

A Cross Sectional Study on Anxiety and Depression Among Patients with Alcohol Withdrawal Syndrome

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Abstract: One of the main factors in death and disability worldwide is alcohol. Alcohol usage accounts for almost 5.1% of the world's disease burden and kills close to 3.3 million people annually. Over time, alcohol usage can start to negatively impact anyone's physical and mental health. These side effects could be more severe and obvious. Heavy or prolonged alcohol consumption can affect cognitive functions and cause mental health deterioration. The study's objective was to measure the patients' levels of anxiety and Depression during alcohol withdrawal. A quantitative survey approach was used, and a descriptive design was adopted to assess anxiety and Depression among patients with alcohol withdrawal syndrome. The study was conducted at the Institute of Mental Health, Chennai. The population selected for this study was patients diagnosed with alcohol withdrawal syndrome admitted to the De-addiction ward. The sample size for this study was 30 patients diagnosed with alcohol withdrawal patient admitted to the de-addiction ward in Chennai. Data was collected using a demographic data sheet, and the Hamilton anxiety scale and Hamilton depression scale were used to assess the anxiety and Depression among alcohol withdrawal syndrome. Data analysis was done using descriptive Statistics and Inferential statistics. Among the participants, 46.6% experienced mild anxiety, 30% had moderate anxiety, and 23.3% had severe anxiety. Half of the participants reported low levels of depression, 23.3% had moderate depression, and 26.6% were severely depressed. Patients with alcohol dependence syndrome were shown to experience various degrees of anxiety and Depression, calling into question whether or not they were receiving proper treatment for psychiatric comorbidities.

Keywords: Alcohol Withdrawal Syndrome; Anxiety; Depression; De-Addiction Ward; Patients; Mental Health; Moderate Anxiety; Dependence Syndrome; Psychiatric Comorbidities.

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1. Introduction

The alcohol dependence syndrome is characterised by compulsive alcohol use and the inability to abstain from alcohol use. ICD-10 defines Dependence Syndrome as a collection of physiological, behavioural, and cognitive problems characterised by a person's making substance use a higher priority than previously valued activities. At least three of the following criteria must have been present together at some point in the previous year: intense cravings for the substance, trouble maintaining control over substance use, withdrawal symptoms, tolerance, the importance of the substance, and continuing to use despite negative consequences. There are over 2 billion alcoholics in the globe, and drinking can have negative effects on health, relationships,

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and more. The worldwide status of health report from the World Health Organization (WHO) in 2014 stated that over 760 million people were affected by alcohol use disorder, that people aged 25 and up drank alcohol, and that in 2010, over 30 percent of India's total population consumed alcohol [1].

In many parts of the world, alcohol usage is a major contributor to premature death and disability. Drinking alcohol is responsible for over 3.3 million annual deaths and nearly 5.1% of the worldwide burden of illness [2]. In India, between a quarter and a third of the male population partakes in alcoholic beverages. Prevalence rates of alcohol usage range from 23% in rural areas to 74% in urban areas [3]; for women, these numbers sit at 24% to 48%. Chennai, Tamil Nadu, has a prevalence of alcohol intake of 42.65 percent, with the related morbidity of gastroenteritis at 33%, hypertension at 13%, diabetes at 9%, and alcohol dependency at 56.2% [4-5].

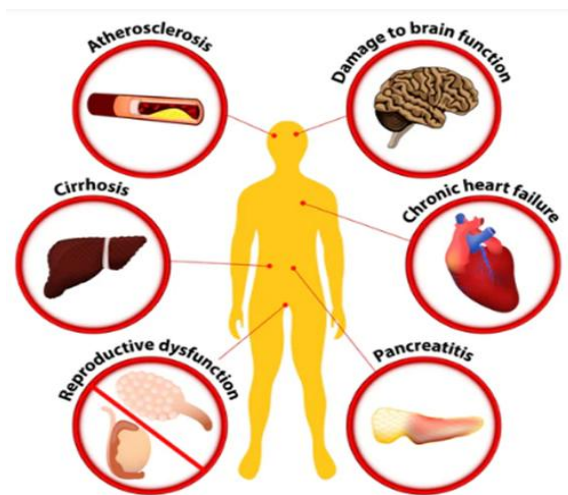


Figure 1: Physiological effects of Alcohol [27]

Peer pressure, low self-esteem, high stress levels and socio-cultural factors, a violent or alcoholic family background, and a lack of social support are all significant risk factors for alcohol consumption. People who were abused as children are more likely to develop substance misuse problems later in life, as do those who have experienced depression or other forms of emotional distress. Alcohol is an irritant that affects the lining of the stomach, resulting to peptic ulcer; chronic use further leads to alcoholic liver disease [1]. Acute gastritis is just one of the many health concerns that may result from severe and long-term alcohol intake. Breast cancer risk is increased by drinking alcohol at a rate of 1.5 drinks per day [1];[6]; the risk of oral, pharyngeal, oesophageal, and rectal cancers is also increased at a rate of 4 drinks per day (fig.1).

