

## Assessment of Common Mental Disorders in Patients with Alcohol use Disorder

Dr. Rashika C P<sup>1\*</sup>, Dr. Geetha Jayaprakash<sup>2</sup>, Dr. Smitha<sup>3</sup>

<sup>1</sup>Pharm D, Acharya & BM Reddy College of Pharmacy, Bengaluru -560090, Karnataka, India

<sup>2</sup>Assistant Professor, Department of Pharmacy Practice, Acharya & BM Reddy College of Pharmacy, Bengaluru -560090, Karnataka, India

<sup>3</sup>Professor, Department of Psychiatry, ESIC MC& PGIMSR, Rajajinagar, Bengaluru, Karnataka, India

DOI: [10.36347/sajp.2023.v12i12.012](https://doi.org/10.36347/sajp.2023.v12i12.012)

| Received: 10.11.2023 | Accepted: 18.12.2023 | Published: 30.12.2023

\*Corresponding author: Dr. Rashika C P

Pharm D, Acharya & BM Reddy College of Pharmacy, Bengaluru -560090, Karnataka, India

### Abstract

### Original Research Article

Alcohol use disorder (AUD) is a pattern of alcohol use that involves problems like controlling drinking, being preoccupied with alcohol, continuing to use alcohol even when it causes problems, urge to drink more to get the same effect and having withdrawal symptoms when discontinued abruptly. According to the World Health Organization (WHO), there are approximately two billion alcoholic beverage consumers and 76.3 million people worldwide with diagnosable alcohol-use disorders. Co-occurrence of alcohol use disorders with common mental disorders, such as depression, anxiety, stress and bipolar disorder, is relatively common. Individuals with alcohol-related problems can be more vulnerable to develop mental health disorders and vice versa which is a significant public health concern globally. The purpose of this study was to evaluate AUD as the primary disorder, in which people start drinking alcohol as a social habit and progress to chronic alcoholism, which can lead to the development of common mental disorders (CMD) such as depression, anxiety, and stress. The study was carried in ESIC hospital's inpatient general medicine department in Bengaluru. A self-designed data collection form and validated questionnaires were used to collect data for an educational observational study involving 87 patients. According to the study, 74.7% of 87 AUD patients had minimal anxiety, 72.41% had mild depression, and 59.7% had mild stress. The majority of the AUD population was low-income, illiterate, and self-employed. This study contributes to a better understanding of the relationship between Alcohol Use Disorder (AUD) and Common Mental Disorders (CMD) in relation to patients' socio-demographics which can aid in the early detection of individuals at risk, design targeted interventions, and the implementation of preventive measures to address the co-occurrence of these disorders eventually leading to improved public health outcomes.

**Keywords:** Alcohol use disorder, Common mental disorders, Depression, Anxiety, Stress, Alcohol and Mental health.

**Copyright © 2023 The Author(s):** This is an open-access article distributed under the terms of the Creative Commons Attribution 4.0 International License (CC BY-NC 4.0) which permits unrestricted use, distribution, and reproduction in any medium for non-commercial use provided the original author and source are credited.

## INTRODUCTION

Drinking alcohol as a social habit can lead to alcoholism, which causes significant physical and mental health problems. Alcoholism is not a diagnosable condition. The most common diagnostic categories are alcohol use disorder, alcohol dependence, and alcohol withdrawal syndrome [1]. According to the 32nd World Health Assembly, "problems related to alcohol, particularly its excessive consumption, rank among the world's major public health problems and pose serious threats to human health, welfare, and life" [2]. According to the World Health Organization (WHO), there are approximately two billion alcoholic beverage consumers and 76.3 million people worldwide with diagnosable alcohol-use disorders. In 2019, 14.1 million adults aged

18 years and up owned AUD, according to a national survey. During this time period, an estimated 414,000 adolescents aged 12 to 17 years had alcohol use disorder [3]. According to the studies, alcohol misuse, which includes binge drinking and heavy alcohol use over time, increases the risk of AUD. People who started drinking before the age of 15 were 5 times more likely to have AUD than those who started drinking after the age of 21. Females in this group face a higher risk than males. Family history of alcoholism is approximately 60%, where genetics play a role. The drinking habits of parents may also influence the likelihood that a child may develop AUD. A history of trauma, mental health issue, variety of psychiatric conditions, including depression, post-traumatic stress disorder, and attention deficit hyperactivity disorder, are associated with an increased

risk of developing AUD [4].

Common mental disorders (CMDs) are the most common types of mental illnesses in both developed and developing countries. CMD is a group of distress states characterized by anxiety, depression, and unexplained somatic symptoms that are commonly seen in community and primary care settings. CMDs now account for 14% of the total disease burden. The global prevalence of CMDs is increasing, particularly in low-income countries, as the population grows and more people reach the age of 20 when depression and anxiety are most common. It is expected to be the leading cause of disease burden by 2030. Alcohol use disorders' (AUDs) occurring together with common mental disorders (CMDs) are common and have been recognized worldwide as a crucial public health concern [6]. Comorbidity of mental illness and alcohol use disorder (AUD) has become common in psychiatric clinical practice. Both disorders have a negative impact on the general population's health-related quality of life. AUDs and CMDs, alone or in combination, can cause problems such as damaged relationships, poor academic performance, legal issues, and decreased overall health conditions. In general, AUDs and CMDs can have a significant impact on the health of individuals, as well as their families and communities. The coexistence of harmful AUD and CMDs affects the course, severity, and outcomes of both disorders, as well as treatment outcomes, and contributes to a poor prognosis for both sets of disorders.

