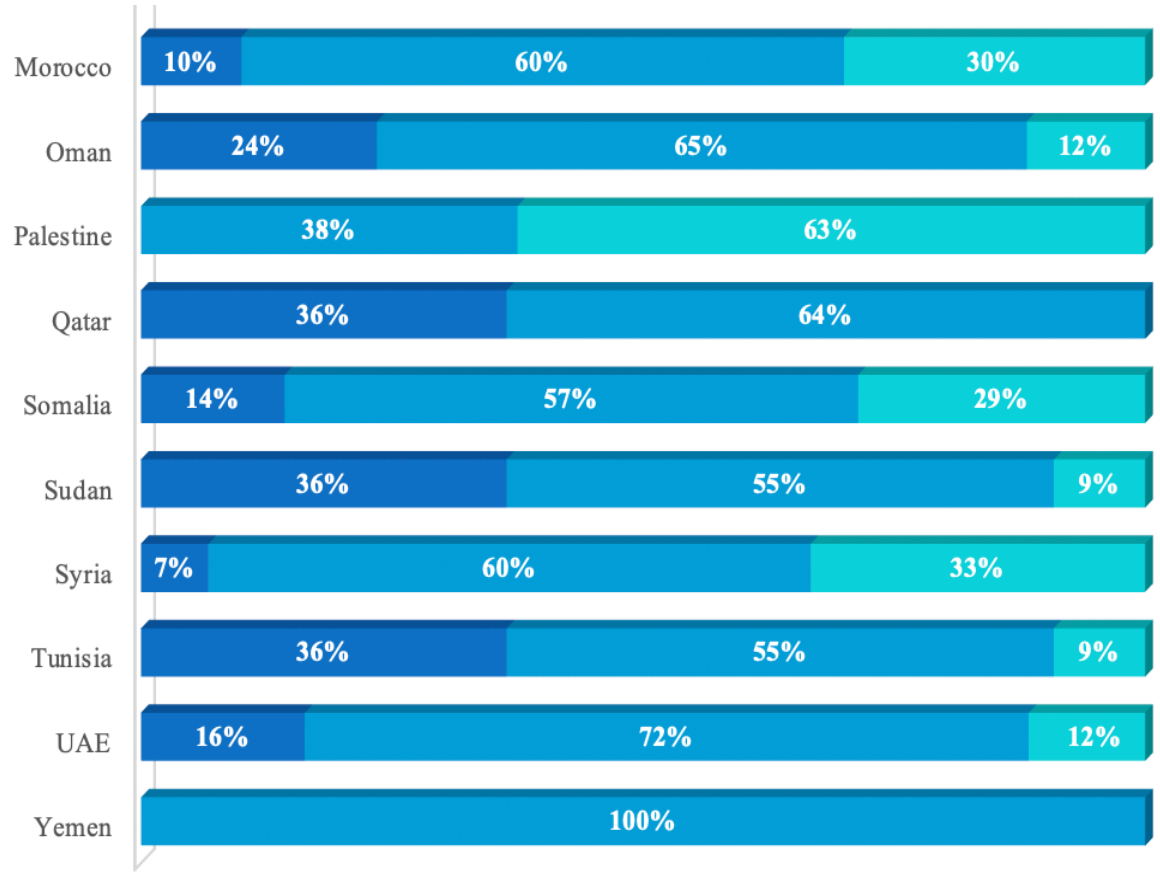