There is conflicting evidence about whether or not alcohol has a causal effect on erectile dysfunction, testicular atrophy, decreased testicular volume, and low sperm count, all of which can lead to sterility. Acute alcoholic myopathy, muscular weakness, and decreased bone density are also associated with alcoholism [7]. Blackouts, blurred vision, decreased memory, and slowed reaction times are some of the acute symptoms that can result from chronic alcoholism's impact on the neurological system [8]. Alcoholism is associated with a number of serious neurological disorders, including tremors, myopathy, encephalopathy, and degeneration of the cerebellum. Serotonin is depleted in the brain due to alcohol intake, leading to depression and anxiety. Heavy drinking also increases the risk of suicide, personality problems, and dangerous behaviour. In India, alcoholism accounts for 17.6% of all emergency psychiatric admissions [10]. Physical issues including cardiomyopathy, malnutrition, malabsorption, and gastritis, as well as social issues like marital strife, divorce, financial difficulties, unemployment, and even criminal behaviour, are all linked to alcoholism.

Characterized by coarse tremor of hands, tongue, or eyelids; nausea or vomiting; malaise or weakness; tachycardia, sweating, elevated blood pressure, anxiety, depressed mood or irritability, transient hallucinations or illusions, headache, and insomnia, alcohol withdrawal syndrome develops within 4 to 12 hours of cessation or reduction in heavy and prolonged (several days or longer) alcohol use. Alcohol withdrawal delirium is a potentially life-threatening complication of the withdrawal syndrome. Delirium typically develops on day two or three after discontinuing or significantly cutting back on prolonged, excessive alcohol consumption.

The highly planned treatment consists of both group and individual therapy, as well as alcohol education sessions, all of which are aimed at changing the patient's drinking habits through the use of constructive criticism. The acute physical and psychological issues of the patient with Alcohol dependence syndrome withdrawal can be managed with the support of health

education, skill building, practical counsel (alcohol), and education material, available around the clock. In order to reduce the likelihood of relapse, the study participants' anxiety and depression levels were evaluated.

2. Statement of the Problem

A cross-sectional study to assess the anxiety and Depression among patients with alcohol withdrawal syndrome admitted in selected De-addiction ward, Psychiatric Hospital, Chennai, Tamil Nadu, India.

3. Materials & Methods

Anxiety and depression in patients experiencing alcohol withdrawal syndrome were evaluated using a quantitative survey approach and a descriptive design. The Institute of Mental Health in Chennai played host to the research. The population selected for this study was patients diagnosed with alcohol withdrawal syndrome admitted to the De-addiction ward. The sample size for this study was 30 patients diagnosed with alcohol withdrawal patient admitted to a de-addiction ward in Chennai. Data was collected using a demographic data sheet, and the Hamilton anxiety scale and Hamilton depression scale were used to assess the anxiety and Depression among alcohol withdrawal syndrome. Data analysis was done using Descriptive and Inferential statistics. The Chi-square test was used to determine the association between anxiety and Depression with selected demographic variables among patients with an alcohol withdrawal syndrome.

4. Results and Interpretation

4.1. Section A-Distribution of subjects based on demographic variables

Table 1: Frequency and Percentage distribution of socio-demographic variables of patients with Alcohol withdrawal syndrome (N-30)

S. No.	Demographic variable	Frequency	Percentage
1.	Age:		
	18-20 years	6	20
	Above 21 years	24	80
2.	Educational status		
	Primary school	14	46.6
	Secondary school	9	30
	Higher school	4	13.3
	Professional	1	3.3
	Uneducated	2	6.6
3.	Occupational status		
	Coli	20	66.6
	Farmer	2	6.6
	Business	4	13.3
	Joblessness	3	10
	Government job	1	3.3
4.	Religion		
	Hindu	20	66.6
	Muslim	3	10
	Christian	6	20
	Others	1	3.3

5.	Residential status		
	Urban	13	43.3
	Semi-urban	1	46.6
	Rural	3	10
6.	Economic status		
	Poor class	16	53
	Middle class	14	47
7.	Family income (Rs)		
	Below 10,000	4	13.3
	11,000-20,000	4	13.3
	20,001-30,000	10	33.3
	Above 30,000	12	40
8.	Age of marriage		
	18-25 years	8	26.6
	Above 25 years	11	36.6
	Unmarried	11	36.6
9.	Relationship with family members		
	Friendly relationship	14	46.6
	Angry	5	16.6
	Loneliness	3	10
	No relationship	4	30
10.	Age of initiation of alcohol		
	10-20 years	25	83.3
	Above 20 years	5	16.6
11.	Other substance Use		
	Smoking	13	43.3
	Cannabis	6	20
	Tobacco chewing	11	36.6