AUD patients are prone to develop common mental disorders [CMD] like Depression, Anxiety and Stress which is recognized as a public health concern [6]. This study focused on AUD as the primary disorder, which may lead to the development of common mental disorders (CMD) such as depression, anxiety, and stress. Common mental disorders were screened using patient health questionnaires for depression, anxiety, and perceived stress scales. The study can provide useful insights into various aspects like, timely screening of common mental disorders and counselling among alcohol use disorder patients to improve their quality of life.

## MATERIALS AND METHODS

**Study Centre:** The study was carried out in the inpatient Department of General Medicine, ESIC PGIMSR, Rajajinagar, Bengaluru.

**Sample Size:** A total of 87 subjects were interviewed and were selected for the study.

**Study Duration:** Study was conducted for a period of 6 months.

### Inclusion Criteria:

- a. Subject willing to participate in the study
- b. Subjects who are having alcohol use disorder

- according to DSM-5 criteria
- c. Any gender.
- d. Age above 18 years.

### Exclusion Criteria:

- a. Subjects with history of common mental disorder before diagnosing with alcohol use disorder.

### Study Tools:

The following tools were employed to obtain information pertaining to the study:

1. Informed consent form.
2. Self-designed patient demographic form.
3. DSM-5(diagnostic and statistical manual of mental disorders) tools to identify and assess severity of,
  - Depression- patient health questionnaire for depression
  - Anxiety- patient health questionnaire for anxiety
  - Stress- perceived stress scale

### Ethical Approval:

The study was approved by Institutional Ethics Committee of ESIC PGIMSR, Rajajinagar, Bengaluru in accordance with the guidelines issued by ICMR. (No.532/L/11/12/Ethics/ESICMC&PGIMSR/Estt.Vol.-IV)

### Study Procedure:

Subjects for the study were identified by the investigators from the inpatient ward during their visit to the hospital based on the inclusion and exclusion criteria. The participants were explained the purpose of the study and consent was obtained. Relevant data was recorded from the data collection form. The subjects were administered with other DSM 5 tools to obtain relevant information on depression, anxiety and stress. The data so obtained was entered into a Microsoft excel sheet and appropriate analysis was performed.

### Statistical Analysis:

All recorded data was entered in MS Excel software and analyzed. The results were expressed in portions and descriptive statistics was applied for analyses of quantitative variables. Distribution of data was represented by using pie-charts and bar graphs. Chi-square test was used to compare the association between alcohol use disorder and common mental disorders.

## RESULTS

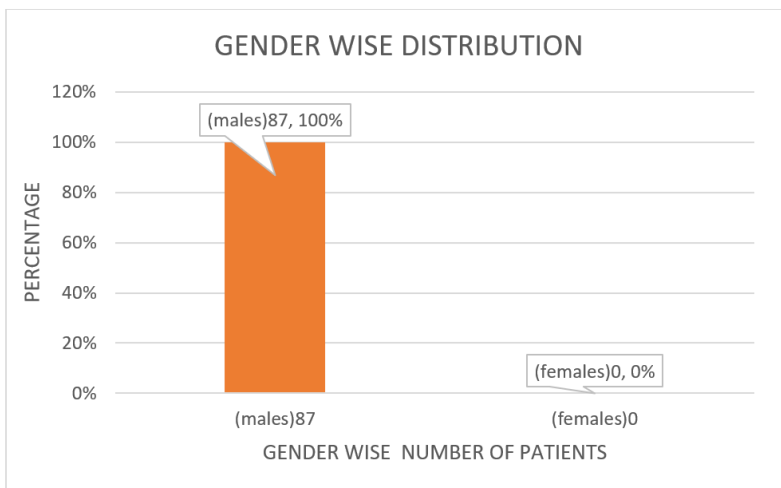
The study was conducted in inpatient general medicine department of ESIC hospital. The study was carried out for a period of three months, and a total of 87 samples were collected.

### Distribution of Subjects According to Gender

Out of 87 subjects, all 87 were male and 0 female as shown in the table (Table 1).

**Table 1: Distribution of subject's - gender wise**

Gender	Number of subjects	Percentage
Male	87	100%
Female	0	0%
<b>Total</b>	<b>87</b>	<b>100%</b>



**Figure 1: Distribution of subjects - gender wise**

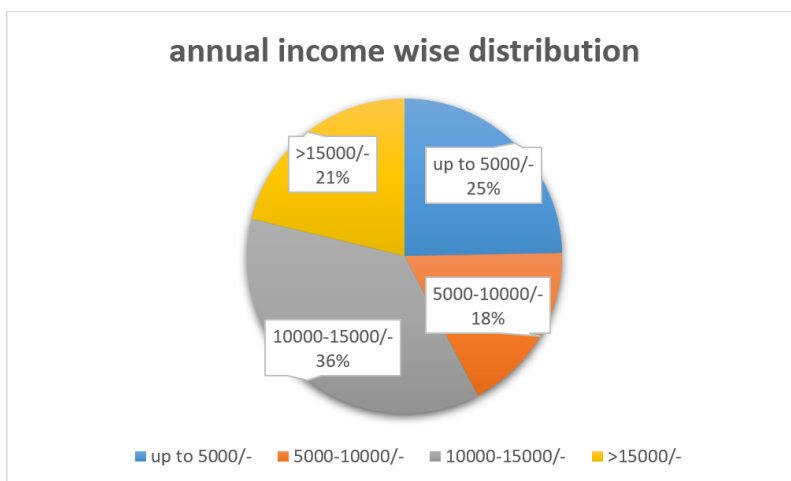
**Distribution of Subjects According to Annual Income**

Out of 85 responses obtained, 21 (24.70%) were having annual income up to 5000/-, 15 (17.60%) were having annual income from 5000-10000/-, 31(36.50%)

were having annual income 10000-15000/- and 18 (21.20%) were having annual income >15000 as shown in the table (Table 2).