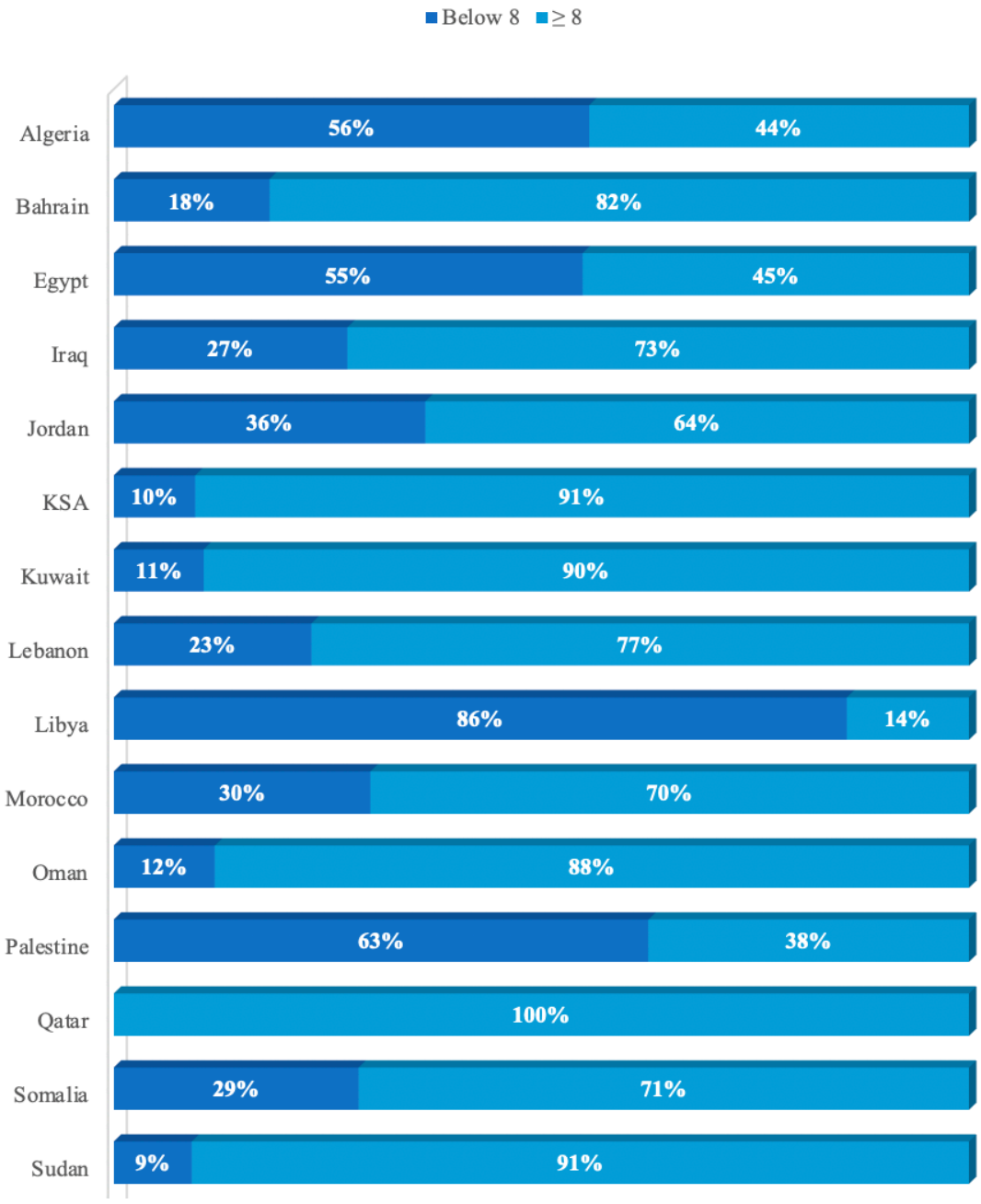