Table 1 shows the frequency and percentage distribution of demographic variables of patients with Alcohol withdrawal syndrome. Regarding age, 6 (20%) belonged to the age group of 18- 20 years, and the majority, 24 (80%), were above 20 years of age. With respect to educational status, the majority 14 (46%) of patients completed primary school, 9(30%) patients attended secondary school, 4 (13.1%) studied higher school, 1 (3.3%) patient completed professional education, and 2 (6.6%) uneducated.

Regarding the occupation status, the majority, 20 (66.6%), were coli, 2 (6.6%) as farmers, 4 (13.3%) were doing business, 3 (10%) had no job, and 1 (3.3%) had a government job. In relation to religion, the majority, 20 (66.6%) of patients, belonged to Hindu religion, 3 (10%) of them were Muslim, 6 (20%) were Christian, and 1 (3.3%) belonged to other religions.

Regarding the Residential status, the majority, 13 (43.3%), live in urban areas, 14 (46.6%) in semi-urban, and 3 (10%) in rural areas. With respect to the economic status of the patient, the majority, 16 (53.3%) of them, belong to the poor economic class and 14 (46.6%) from the middle class.

In relation to the family monthly income, the majority 12 (40%) of them have above 31,000 Rs family monthly income, 10 (33.3%) have 20,001-30,000 Rs, 4 (13.3%) of them have 11,000- 20,000 Rs and below 10,000 Rs.

Regarding the age of marriage, the majority, 11 (36.6%) of them, got married at the age above 26 years, 11 (36.6%) unmarried and 8 (26.6%) married between 18-25 years. With respect to the relationship with the family members, the majority, 14 (46.6%) of the patients had a friendly relationship with their family members, 5 (16.6%) patients expressed anger towards their family members, 3 (10%) patients felt loneliness, and 9 (30%) no relationship with family members.

Regarding the age of initiation of alcohol consumption, the majority of 25 (83.3%) started between the age of 10-20 years, and 5 (16.6%) were above 20 years of age. With respect to other substance use, the majority, 13 (43.3%) of the patient, was smoking, 11 (36.6%) chewed tobacco, and 6 (20%) took cannabis.

4.2. Section B: Anxiety and Depression among Patients with alcohol withdrawal Syndrome

Table 2: Frequency and percentage distribution of anxiety among patients with alcohol withdrawal syndrome. (N=30)

Level of anxiety	Frequency	Percentage
Mild	14	46.6
Moderate	9	30
Severe	7	23.3

Table 2 shows anxiety frequency and percentage distribution among patients with an alcohol withdrawal syndrome. The majority, 14 (46.6%) of subjects, had mild anxiety, 9 (30%) had moderate anxiety, and 7 (23.3%) of them had severe anxiety (fig.2).

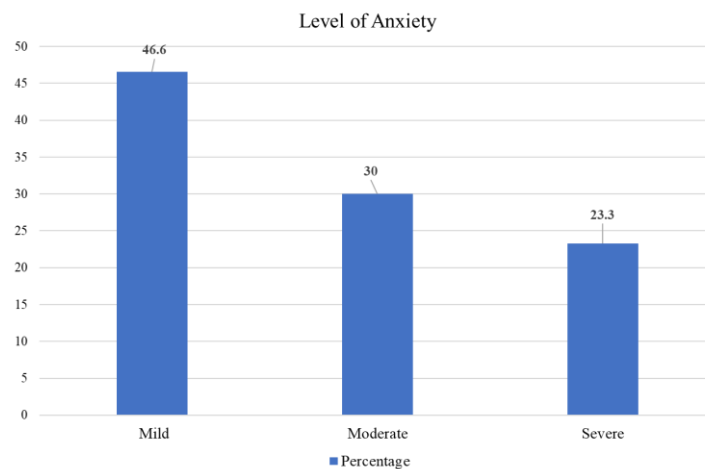


Figure 2: Bar diagram depicting the percentage of anxiety among patients with alcohol-dependent syndrome

Table 3: Frequency and percentage distribution of Depression among patients with an alcohol withdrawal syndrome. (N=30)

Depression	Frequency	Percentage
Mild	15	50
Moderate	7	23.3
Severe	8	26.6

Table 3 shows the frequency and percentage distribution of Depression among patients with an alcohol withdrawal syndrome. The majority, 15 (50%) of the patient, had mild Depression, 7 (23.3%) of the patient had moderate Depression, and 8 (26.6%) of patients had severe Depression (fig.3).