**Table 2: Distribution of subjects - annual income wise**

Annual Income	Number of subjects	Percentage
Up to 5000/-	21	24.70%
5000-10000/-	15	17.60%
10000-15000/-	31	36.50%
>15000/-	18	21.20%
<b>Total</b>	<b>85</b>	<b>100%</b>



**Figure 2: Distribution of subjects - annual income wise**

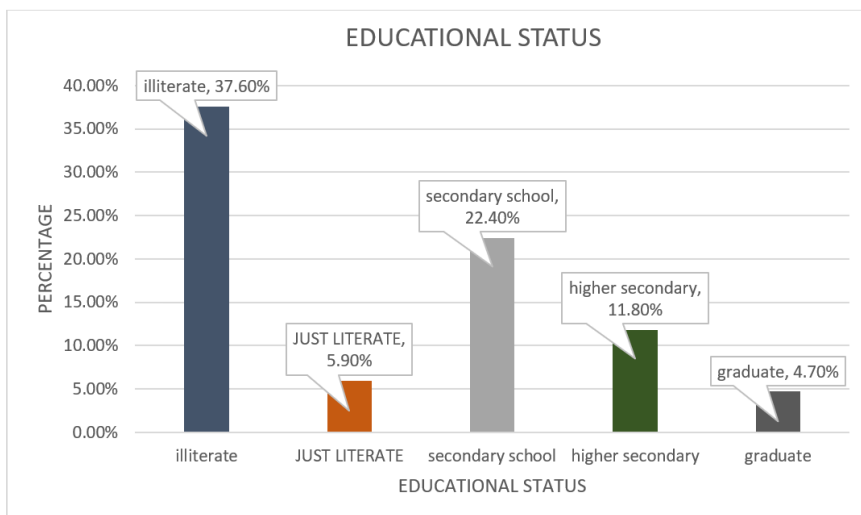
**Distribution of Subjects According to Educational Status**

Out of 85 responses obtained, 32 (37.6%) were illiterate, 20 (23.50%) were just literate, 19 (22.40%)

completed secondary school, 10 (11.80%) completed higher secondary and 4 (4.70%) were graduates as shown in be table (Table 3).

**Table 3: Distribution of subjects - educational status wise**

Educational status	Number of respondents	percentage
Illiterate	32	37.6%
Just literate	20	23.50%
Secondary school	19	22.40%
Higher secondary	10	11.80%
Graduate	4	4.70%
<b>Total</b>	<b>85</b>	<b>100%</b>



**Figure 3: Distribution of subjects - educational status wise**

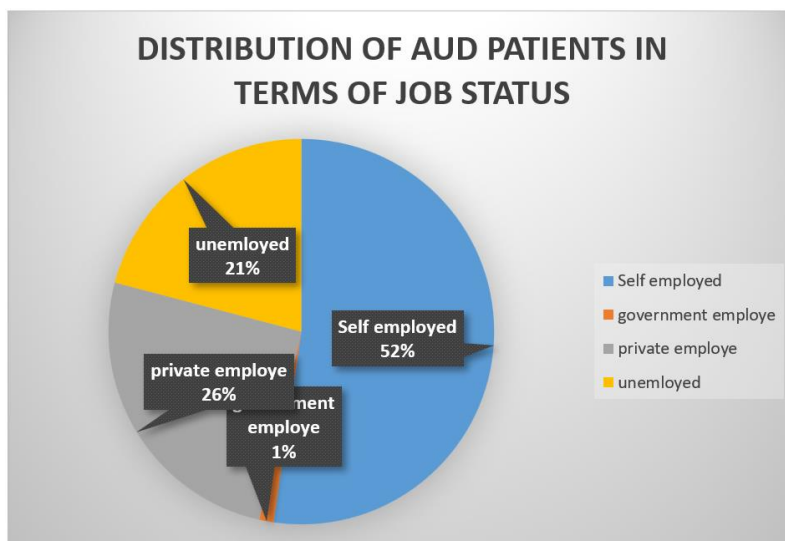
**Distribution of Subjects According to Job Status**

Out of 86 responses obtained, 45(52.30%) were self-employed, 1(1.20%) was government employer,

22(25.60%) were private employers and 18(20.90%) were unemployed as shown in the table (Table 3).

