

## ASSOCIATED FACTORS OF ALCOHOL USE DISORDER AMONG MEN WHO HAVE SEX WITH MEN

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### ABSTRACT

**Introduction:** Considerable evidence exists that Man who have Sex with Men (MSM) experiences worse health disparities compared to the general population across the globe including higher rates of alcohol use disorder. This review summarized the available primary research information to provide a comprehensive understanding of the factors associated with Alcohol Use Disorder among MSM.

**Methods:** A literature review of PubMed articles was done. A total of 85 papers about the MSM population were displayed. Twelve articles about Alcohol Use Disorder among MSM were reviewed to extract its associated factors. Afterward, these factors were arranged by themes.

**Results:** The associated factors of Alcohol Use Disorder among the MSM were social and demographic factors, abuses, sexual behaviors, HIV-related factors, other mental health conditions, and previous Alcohol Use Disorder treatment.

**Conclusions:** Some of the factors associated with Alcohol Use Disorder among MSM may be similar to the general population, while others may be unique to the MSM population. The associations between Alcohol Use Disorder and these factors may be explained by Alcohol's biological factors, adverse social experiences based on their sexual minority background, cultural differences, and coping styles. These factors may also increase the risk of MSM for other health conditions such as HIV. *ASEAN Journal of Psychiatry, Vol. 22(5), July 2021: 1-12.*

**Keywords:** Alcohol Use Disorder, Alcoholism, Factors, LGBT, MSM

### Introduction

No physical or psychiatric condition is more associated with social disapproval and discrimination than substance use disorder [1]. Substance use disorder is a cluster of cognitive, behavioral, and physiological symptoms wherein an individual continues to use a substance despite significant problems stemming from substance use [2-4]. An important biological characteristic of substance use disorders is an underlying change in brain circuits that may persist beyond the detoxification of the substance from the body. This is particularly observed among individuals with severe substance use disorders [5,6]. The

behavioral effects of these brain changes may be exhibited in the repeated relapses and intense drug cravings when the individuals are exposed to drug-related stimuli. These persistent drug effects may benefit from long-term approaches to treatment.

Substance use disorders are associated with a broad range of adverse outcomes [7]. These include accidents and traffic fatalities, domestic violence, fetal alcohol syndrome and other prenatal and perinatal insults, neuropsychological impairment, poor medication adherence, economic costs and lost productivity, psychiatric

comorbidity, and functional disability [8]. Thus, prevention and intervention of excess substance use is an important public health priority [9]. Among these substances, alcohol is one of the most dangerous, and most disabling [10].

#### *Global Prevalence of Alcohol Use Disorder*

At some time during life, 90 percent of the population drinks an alcoholic beverage [11]. At any time, two of three men are drinkers, with a ratio of persisting alcohol intake of approximately 1.3 men to 1.0 women, and the highest prevalence of drinking is from the middle or late teens to the mid-20s [12]. Most people begin their alcohol intake in the early to middle teens [13]. The highest prevalence rates of alcohol use disorders in the population can be found in parts of Eastern and Central Europe (up to 16%), in the Americas (up to 10%), South-East Asia (up to 10%), and in some countries in the Western Pacific (up to 13%) [14].

#### *Global Burden of Alcohol Use Disorder*

Globally, approximately 35 deaths per 100 000 population were attributable to alcohol use [15]. The highest numbers of deaths due to alcohol and illicit substance use were found in Europe where 70 deaths per 100 000 population are attributable to alcohol use. In almost all regions, the numbers of deaths attributable to alcohol use are higher than those for illicit substance use [16]. Moreover, approximately 11 Disability Adjusted Life Years (DALYs) per 1000 population were lost due to alcohol use.