Figure 13. Alcohol Consumption Level * Nationality

The analysis of nationality and alcohol intake revealed significant differences among participants as shown in Figure 14. Some nationalities had higher proportions of individuals classified as low-risk drinkers, with AUDIT scores below 8. Notably, participants from Algeria (55.6%), Libya (85.7%), and Palestine (62.5%) exhibited the highest percentages of low-risk alcohol consumption compared to other nationalities. Conversely, many nationalities had a substantial number of participants who scored 8 or higher on the AUDIT questionnaire, indicating a higher risk of alcohol misuse. Participants from Yemen (100%), Qatar (100%), Sudan (90.9%), Tunisia (90.9%), Saudi Arabia (90.5%), Kuwait (89.5%), the UAE (88.4%), Oman (88.2%), Bahrain (81.8%), and Iraq (72.7%) showed the highest rates of hazardous or harmful alcohol

consumption, as well as moderate-severe alcohol dependence risk. Overall, 88.9% of participants from these nationalities scored 8 or higher on the AUDIT, placing them at risk for alcohol use disorders (AUD). Among those at risk, 74.3% fell into the hazardous or harmful consumption category, while 25.7% were categorized as having moderate-severe alcohol dependence.



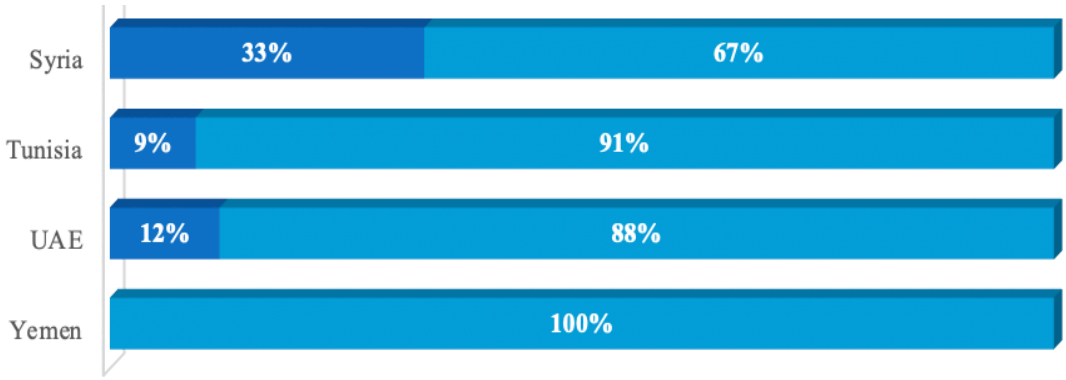


Figure 14. AUDIT Scoring * Nationality

3.3.6 Religion

Chi-square tests revealed no significant difference between Christians and Muslims regarding alcohol consumption levels, with Cramer's V = 0.032 and a p-value of 0.863 as shown in Figure 15. This suggests that religious affiliation, specifically between Christians and Muslims, does not play a significant role in influencing alcohol consumption behavior. The similarity in alcohol consumption patterns across these religious groups indicates that other factors, such as cultural or social influences, may have a more substantial impact than religion alone on alcohol use.

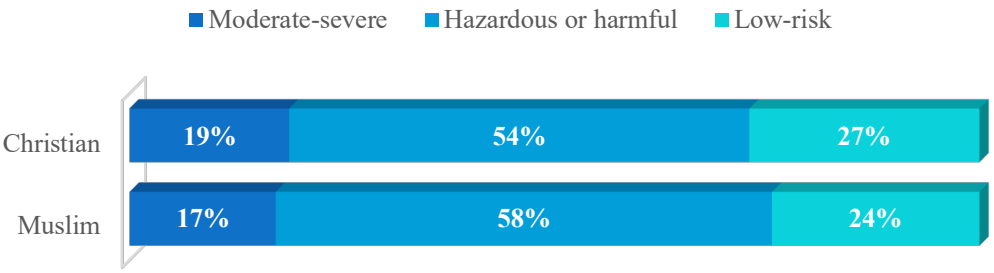


Figure 15. Alcohol Consumption Level * Religion

The study examined the influence of religion on alcohol consumption and found that it had a minimal effect, indicated by a p-value of 0.863. This means that there was no statistically

significant difference in alcohol use disorder (AUD) risk between the two religious groups studied: Christians and Muslims (Figure 16). Both groups displayed comparable patterns of alcohol consumption, with roughly 75.6% of Muslim participants and 72.9% of Christian participants scoring 8 or higher on the AUDIT. These findings suggest that religion alone does not strongly impact the risk of AUD. Instead, it is likely that other factors, such as social, cultural, or economic influences, play a more significant role in determining alcohol consumption levels among individuals from both religious backgrounds.