**Table 4: Distribution of subjects based on job status**

Job status	Number of respondents	Percentage
Self employed	45	52.30%
Government employer	1	1.20%
Private employer	22	25.60%
Unemployed	18	20.90%
<b>TOTAL</b>	<b>86</b>	<b>100%</b>



**Figure 4: Distribution of subjects based on job status**

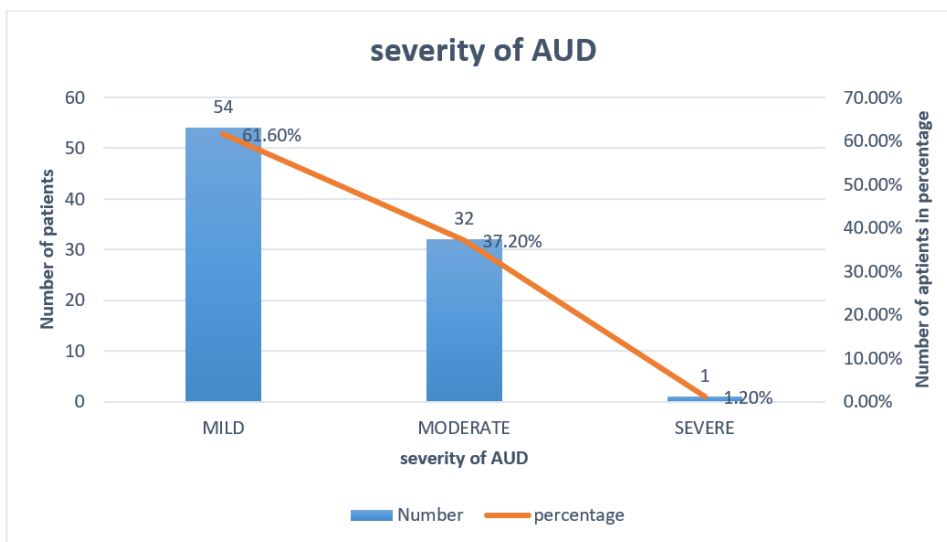
**Distribution of Subjects with Severity of Alcohol use Disorder (AUD)**

Out of 87 responses obtained, 54(61.60%) had

mild alcohol use disorder, 32(37.20%) had moderate alcohol use disorder and 1(1.20%) had severe alcohol use disorder (Table 5).

**Table 5: Distribution of subjects with respect to severity of AUD**

Severity of AUD	Number of patients	Percentage
MILD	54	61.60%
MODERATE	32	37.20%
SEVERE	1	1.20%
<b>TOTAL</b>	<b>87</b>	<b>100%</b>



**Figure 5: Distribution of subjects with respect to severity of AUD**

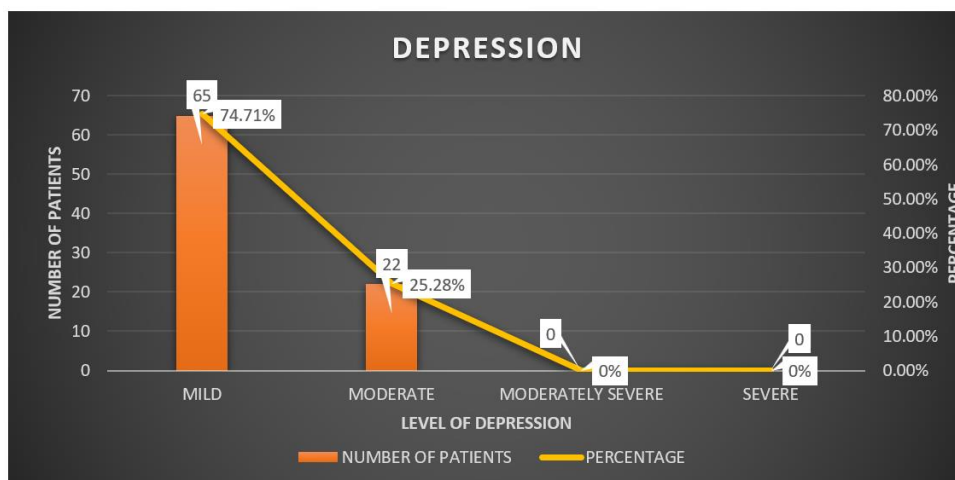
**Distribution of Subjects Having Depression**

Out of 87 responses obtained, 65(74.71%) had

mild form of depression and 22(25.28%) had moderate depression as shown in the table (Table 6).

**Table 6: Distribution of levels of depression among AUD subjects**

Level of depression	Number of patients	percentage
Mild	65	74.71%
Moderate	22	25.28%
Moderately severe	0	0%
Severe	0	0%
<b>TOTAL</b>	<b>87</b>	<b>100%</b>



**Figure 6: Distribution of levels of depression among AUD subjects**

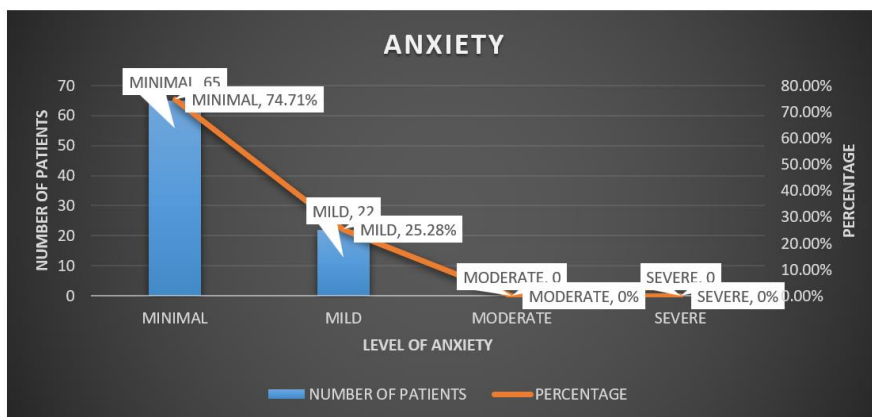
**Distribution of Subjects Having Anxiety**

Out of 87 responses obtained, 65(74.71%) had

minimal anxiety and 22(25.28%) had mild anxiety as shown in the table (Table 7).