#### *Health Disparities of Alcohol Use Disorder among MSM*

Certain portions of the general population are at risk for higher prevalence and burden of Alcohol Use Disorder. Considerable evidence had shown that Men who had Sex with Men (MSM) experienced worse health disparities and outcomes than the general population in every country across the globe including a higher rate of Alcohol Use Disorder. It has also been posited that these may be a result of various factors such as chronic stress, social isolation from their loved ones, and

disconnectedness from a range of health and support services [6]. These disparities had also been noted to leave them at higher risk for Sexually Transmitted Infections such as Human Immunodeficiency Virus (HIV) infection and Viral Hepatitis [17]. These disparities have also led to social problems among different MSM age groups, wherein elderly MSM individuals face additional barriers to health because of isolation and a lack of social services and culturally competent providers, while younger MSM individuals suffer from the lack of support from families or communities driving them to homelessness [18]. These disparities have been largely attributed to the higher exposure of MSM social stress related to prejudice and stigma [19]. Previous studies have revealed that prejudice and discrimination-related stressful life events were higher among MSM such as being attacked, fired, microaggressions, rejection, and devaluation [20].

#### *Significance*

Health disparities experienced by the MSM community include higher rates of alcohol use disorder. Several studies have examined the factors associated with MSM Alcohol Use Disorder in several settings and methodologies. This analysis summarized the results available primary research information and data to be able to provide a comprehensive understanding of the factors associated with Alcohol Use Disorder among MSM.

#### **Methodology**

To review the articles related to Alcohol Use Disorder and its associated factors among MSM, a literature study was done. References were collected through a PubMed search using the keywords “Associated” or “Risk” and “factors

among MSM” combined with “alcohol” and “abuse”, “use disorder” or “addiction”. Articles were selected based on the following criteria: 1. The article should focus on the MSM population, 2. The article should include factors related to Alcohol Use Disorder, 3. The article should be primary research wherein the researchers collected

data directly from MSM participants/respondents. All secondary data articles, editorials, and opinion pieces were excluded from this review. Interventional studies such as clinical trials were also excluded.

A total of 85 papers were displayed by the PubMed Search. 21 out of 85 papers were selected based on the population of the study which was MSM. Out of the 21 papers about MSM, a thorough review of each article was done to select only articles which dealt with associated factors of alcohol use disorder. After the review, 6 of the articles were removed since they tackled sexual and behavioral factors associated with HIV infection, 1 of the article was removed since it was about the associated factors of other substance use disorder, and lastly, another 2 articles were removed since these were interventional study regarding Alcohol Use Disorder treatment. The remaining 12 articles were reviewed to extract the associated risk factors contributing to Alcohol Use Disorder among MSM. After extracting the factors, these factors were arranged into themes.

**Results**

Alcohol Use Disorder was defined in most studies as problematic alcohol use. The reviewed studies were conducted from the year 2010 to 2019. Most

of these were done in American Countries. The sample size ranged from 51 to 8452 with most representing a national or state representative population. All of the studies were quantitative studies. Most of the research instruments used to measure Alcohol Use Disorder were internationally recommended instruments including the AUDIT and CAGE [21]. On the other hand, associated factors were mostly measured using adapted and/or self-made questionnaires.

This review showed that several social and demographic factors were associated with Alcohol Use Disorder among MSM including age, education, employment, income, migration, living situation, family structure, social network, and sexual orientation. Experiences of abuses were also associated with Alcohol Use disorder.

Certain sexual behaviors also had an association including a high number of sexual partners and unprotected sexual intercourse [22]. HIV-related factors such as self-perception of HIV risk and having HIV infection were also found to be associated with Alcohol Use Disorder. Other mental health conditions such as depression, anxiety, and use of other substances of abuse also had associations. Lastly, never accessing alcohol treatment was also associated with Alcohol Use Disorder (Table 1).