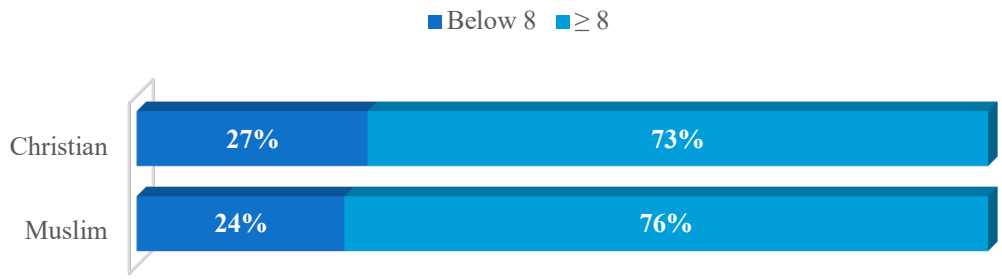


Figure 16. AUDIT Scoring * Religion

3.3.7 Multivariate Analysis

The data analysis indicates a significant correlation between alcohol use disorder (AUD) and various factors, including age, nationality, gender, and income level. However, no significant relationship was found between religion and alcohol consumption.

The results indicate that the prevalence of alcohol use disorder (AUD) is lower among participants aged 18-30 years (38%) and those aged 51 years and older (25%) compared to participants aged 30-51 years (19%). This suggests that younger adults and older individuals are less likely to develop AUD than those in the middle-aged group.

Nationality also plays a role, with participants from the Gulf Region showing significantly higher rates of moderate to severe AUD and hazardous alcohol consumption compared to

participants from other Arab countries. This indicates that geographic and cultural differences may influence drinking behavior.

Gender is another significant factor, as the results show a significant correlation between gender and alcohol use disorder (AUD), with females being substantially less likely to develop AUD compared to males. Specifically, 50% of female participants were less likely to exhibit AUD, while only 18% of males were less likely to do so.

Additionally, income level appears to be positively correlated with AUD, meaning that higher income levels are associated with a greater likelihood of developing AUD.

In contrast, religion does not seem to have a significant impact on alcohol consumption in the studied sample, suggesting that religious affiliation does not strongly influence drinking behaviors in this context.

4.0 Discussion

Given the increasing global concern surrounding alcohol misuse, it becomes essential to investigate the various factors that contribute to this issue. Alcohol use disorder (AUD) has seen a troubling rise over the past few decades, affecting millions of people worldwide. The World Health Organization (2014) has highlighted the severity of the problem, noting that over 3 million deaths annually and numerous disabilities are directly linked to excessive alcohol consumption.

Western countries have been making concerted efforts to tackle the challenges related to alcohol consumption and its misuse. Researchers have conducted various comparative studies to better understand alcohol consumption patterns across different Western nations. Notable studies, such as those by Bloomfield et al. (2003), Popova et al. (2007), and Madureira-Lima & Galea (2018), have provided important insights into these patterns. These studies help to identify and quantify the levels of alcohol use and abuse among populations in different countries, enabling a clear comparison.

The findings of these studies are particularly valuable for public health authorities, as they offer a clearer picture of how alcohol consumption levels vary between countries. This information is crucial for determining whether certain nations have a significantly higher prevalence of alcohol misuse that might warrant more immediate or intensive interventions. For countries with alarming levels of alcohol intake, the research can guide government policies, healthcare strategies, and public awareness campaigns aimed at reducing alcohol-related harm. Overall, these studies contribute to a broader understanding of alcohol consumption in Western societies and assist in shaping policies that can help mitigate the risks of excessive drinking.

While extensive research has been conducted in Western countries to examine the level of alcohol consumption and to understand the underlying biological and social factors that drive alcohol consumption, such as genetics (Wall et al., 2016; Mayfield et al. 2008), social influences (Prestwich et al., 2016), and psychological triggers (Hetherington, 2007), there remains a significant gap in research within Arab countries. This lack of data is concerning, given the unique cultural, religious, and socio-political dynamics of the region, which may influence alcohol use in ways that differ from Western contexts.