**Table 7: Distribution of level of anxiety among AUD subjects**

Level of anxiety	Number of patients	percentage
Minimal	65	74.71%
Mild	22	25.28%
Moderate	0	0%
Severe	0	0%
<b>TOTAL</b>	<b>87</b>	<b>100%</b>



**Figure 7: Distribution of level of anxiety among AUD subjects**

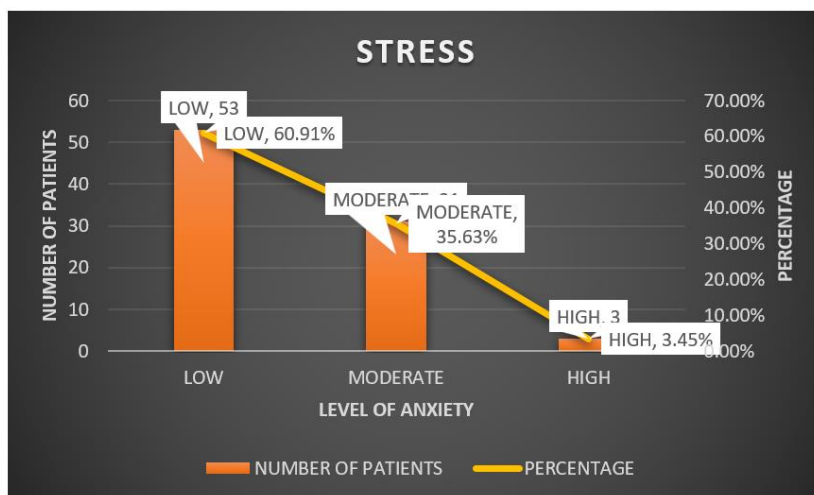
**Distribution of Subjects having Stress**

Out of 87 responses obtained, 53(60.91%) had

low stress, 31(35.63%) had moderate stress and 3(3.45%) had high stress as shown in the table (Table 8).

**Table 8: Distribution of level of stress among AUD subjects**

Level of stress	Number of patients	Percentage
Low stress	53	60.91%
Moderate stress	31	35.63%
High stress	3	3.45%
<b>TOTAL</b>	<b>87</b>	<b>100%</b>



**Figure 8: Distribution of level of stress among AUD subjects**

**Distribution of AUD Patients in Association with Depression**

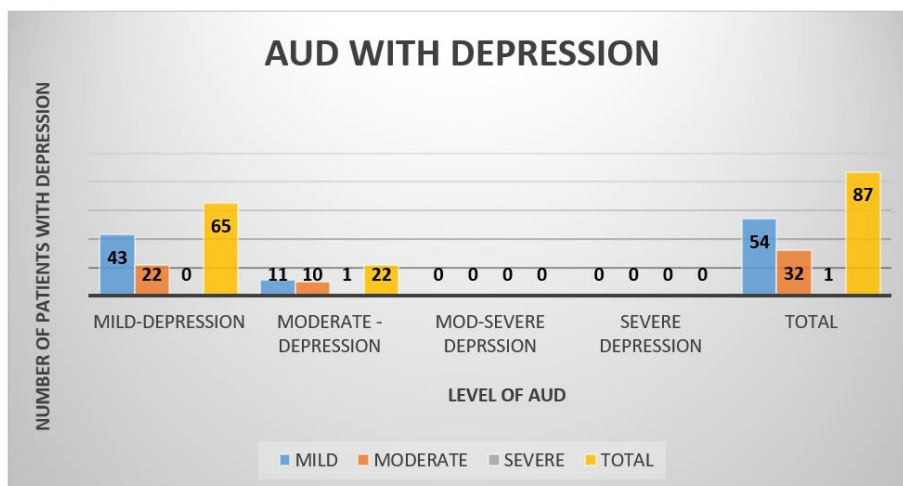
Out of 87 AUD patients, 54 patients with mild AUD of which 43 were having mild depression and 11

were having moderate depression. Out of 32 moderate AUD, 22 were having mild depression and 10 were having moderate depression. One patient with severe AUD had moderate depression.



**Table 9: Distribution of AUD subjects in association with level of depression**

AUD Level	Mild Depression	Moderate Depression	Moderately Severe Depression	Severe Depression	Total
Mild	43	11	0	0	54
Moderate	22	10	0	0	32
Severe	0	1	0	0	1
<b>Total</b>	<b>65</b>	<b>22</b>	<b>0</b>	<b>0</b>	<b>87</b>