**Table 1: Reviewed Studies and Associated Factors of Alcohol Use Disorder among MSM**

<b>Author and Year of Publication</b>	<b>Location</b>	<b>Sample Size (n)</b>	<b>Study Design and Measures/ Tools/ Scales</b>	<b>Associated Factor of Alcohol Use Disorder among MSM</b>
Grosso et al. (2018) [11]	United States	8452	Quantitative AUDIT-C, GAD-2, PHQ-2, Kinsey Scale	<ul style="list-style-type: none"> <li>• Education: Men without a college degree</li> <li>• Living Situation: Housing instability</li> <li>• Insurance: Lack of health insurance</li> <li>• Sexual orientation: Behaviorally bisexual in the past 12 months</li> <li>• Sexual behavior: High number of lifetime male anal sex partners</li> </ul>

				<ul style="list-style-type: none"> <li>• Other Mental Health Conditions: Depression; Anxiety</li> </ul>
Liu et al. (2016) [12]	China	3588	Quantitative, AUDIT-C	<ul style="list-style-type: none"> <li>• Age: Older age</li> <li>• Employment: Being employed</li> <li>• Income: higher income</li> <li>• Migration: Being migrants; living longer from township/village of origin</li> <li>• Sexual behavior: Sex-finding via non-Internet venues</li> <li>• HIV related: Self-perceived low/no HIV risk</li> </ul>
Tan et al. (2017) [13]	Dominican Republic	220	Quantitative Social Network Interview (SNI), In-person survey of demographic and behavioral characteristics	<ul style="list-style-type: none"> <li>• Employment: Not a religious or spiritual adviser</li> <li>• Family structure: Had children;</li> <li>• Social Network: At least one social network member who worked full-time or part-time; Lower density of the social network</li> <li>• Sexual behavior: Engagement in transactional sex; illicit substance use during a sexual encounter.</li> </ul>
Tobin et al. (2014) [14]	United States	51	Quantitative, Socio-spatial inventory	<ul style="list-style-type: none"> <li>• Living Situation: Living in the inner part of the city</li> </ul>
Vagenas et al. (2014) [15]	Peru	5148	Quantitative, Computer-assisted risk assessments, HIV and syphilis testing	<ul style="list-style-type: none"> <li>• HIV related: Being unaware of having HIV-infection</li> </ul>

<p>Folch et al. (2010) [16]</p>	<p>Spain</p>	<p>1166</p>	<p>Quantitative. The questionnaire used was adapted from a questionnaire developed and validated by the Lausanne University</p>	<ul style="list-style-type: none"> <li>• Age: Younger age (19 to 25);</li> <li>• Abuses: verbal assault/aggression; internalized homophobia</li> <li>• Sexual behaviors: High number of male partners; Lack of stable partner (stable partner is protective); Being engaged with casual sex partners</li> <li>• HIV related: Having HIV</li> <li>• Other Mental Health Conditions: Use of other substance of abuse; Higher frequency of other substance of abuse</li> </ul>
<p>Marshall et al. (2015) [17]</p>	<p>United States</p>	<p>4075</p>	<p>Quantitative                  Number of Heavy Episodic Drinking Scale, CAGE, CES-D-SF scale, Social and Substance Use Characteristic Scale</p>	<ul style="list-style-type: none"> <li>• Age: Younger age</li> <li>• Race: white</li> <li>• Education: Lower educational attainment</li> <li>• Abuse: Childhood sexual abuse</li> <li>• Other Mental Health Conditions: Depressive symptoms; Stimulant use</li> </ul>
<p>Santos et al. (2015) [18]</p>	<p>United States</p>	<p>510</p>	<p>Quantitative                  A behavioral survey containing measures on demographics, sexual behavior, substance use, and STI</p>	<ul style="list-style-type: none"> <li>• Age: younger age</li> <li>• Income: modest income</li> <li>• Migration: being born in the United States</li> <li>• Sexual behaviors: unprotected insertive anal intercourse</li> <li>• Previous treatment: never accessing Alcohol Use Disorder treatment</li> </ul>
<p>Ogbuaguet al. (2019) [19]</p>	<p>United States</p>	<p>172</p>	<p>Quantitative, AUDIT-C</p>	<ul style="list-style-type: none"> <li>• Age: Younger age</li> <li>• HIV-related: taking Pre-exposure prophylaxis for HIV</li> <li>• Other mental health conditions: Use of other</li> </ul>