In Western countries, studies often focus on how factors like family history, peer pressure, mental health, and societal norms contribute to alcohol misuse (Dupuis et al., 2016; Hill, 1994; Perkins, 2002). These studies have led to targeted interventions and policies aimed at reducing alcohol-related harm. However, in Arab countries, research is scarce, making it difficult to develop a comprehensive understanding of alcohol use patterns, risk factors, and potential protective factors.

The present study addresses this gap by examining key factors that may influence alcohol consumption in Arab countries. These factors include age, gender, religion, nationality, and income level. Age is a crucial determinant, as younger populations may be more susceptible to

peer influence and risky behaviors, while older individuals might face different social pressures or health considerations. Gender plays a significant role as well, with cultural norms often dictating different expectations and behaviors for men and women regarding alcohol use.

Religion is particularly important in the Arab world, where Islamic teachings, which prohibit alcohol consumption, might conflict with social or personal behaviors. Nationality introduces another layer of complexity, as the Arab world comprises diverse countries with varying laws, cultural norms, and economic conditions. Lastly, income level can influence alcohol consumption, with higher-income individuals potentially having more access to alcohol despite legal or cultural restrictions, while lower-income individuals might face different stressors that influence their drinking habits.

By exploring these factors, the study aims to shed light on the unique dynamics of alcohol use in Arab countries and contribute to a more nuanced understanding of AUD in this region. This understanding is crucial for developing effective prevention and intervention strategies tailored to the specific needs and challenges of the Arab world.

The United Arab Emirates (UAE) was chosen as the country to conduct this study due to its unique demographic diversity. The UAE is home to a wide range of nationalities, including a significant number of individuals from various Arab countries. This diversity provides an ideal environment for obtaining a comprehensive understanding of different Arab nationalities in one location. By conducting the study in the UAE, it is possible to gather insights that reflect the experiences and perspectives of Arabs from across the region, all within a single, multicultural setting.

The current study was conducted using a representative random sample from various locations in two emirates of the UAE—Dubai and Ajman—where alcohol is served. A total of 286 individuals agreed to participate by completing the Alcohol Use Disorders Identification Test

(AUDIT), which assessed their patterns of alcohol consumption. Notably, only individuals of Arab nationalities were included in the study, in line with its specific objective of understanding alcohol use within this demographic.

This study found consistent differences in alcohol consumption across age groups. The middle-aged group (31-50 years) reported higher alcohol intake compared to both younger adults (18-31 years) and older adults (50+ years). This pattern may reflect variations in drinking behaviors during different life stages. Younger adults might engage in lower-risk drinking, possibly influenced by social factors or lifestyle choices, while older adults tend to drink less, potentially due to health concerns or lifestyle adjustments. In contrast, the middle-aged group appears more susceptible to developing alcohol use disorder (AUD), likely influenced by a combination of social, professional, and personal pressures that may increase the risk of harmful drinking. Similar findings were reported in a study by Varma et al. (1980), which also identified a correlation between the age group 31 to 50 years old and alcohol consumption.

The study also showed a significant relationship between gender and alcohol consumption levels, with female participants more likely to report lower alcohol intake compared to males. This highlights a clear gender disparity among Arab culture people, where males tend to consume alcohol at higher levels, possibly reflecting differences in drinking patterns or social behaviors between the genders. This result was proven in various studies done by different researchers like Wilsnack et al., (2000); Jaervinen & Olafsdottir (1989); Plant (1990); Helzer et al. (1990); Hupkens, Knibbe & Drop, (1993) & Fillmore et al. (1991) and many more. However, these studies reflected Western cultures, whereas the current study proved that this theory is also applied to the Arab cultures. This gender disparity in AUD prevalence may reflect broader social, cultural, and biological differences between men and women. For instance, societal norms and expectations often play a role in shaping alcohol consumption patterns, especially in Arab cultures. In many

Arab cultures, men may face less social stigma around drinking, and in some cases, heavy drinking might even be socially accepted or encouraged among males. This case is similar to the cases studied by Driessen (1992), Gotoh (1994), and McDonald (1994b) where findings showed the same results regarding the influence of social stigma among men. Conversely, women may experience greater societal pressures to avoid alcohol or to drink moderately, leading to lower rates of AUD, which also comes in line with findings in the study done by Blume (1997).