**Figure 9: Distribution of AUD subjects in association with level of depression**

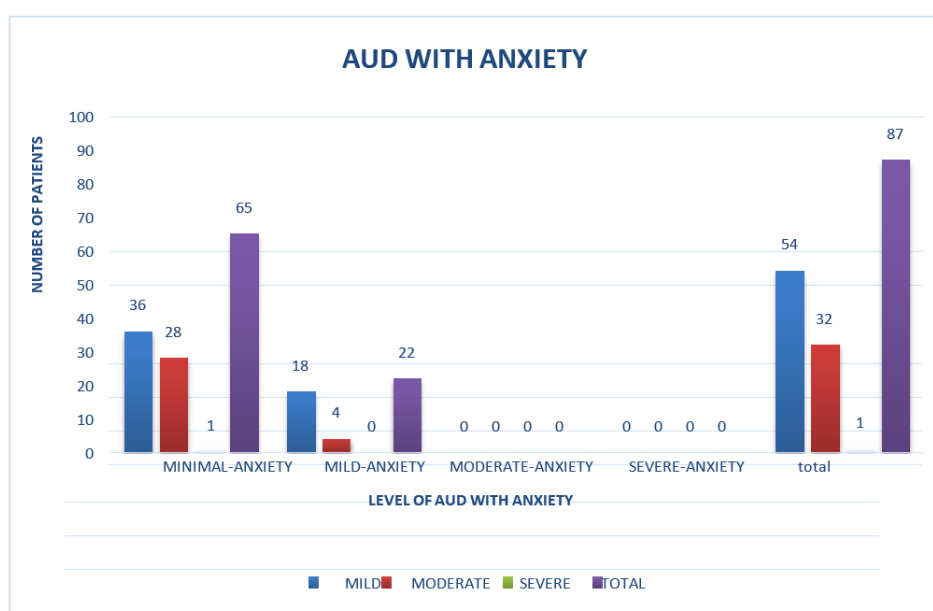
**Distribution of AUD Patients in Association with Anxiety**

Out of 87 AUD patients responded. 54 with mild AUD of which 36 were having minimal anxiety and

18 were having mild anxiety. Out of 32 moderate AUD, 28 were having minimal anxiety, 4 were having mild anxiety and one case of severe AUD had minimal anxiety.

**Table 10: Distribution of AUD subjects in association with level of anxiety**

AUD Level	Minimal Anxiety	Mild Anxiety	Moderate Anxiety	Severe Anxiety	Total
Mild	36	18	0	0	54
Moderate	28	4	0	0	32
Severe	1	0	0	0	1
<b>Total</b>	<b>65</b>	<b>22</b>	<b>0</b>	<b>0</b>	<b>87</b>



**Figure 10: Distribution of AUD subjects in association with level of anxiety**

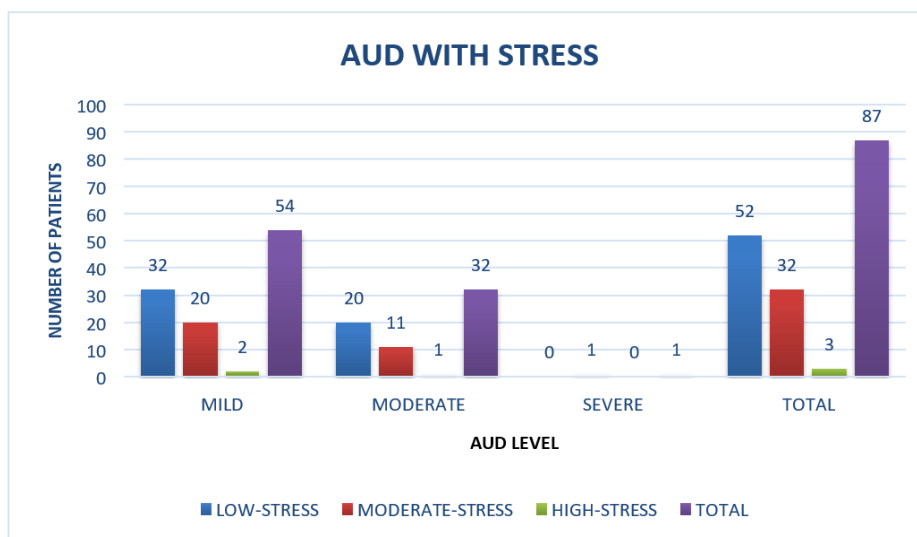
### Distribution of AUD Patients in Association with Stress

Total 87 AUD patients responded. In which out of 54 mild AUD, 22 were having low stress, 20 were

having moderate stress and 2 were having severe stress. Out of 32 moderate AUD, 20 were having low stress, 11 were having moderate stress and 1 severe stress. 1 case of severe AUD had 1 moderate stress.

**Table 11: Distribution of AUD subjects in association with levels of stress**

AUD Level	Low Stress	Moderate Stress	Severe Stress	Total
Mild	22	20	2	54
Moderate	20	11	1	32
Severe	0	1	0	1
<b>Total</b>	<b>52</b>	<b>32</b>	<b>3</b>	<b>87</b>



**Figure 11: Distribution of AUD subjects in association with level of stress**

## DISCUSSION

Of the included in the study all belong to male gender.

Out of 85 Alcohol use disorder patients responded for income status and educational status, 36.50% of subjects were having annual income status of 10000 to 15000/-, 24.70% were having annual income status of up to 5000/-, 21.20% were having annual income of >15000/-, 17.60% were having annual income status of 5000 to 10000/- and 37.6% were illiterates, 23.50% was just literate, 22.40% were completed secondary school, 11.80% were completed higher secondary and only 4.70% were graduates.

Job status response given by 86 Alcohol use disorder patients showed that, most of the AUD patients were self-employed (52.30%), 25.60% were private employers, 20.90% were unemployed and 1.20% was government employer.

Out of 87 patients responded, 61.60% were having mild alcohol use disorder, 37.20% were having moderate alcohol use disorder and 1.20% was having severe alcohol use disorder.

Association between AUD and CMDs based on DSM-5 scores levels of depression showed that 54 had mild AUD of which 43 had mild depression, 11 had

moderate depression. Out of 32 moderate AUD, 22 had mild depression, 10 had moderate depression and 1 case of severe AUD had moderate depression.