				substances of abuse
Deiss et al. (2013) [20]	Peru	718	Quantitative CAGE	<ul style="list-style-type: none"> <li>• Age: Younger age</li> <li>• Sexual Behaviors: failing to use condoms; use alcohol or substance of abuse before sexual encounter; Engagement in transactional sex; High number of sexual partners</li> </ul>
Reisner et al. (2010) [21]	United States	197	Quantitative, CAGE, CES-D	<ul style="list-style-type: none"> <li>• Other mental health conditions: Depression</li> <li>• Sexual Behaviors: serodiscordant unprotected anal sex; unprotected anal or vaginal sex with a female partner</li> </ul>
Martinez et al. (2016) [22]	United States	176	Quantitative, Self-made Syndemic scale	<ul style="list-style-type: none"> <li>• Abuses: sexual abuse; intimate partner violence; discrimination</li> <li>• Sexual Orientation: same-sex relationship</li> <li>• Sexual Behaviors: multiple sexual partners</li> <li>• Other Mental Health Conditions: Depression</li> </ul>

*Legend: AUDIT-C – Alcohol Use Disorder Identification Test – Concise; GAD-2 – Generalized Anxiety Disorder 2-item; PHQ-2 - Patient Health Questionnaire-2item, CAGE – CAGE Questionnaire; CES-D-SF - Center for Epidemiologic Studies Depression Scale – Short Form; CES-D - Center for Epidemiologic Studies Depression Scale*

**Discussion**

*Social and Demographic Factor*

This review found several social and demographic factors related to Alcohol Use Disorder among MSM. The age at risk for Alcohol Use Disorder was both the young and the elderly MSM individuals with most studies pointing that the youth at higher risk. This finding is similar to findings in the general population that Alcohol Use

Disorder is more likely to occur during the mid-teens to mid-20s 20s [23]. The younger MSM individuals may be at higher risk due to their high risk-taking and exploratory behaviors compared to other age groups [24].

Lower educational attainment, particularly lack of a college degree, was associated with Alcohol Use Disorder among MSM. Higher education usually leads to better lifestyle behavior since a better

education leads to well-informed decisions regarding lifestyle choices including the moderate use of alcoholic beverages [25]. Contrasting findings were found for employment, income, and migration. In China, the associated factor of Alcohol Use Disorder among MSM was being employed, being a migrant, and having higher income. On the contrary, in the United States, unemployment in the form of retirement, being born in the United States, and lower income were associated with Alcohol Use Disorder among MSM individuals. This contradiction may be partly explained by cultural differences between Asian and Western countries. Wherein, the stresses from difficulties with work-life balance and leaving one's closely knitted communities may be higher in Asian countries leading to possible self-medication of alcohol beverages due to its calming effects [26]. The nature of one's employment and occupation should also be considered, in particular, occupations based on a certain religion that promotes moderation of lifestyle behaviors including alcohol intake may mitigate problematic alcohol use [27].

A study in the United States found that having a White racial background was associated with a higher risk for Alcohol Use Disorder among MSM. This may be due to the slower metabolism of Whites compared to other racial backgrounds. The ADH1B alcohol degradation is found in more than 90% of the white population compared to less than 10% of East Asians [28]. This slower metabolism leads to a higher risk of everyday drinking, heavy drinking, and excessive drinking. Unique to MSM individuals, it was found that engaging in homosexual and bisexual behaviors was associated with the development of Alcohol Use Disorder among MSM. Likewise, certain social situations such as lack of health insurance, housing instability, having children, and low social network were also contributory factors to Alcohol Use Disorder. These associated factors have been attributed to the higher discrimination and stigma faced due to the sexual minority background of MSM individuals. Moreover, protective factors such as the presence of children may increase

social support that can be protective of Alcohol Use Disorder in the general population. However, MSM families may face further stigmatization and social stresses due to its conflict with societal heteronormative views of parenting. In general, several social and demographic factors that may be similar to the general population and unique to the MSM population were associated with higher Alcohol Use Disorder [28]. These can be explained by higher risk-taking behavior differences among age groups, better decision making for those well-educated, cultural differences between nations, enzyme differences according to race, and discrimination and stigma related to the MSM's sexual minority background.