Additionally, biological factors may contribute to these differences. Research suggests that women may metabolize alcohol differently than men, making them more susceptible to the negative effects of alcohol at lower levels of consumption (Frezza et al., 1990; Seitz, Egerer & Simanowski, 1993; Pozzato et al., 1995). As a result, women may be more cautious in their drinking habits to avoid adverse health outcomes, which could contribute to their lower rates of AUD.

Some of the current findings were expected, as they align with established knowledge. For instance, the link between gender and alcohol use was entirely consistent with existing literature. The significant gender gap in AUD prevalence also underscores the need for gender-specific approaches in addressing alcohol use. Prevention and intervention strategies might benefit from considering the different social pressures and health risks faced by men and women when it comes to alcohol consumption.

The data in this study on income level and its relation with alcohol intake indicates that income level is positively correlated with alcohol use disorder (AUD), meaning that as income increases, so does the likelihood of developing AUD. This trend suggests that individuals with higher income levels are more prone to moderate-severe alcohol use disorder and hazardous drinking behaviors compared to those with lower incomes. A study that was done on this relationship by Grittner et al. (2013) also revealed that there is a positive relationship between

high-income levels and alcohol use disorder. This study compared the SES with alcohol intake among 33 countries, which were all non-Arab countries. Results from this study revealed that also in Arab countries, the higher the income an individual has, the more vulnerable he/she is to be developing AUD.

Several factors might explain this relationship between higher income and increased AUD risk. Firstly, individuals with higher incomes often have greater disposable income, which can increase access to alcohol. This financial flexibility may allow for more frequent or excessive alcohol consumption, especially in social settings where drinking is normalized or encouraged.

Secondly, higher-income individuals might face unique social pressures and professional environments that contribute to stress or lifestyle choices that involve alcohol. For instance, business-related socializing or networking events often involve alcohol, potentially leading to habitual drinking. Additionally, individuals in higher-income brackets might work in high-pressure jobs where alcohol is used as a coping mechanism for stress or as a reward for hard work, increasing their risk of AUD over time.

In contrast, those in lower income brackets may have limited access to alcohol due to financial constraints, or they might prioritize spending on essentials over discretionary items like alcohol. However, it is important to note that while higher income is associated with greater AUD risk, lower-income individuals can also be vulnerable to alcohol-related problems, though the patterns and contexts might differ.

The analysis of nationality and alcohol consumption revealed significant variations across different groups. Some nationalities had a greater proportion of individuals classified as low-risk drinkers. For instance, participants from Algeria, Libya, and Palestine showed the highest percentages of low-risk alcohol consumption when compared to other nationalities. This suggests that individuals from these regions may engage in more moderate drinking behaviors.

On the other hand, several nationalities demonstrated a considerably higher risk of alcohol misuse, with many participants falling into the categories of hazardous or harmful drinking. Participants from Yemen, Qatar, Sudan, Tunisia, Saudi Arabia, Kuwait, the UAE, Oman, Bahrain, and Iraq were found to have elevated rates of risky drinking behaviors and were also at greater risk of developing moderate to severe alcohol dependence.

Notably, participants from Gulf countries were identified as having the highest overall risk of developing Alcohol Use Disorder (AUD). This trend may be linked to the strong correlation between higher income and increased alcohol consumption identified in the study, with Gulf participants reporting the highest income levels. The findings suggest that higher disposable income may be a contributing factor to more frequent or riskier drinking habits in this demographic. Overall, the study highlights a clear regional distinction in alcohol consumption patterns, with Gulf nationalities facing a higher potential for alcohol-related issues.