Association between AUD and CMDs based on DSM-5 scores levels of anxiety showed that 54 mild AUD of which 36 had minimal anxiety, 18 had mild anxiety, Out of 32 moderate AUD, 28 had minimal anxiety, 4 had mild anxiety and 1 case of severe AUD had minimal anxiety.

Association between AUD and CMDs based on DSM-5 scores levels of stress showed that 54 mild AUD of which 22 had low stress, 20 had moderate stress and 2 had severe stress. Out of 32 moderate AUD, 20 had low stress, 11 had moderate stress and 1 severe stress and 1 case of severe AUD had 1 moderate stress.

Comparisons between type of alcohol use disorder and depression, anxiety and stress were statistically analyzed using Chi-square test.

The chi-square score for comparison between type of AUD and depression was found to be 0.086 with the p-value of 0.9516 and the result was found to be non-significant.



The chi-square score for comparison between type of AUD and anxiety was found to be 0.0835 with the p-value of 0.9591 and the result was found to be non-significant.

The chi-square score for comparison between type of AUD and stress was found to be 0.7596 with the p-value of 0.943 and the result was found to be non-significant.

## LIMITATIONS

The study has certain limitations:

1. Sample size of the study was limited (87 subjects).
2. The study only represented subjects from single inpatient department from selected hospital.
3. Restricted or compromised data collection, due to lack of patient's knowledge, time or memory regarding the health status.
4. The study included only limited mental disorders assessment.

## CONCLUSION

This study focused on assessment of AUD (alcohol use disorder) as the primary disorder which might lead to development of common mental disorders (CMD) like depression, anxiety and stress. According to our findings, all the alcohol use disorder patients were of male gender. The AUD population had an association with the socio-demographics considered like annual income status, educational status and job status. Most of the AUD population were of low-income status, illiterate and self-employed. Tailoring mental health programs to specific socio-demographic groups can improve effectiveness, as cultural, economic, and social factors influence mental health. Understanding these factors can destigmatize mental health issues and promote acceptance.

Among the total AUD (alcohol use disorder) subjects 61.6% had mild AUD, 37.2% had moderate AUD and 1.2% had severe AUD.

Comparison between type of alcohol use disorder with depression, anxiety and stress were statistically analyzed using chi-square test. The result was not significant in finding association between alcohol use disorder and common mental disorder.

Co-occurring alcohol use and mental health disorders are a global concern, influenced by varying cultural attitudes towards alcohol use. These differences can impact the prevalence and management of these conditions, affecting mental health and overall health. AUD and mental disorders can lead to severe long-term consequences, necessitating early identification of risk factors, environmental stressors, coping mechanisms education, and interventions to reduce the likelihood of these outcomes. Timely screening of common mental disorder and counselling among alcohol use disorder

patients helps to improve their quality of life.

## ACKNOWLEDGEMENT

We would like to extend our sincere gratitude to everyone who has been involved with and supported this effort. Moreover, I would like to use this opportunity to express my gratitude to everyone who helped indirectly, to make this project a huge success.

## REFERENCES

1. Alcohol use disorder [Internet]. Mayo Clinic Family Health Book. 5<sup>th</sup> edition. [ cited 2022 Oct 26] Available from: <https://www.mayoclinic.org/diseases-conditions/alcohol-use-disorder/symptoms-causes/syc-20369243>
2. Problems related to alcohol consumption. WHO. NIAAA [cited 2022 Oct 26] Available from: <https://apps.who.int/iris/bitstream/handle/10665/41406/W?sequence=1>
3. Global status report on alcohol and health 2018 [cited 2022 Oct 26] Available from: <https://www.who.int/publications/i/item/9789241565639>
4. Understanding Alcohol Use Disorder from NIAAA [cited 2022 Oct 26] Available from: Understanding Alcohol Use Disorder | National Institute on Alcohol Abuse and Alcoholism (NIAAA)
5. Alcohol facts and statistics from NIAAA. March 2022 [cited 2022 Oct 29] Available from: <https://www.niaaa.nih.gov/publications/brochures-and-fact-sheets/alcohol-facts-and-statistics>
6. Abdu, Z., & Hajure, M. (2020). Correlation of alcohol use disorders with common mental disorders and its association with Socio-demographic characteristics among community in Ethiopia: A cross-sectional study. *Risk Management and Healthcare Policy*, 13, 2909– 2917. [cited 2022 Oct 26] Available from: <https://doi.org/10.2147/RMHP.S279590>
7. Depression definition and DSM-5 Diagnostic Criteria. *Psycom.net*. Retrieved November 30, 2022, [cited 2022 Oct 26] Available from: <https://www.psycom.net/depression/major-depressive-disorder/dsm-5-depression-criteria>
8. Substance Abuse. (2016). Table 3.15, DSM-IV to DSM-5 generalized anxiety disorder comparison. Substance Abuse and Mental Health Services Administration. [cited 2022 Oct 26] Available from: <https://www.ncbi.nlm.nih.gov/books/NBK519704/table/ch3.t15/>
9. Barnhill, J. W. Acute Stress Disorder. *MSD Manual Consumer Version*. Retrieved November 30, 2022, from <https://www.msdmanuals.com/en-in/home/mental-health-disorders/anxiety-and-stress-related-disorders/acute-stress-disorder>. [cited 2022 Oct 26] Available from: <https://www.msdmanuals.com/en-in/home/mental-health-disorders/anxiety-and-stress-related-disorders/acute-stress-disorder>