### *Abuses*

Abuses have been known to associate with many mental health problems including substance use disorders. In this review, it was found that Alcohol Use Disorder was associated with abuses similar to the general population. In particular, it was found that previous experiences of sexual abuse, psychological abuse, and physical assault predisposed MSM to Alcohol Use disorder. However, findings related to abuse that may be limited to the MSM population were also found to associate with higher rates of problematic alcohol use. In a study in the United States in 2016, it was noted that internalized homophobia or the negative attitude towards oneself due to one's homosexual orientation, and discrimination were associated with propensity for Alcohol Use Disorder. Excessive and problematic alcohol use may be a form of coping for people who experienced higher rates of social stress. In particular, Alcohol's effect on Gamma-Aminobutyric Acid (GABA) receptors may account for its calming and relaxing effect in the face of daily adversities in one's social environment. Thus, the distress brought about by abuses may be self-medicated with Alcohol. Notably, abuses and discrimination committed against MSM have been reported higher than the general population. Given the relationship between abuse and Alcohol Use Disorder, the higher rates of abuse and discrimination may partly explain the

worse health disparities that MSM experiences in terms of alcohol use disorder.

### *Sexual Behaviors*

Globally, MSM remains one of the key populations affected by the HIV epidemic. Given this global affectation and Alcohol's effect on disinhibiting sexual behaviors that may put a person at higher risk for STIs including HIV, it was unsurprising for studies on alcohol use disorder among MSM to include risky sexual behaviors among their studied variables.

In light of these, several of the reviewed studies have found that risky sexual behaviors were found to be associated with MSM alcohol use disorder. These risky were sex-finding *via* non-Internet venues, failing to use condoms, use alcohol or substance of abuse before sexual encounter, serodiscordant unprotected anal sex, unprotected anal or vaginal sex with a female partner, a high number of lifetime male sex partners (from more than 10 to more than 500), multiple sexual partnerships, lack of a stable sexual partner, casual sex partners, and engagement in transactional sex/sex work either as a service provider or consumer. Although most of these studies did not explore the cause and effect relationship between alcohol and sexual behaviors, it can be posited that alcohol's effect on disinhibiting behaviors may be a cause of the risky sexual behaviors of MSM. In light of these relationships, Alcohol Use Disorder may indirectly contribute to the HIV epidemic through its effect on sexual behaviors.

### *HIV-Related Factors*

Similar to sexual behaviors, several studies in this review have revealed the association of Alcohol Use Disorder with HIV-related factors. This focus on HIV may also be a consequence of the higher rates of HIV among MSM [29]. The factors relating to HIV infection that associated with higher Alcohol Use Disorder were self-perceived low/no HIV risk, taking Pre-exposure prophylaxis for HIV, and having HIV itself. A person with self-perceived low HIV risk may have higher risky

sexual behaviors, especially when disinhibited by alcohol's biological effect. This is supported by the findings of the reviewed studies on the relationship between alcohol use and sexual behaviors. Alcohol use disorder has also been associated with HIV itself. This may be explained by the inherent stigma that leads to higher distress among people living with HIV, wherein, distress may be lowered by alcohol's effect. This review also presented a paradox regarding HIV and Alcohol Use disorder. Alcohol use disorder may heighten one's engagement in risky sexual behaviors and its consequential risk for HIV, while it may also lower it through its association with HIV Pre-exposure prophylaxis. This paradox may be explored by further studies. However, it should be noted that MSM may also be at risk for other STIs associated with Alcohol Use disorder similar to the general population.