It is clear that the findings from this study align with previous research, such as the study conducted by Grittner et al. (2013), which explored the relationship between income levels and alcohol consumption. The results of the current study reflect similar patterns, particularly in relation to the high-risk alcohol consumption observed among Gulf region nationalities, where higher income levels were reported. Given that research on alcohol consumption in Arab countries is relatively sparse, linking income to nationality provides a logical framework for understanding these patterns. The correlation between higher disposable income and increased alcohol consumption observed in this study reinforces the idea that economic factors may play a significant role in shaping drinking behaviors within specific national groups. This connection is particularly relevant when examining Gulf countries, where wealth is generally higher, and the observed risk of alcohol misuse may be influenced by the financial capacity to engage in more frequent or risky drinking behaviors.

Linking the findings to social influence is also valid, as the UAE's highly diverse population may encourage individuals from Gulf countries to interact with people from various nationalities where alcohol consumption is neither taboo nor socially unacceptable. This increased exposure to different cultural norms and behaviors around alcohol could contribute to a higher likelihood of alcohol consumption among Gulf nationals, despite the traditional restrictions in their own societies. Additionally, business meetings and social gatherings with people from these societies, where alcohol consumption is widely accepted, may further influence Gulf nationals to partake in drinking, as it may be seen as a means of social integration or networking. The combination of these social dynamics and the influence of income and economic factors creates a unique environment where drinking habits may shift.

In contrast to the significant correlations found between alcohol use disorder (AUD) and factors such as age, nationality, gender, and income level, religion did not appear to have a significant impact on alcohol consumption in the sample tested. This suggests that, within this particular population, religious affiliation or belief systems did not strongly influence drinking behaviors or the likelihood of developing AUD.

This finding may be somewhat surprising, particularly in regions where religious beliefs traditionally discourage or prohibit alcohol consumption. For example, in many Muslim-majority countries, Islamic teachings strictly forbid the use of alcohol, and one might expect these religious guidelines to result in lower alcohol consumption among adherents. However, the data indicates that religion, in this context, did not significantly alter alcohol consumption patterns.

Several factors could explain this lack of significant correlation. It's possible that cultural and societal norms, which often overlap with religious beliefs, play a more dominant role in influencing alcohol use than personal religious conviction. In other words, social practices and

community standards around drinking may exert a stronger influence than individual religious beliefs.

Additionally, the sample may include a diverse range of participants with varying levels of religious observance. Some individuals may identify with a particular religion but not strictly adhere to its guidelines, particularly in social settings where alcohol consumption is common or accepted. This could diminish the observable impact of religion on alcohol use in the data.

It's also possible that other factors, such as socioeconomic status, stress, or peer influence, overshadow the role of religion in determining alcohol consumption behaviors. For example, someone facing high levels of stress or social pressure might engage in drinking despite religious prohibitions.

Ultimately, the results suggest that at least within the sample tested, religion alone does not serve as a protective factor against alcohol use, and interventions aimed at reducing AUD may need to focus more on social, economic, and cultural influences rather than relying on religious affiliation or beliefs.

This study demonstrates several significant strengths. Firstly, alcohol consumption was assessed using the AUDIT (Alcohol Use Disorders Identification Test) questionnaire, a well-established and reliable tool for evaluating alcohol use patterns and potential issues. The use of this validated method ensures that the data collected is both credible and standardized across participants. Additionally, administering the AUDIT in two languages, English and Arabic, adds further accuracy to the study by ensuring that all participants, regardless of their language proficiency, fully comprehended the questions. This bilingual approach minimizes the risk of misunderstandings and ensures that the responses accurately reflect the participants' true behaviors and attitudes.

Moreover, the study accounts for key confounding factors—such as age, gender, income level, and religion—which could potentially influence alcohol consumption patterns. By adjusting for these variables, the study provides more reliable and significant results. Another strength lies in the breadth of the study's sample population, as data was collected from individuals at 10 different bars across two emirates. This geographic diversity enhances the generalizability of the findings, ensuring that the results reflect a wider cross-section of the population and adding credibility to the study's overall conclusions.