10. Luoto, K. E., Lindholm, L. H., Koivukangas, A., Lassila, A., Sintonen, H., Leinonen, E., & Kampman, O. (2021). Impact of comorbid alcohol use disorder on health-related quality of life among patients with depressive symptoms. *Frontiers in Psychiatry*, 12, 688136. [cited 2022 Oct 26] Available from: <https://doi.org/10.3389/fpsy.2021.688136>
11. Luitel, N. P., Baron, E. C., Kohrt, B. A., Komproe, I. H., & Jordans, M. J. D. (2018). Prevalence and correlates of depression and alcohol use disorder among adults attending primary health care services in Nepal: a cross sectional study. *BMC Health Services Research*, 18(1). [cited 2022 Oct 26] Available from: <https://doi.org/10.1186/s12913-018-3034-9>
12. Reisdorfer, E., Büchele, F., Pires, R. O. M., & Boing, A. F. (2012). Prevalence and associated factors with alcohol use disorders among adults: a population-based study in southern Brazil. *Revista Brasileira de Epidemiologia [Brazilian Journal of Epidemiology]*, 15(3), 582–594. [cited 2022 Oct 26] Available from: <https://doi.org/10.1590/s1415-790x2012000300012>
13. Burns, L., & Teesson, M. (2002). Alcohol use disorders comorbid with anxiety, depression and drug use disorders. *Drug and Alcohol Dependence*, 68(3), 299–307. [cited 2022 Oct 26] Available from: [https://doi.org/10.1016/s0376-8716\(02\)00220-x](https://doi.org/10.1016/s0376-8716(02)00220-x)
14. Bellos, S., Petrikis, P., Malliori, M., Mavreas, V., & Skapinakis, P. (2020). Prevalence of alcohol use disorders and their association with sociodemographic determinants and depression/anxiety disorders in a representative sample of the Greek general population. *Psychiatry Journal*, 2020, 4841050. [cited 2022 Oct 26] Available from: <https://doi.org/10.1155/2020/4841050>
15. Kessler, R. C., Crum, R. M., Warner, L. A., Nelson, C. B., Schulenberg, J., & Anthony, J. C. (1997). Lifetime co-occurrence of DSM-III-R alcohol abuse and dependence with other psychiatric disorders in the National Comorbidity Survey. *Archives of General Psychiatry*, 54(4), 313–321. [cited 2022 Oct 26] Available from: <https://doi.org/10.1001/archpsyc.1997.01830160031005>
16. Darrel A. Regier, et al., (1990). Researchgate.net. Retrieved November 30, 2022, [cited 2022 Oct 26] Available from: [https://www.researchgate.net/profile/Darrel\\_Regier/publication/277548847\\_Comorbidity\\_of\\_mental\\_disorders\\_with\\_alcohol\\_and\\_other\\_drug\\_abuse\\_Results\\_from\\_the\\_Epidemiologic\\_Catchment\\_Area\\_ECA\\_Study/links/57d1806c08ae601b39a1d936.pdf](https://www.researchgate.net/profile/Darrel_Regier/publication/277548847_Comorbidity_of_mental_disorders_with_alcohol_and_other_drug_abuse_Results_from_the_Epidemiologic_Catchment_Area_ECA_Study/links/57d1806c08ae601b39a1d936.pdf)
17. Saarni, S. I., Suvisaari, J., Sintonen, H., Pirkola, S., Koskinen, S., Aromaa, A., & Lönnqvist, J. (2007). Impact of psychiatric disorders on health-related quality of life: general population survey. *The British Journal of Psychiatry: The Journal of Mental Science*, 190(4), 326–332. [cited 2022 Oct 26] Available from: <https://doi.org/10.1192/bjp.bp.106.025106>
18. Castillo-Carniglia, A., Keyes, K. M., Hasin, D. S., & Cerdá, M. (2019). Psychiatric comorbidities in alcohol use disorder. *The Lancet. Psychiatry*, 6(12), 1068–1080. [cited 2022 Oct 26] Available from: [https://doi.org/10.1016/S2215-0366\(19\)30222-6](https://doi.org/10.1016/S2215-0366(19)30222-6)
19. Bridget F Grant et al., (2004). Prevalence and Co-occurrence of Substance Use Disorders and Independent Mood and Anxiety Disorders. Jamanetwork.com. Retrieved November 30, 2022, [cited 2022 Oct 26] Available from: <https://jamanetwork.com/journals/jamapsychiatry/fullarticle/482045>
20. Deborah S, Hasin, et al., (2007). Prevalence, correlates, disability, and comorbidity of DSM-IV alcohol abuse and dependence in the United States: results from the National Epidemiologic Survey on Alcohol and Related Conditions. [cited 2022 Oct 26] Available from: <https://pubmed.ncbi.nlm.nih.gov/17606817/>
21. Wang, J., Jiang, C., Chen, L., Wu, S., Lin, J., Gao, L., Xie, B., Zheng, D., Yang, R., Li, S., Pan, X., & Liao, Y. (2016). A cross-sectional study to investigate the correlation between depression comorbid with anxiety and serum lipid levels. *Comprehensive Psychiatry*, 69, 163–168. [cited 2022 Oct 26] Available from: <https://doi.org/10.1016/j.comppsy.2016.05>