### *Other Mental Health Condition*

It was also found that alcohol use disorder among MSM was associated with, and anxiety symptoms. These associations were similar to the findings among the general population. However, it should be noted that alcohol use disorder among the general population was also associated with other mental health conditions including conduct disorder, Attention-Deficit/Hyperactivity Disorder, Personality disorders, Schizophrenia, and Bipolar disorder. These associations may be partly explained by the effects of alcohol to moderate and/or decrease the symptoms and manifestations of these other mental health conditions through its biological effects. In particular, alcohol decreases feelings of nervousness and helps with the day-to-day stresses of life. Moreover, these associations can also be attributed to the similarities in the risk factors between Alcohol Use Disorder and these other mental health conditions such as social adversities and coping styles.

Problematic use of other substances of abuse as well as the possible presence of other substance use disorders was also associated with alcohol use disorder among the MSM community. This review found that alcohol use disorder was associated with the use of any illicit substances during sexual



encounters and a high frequency of use of other substances of abuse. These findings were also similar to those in the general population. These associations may be explained by the shared risk factors of other substance use disorders and alcohol use such as higher novelty-seeking behaviors, higher stresses, peer pressure, and curiosity. Alcohol and other substances of abuse may also be used to self-medicate distress and other mental disorder symptoms.

#### *Previous Alcohol Use Disorder Treatment*

Unsurprisingly, this review also found that those who did not receive alcohol use disorder treatment in the past were at higher risk for the maintenance of alcohol use disorder. Thus, Alcohol Use Disorder may remain pervasive among MSM unless actively addressed. This may present as a challenge for MSM since it was previously noted that they had difficulty accessing health services and treatment.

#### **Conclusion**

Overall, this study found that several factors that may be similar and unique to the MSM population were associated with alcohol use disorder. These factors include social and demographic factors, abuses, sexual behaviors, HIV-related factors, other mental health conditions, and previous alcohol use disorder treatment. The relationship between alcohol use disorder and these factors may be explained by the influences of Alcohol's biological factors, shared risk factors such as adverse social experiences based on their sexual minority background, cultural differences, and coping styles such as self-medication. Moreover, these factors may also heighten an MSM individual's risk for other health conditions such as HIV, other STIs, and other mental health conditions.

Nonetheless, this review also had some limitations. Several associated factors seen in the general population were not found in the reviewed studies. These include the cultural acceptability of alcohol

use, public availability of alcohol, peer with substance use disorder, and family history of alcohol use disorder. Cultural acceptability toward alcohol drinking, intoxication/ drunkenness, and personal responsibility for consequences were important contributors to the different prevalence rates of alcohol use disorder in different societies. The availability and affordability of alcohol in the community also increased the rates of Alcohol Use Disorder. Having a peer who also uses alcohol may also increase the propensity for alcohol use disorder. Alcohol Use Disorder also tended to run in families, with 40%-60% of the variance of risk explained by genetic influences. In light of these, future studies can explore these other factors that may associate with alcohol use disorder among the MSM population through quantitative and qualitative methods. Moreover, the reviewed studies also did not explore the causal relationship between.

Alcohol use disorder and its associated factors. Thus, future studies can also explore the causal relationship of the associated factors and Alcohol Use Disorder among MSM. Likewise, most of the reviewed studies were done in the Americas, hence, exploring the factors associated with alcohol use disorder among MSM in different geographical places, cultures, and locations is also recommended. Most of these studies also assumed that the clinical phenomenology of alcohol use disorder is similar to that of the general population. Hence, conducting studies that explore the clinical phenomenology of alcohol use disorder in this specific population may elucidate unique elements and presentation of the disorder. These can be done through ethnography, observational studies, and other research methods. Importantly, this review was done using a single database. This can be addressed through reviewing other databases that may also contain studies regarding Alcohol Use Disorder among MSM. Lastly, the data and information gathered from studies should help guide future policies, laws, programs, interventions, and researches aimed at addressing and improving health disparities and outcomes of MSM who have alcohol use disorder.

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### Conflict of Interest

None

### Authorship Statement

The corresponding author of this study confirms that the listed author had substantial contributions to the conception of the work, analysis, and interpretation of data for the work. The listed author drafted the work and revised it critically for important intellectual content. The listed author also confirms that he had final approval of the version to be published. Finally, the listed author agrees to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

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