Despite efforts to ensure the accuracy of this study, several limitations may have impacted the results. Firstly, the sample size may not be fully representative of the overall population due to various constraints, such as time, participants' willingness to share their experiences, and the sensitivity of the topic, as alcohol use is a socially taboo subject. While the study is statistically viable, these factors could have reduced its overall acceptance. Additionally, female participants made up only 21% of the total sample. This low representation could be attributed to societal pressures discouraging women from being seen at bars in the UAE. As a result, this might have led to a biased conclusion regarding the prevalence of AUD among Arab women.

Secondly, the study employed a cross-sectional design, which limits its ability to infer causation. It cannot determine whether Problematic Alcohol Use (PAU) stems from accidental alcohol use, depression, or mood disorders. Additionally, as the study is retrospective, it is prone to recall bias, potentially leading to an overestimation of factors related to PAU.

Thirdly, some participants may have misunderstood certain questions, contributing to information bias, as responses were self-reported and not assessed by professionals, which could decrease the accuracy of the results. Carey and Hustad (2002) noted that post-hoc calculations of Blood Alcohol Content (BAC) become less accurate when levels exceed 0.08. A BAC of 0.08 is lower than the average BAC reported by those in the at-risk group, meaning the number of drinks,

binge episodes, and other related variables may have been inaccurately reported, especially among high-risk drinkers. However, previous studies have generally supported the reliability and validity of self-reported alcohol data in adults (e.g., Babor, Steinberg, Anton, & Del Boca, 2000). This is particularly relevant since the data in this study was collected anonymously, though the results may differ if anonymity was not assured, such as in a clinical setting. Future studies could examine variations in the sensitivity and specificity of the AUDIT questionnaire across different environments.

Selection bias may also have occurred due to the refusal rate, and residual confounding bias is likely since not all factors linked to the dependent variable were anticipated. The findings are not generalizable, as all participants surveyed were alcohol consumers. Non-drinkers were not given the opportunity to participate since the study was conducted in bars, where primarily alcohol-consuming individuals frequent. Furthermore, those not present in Ajman or Dubai during the study or those who prefer consuming alcohol at home were excluded.

Additionally, all exposure measurements were taken at a single point in time, even though alcohol consumption patterns can change throughout one's life. This could result in misclassification, even for lifetime abstainers. Current abstainers could include both lifetime abstainers and former drinkers, who have differing risks of mortality due to previous drinking habits (Rehm et al., 2008). The AUDIT questionnaire focuses on alcohol use in the past year, potentially missing information on lifetime alcohol use and misuse. To better understand the factors associated with alcohol consumption and its consequences, longitudinal studies will be necessary.

5.0 Conclusion

The study investigates alcohol consumption patterns in Arab countries, focusing on key factors such as age, gender, nationality, income level, and religion. It was conducted in the United

Arab Emirates (UAE), a culturally diverse country, using the Alcohol Use Disorders Identification Test (AUDIT) among 286 participants of Arab nationalities. The results revealed that middle-aged individuals (31-50 years) had higher alcohol consumption, and males reported greater alcohol use than females. Gender differences aligned with global patterns of alcohol use, with societal norms influencing men to drink more. Income level was positively correlated with alcohol use disorder (AUD), as individuals with higher income had more access to alcohol and were more likely to develop AUD. Participants from Gulf countries exhibited higher alcohol consumption, likely due to higher disposable incomes and exposure to multicultural environments where drinking is more socially acceptable.

While the study found significant links between alcohol consumption and factors like age, gender, and income, religion did not appear to significantly impact drinking behaviors. This lack of correlation suggests that cultural and societal influences may have a stronger effect on alcohol consumption than religious beliefs, even in predominantly Muslim countries where alcohol is prohibited. Overall, the findings highlight the need for tailored interventions addressing social, cultural, and economic factors in reducing alcohol-related harm, particularly in Arab regions where alcohol use patterns are influenced by complex social dynamics.

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