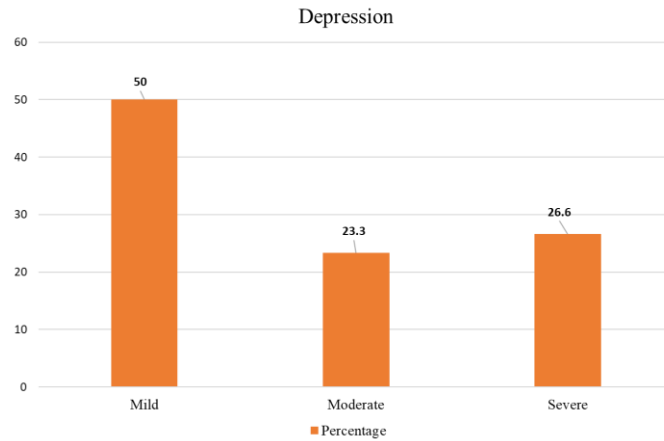


Figure 3: Bar diagram depicting the percentage of Depression among patients with alcohol-dependent syndrome

4.3. Section C: Association between anxiety and Depression with selected demographic variables of patients with alcohol-dependent syndrome

Association between anxiety with selected demographic variables of patients with alcohol-dependent syndrome. Age – (χ^2 -4.42, $p>0.05$), Education Status (χ^2 -5.48, $p>0.05$), Occupational status (χ^2 -10.73, $p>0.05$), Religion- (χ^2 -0.19, $p>0.05$), Residential status (χ^2 -40.14, $p>0.05$), Economic status- (χ^2 -2.13, $p>0.05$), Family monthly income- (χ^2 -8.91, $p>0.05$), Age of marriage- (χ^2 -9.25, $p>0.05$), Relationship with family- (χ^2 -5.02, $p>0.05$), Age of initiation of alcohol- (χ^2 -7.25, $p>0.05$), Other Substance Use- (χ^2 -8.09, $p>0.05$), there is no significant association between anxiety with selected socio-demographic variables.

Association between Depression with selected demographic variables of patients with alcohol-dependent syndrome. Age (χ^2 -5.99, $p>0.05$), Education Status (χ^2 -15.51, $p>0.05$), Occupational status (χ^2 -12.59, $p>0.05$), Religion (χ^2 -12.59, $p>0.05$), Residential status (χ^2 -9.49, $p>0.05$), Economic status (χ^2 -9.49, $p>0.05$), Family monthly income (χ^2 -5.99, $p>0.05$), Age of marriage (χ^2 -12.59, $p>0.05$), Relationship with family (χ^2 -12.49, $p>0.05$), there is no significant association between anxiety with selected socio-demographic variables. There is a significant association between Depression and demographic variables such as Type of marriage (χ^2 -9.49, $p<0.05$), Age of initiation of alcohol (χ^2 -5.99, $p<0.05$), and Other Substances Use (χ^2 -12.59, $p<0.05$).

5. Discussion

Anxiety and Depression are mood changes noted immediately after the withdrawal from alcohol, and it gradually decreases during the detoxification process. In this study, anxiety and Depression were found in all the subjects, but at varied levels. The result of the study has been discussed in different sections (fig.4).

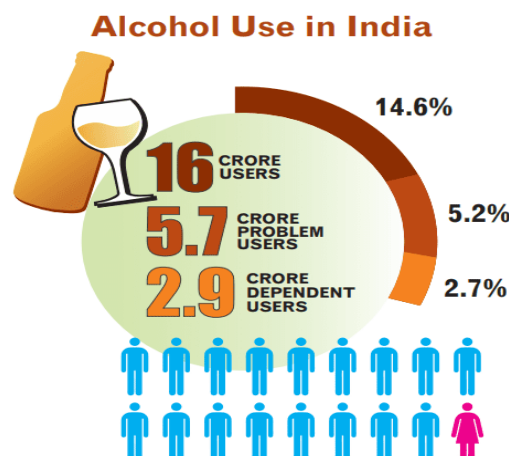


Figure 4: Alcohol use in India [28]

5.1. Section A-Distribution of subjects based on demographic variables

Eighty percent of the participants were adults over the age of twenty-five, according to the study's demographic data [11]. Participants' averaged age was 28.1 6.5 ([12]). Fifty percent of patients were between the ages of 30 and 35, and forty percent were between the ages of 36 and 40 [16]. Subjects had a mean age of 36.53 (SD 7.63) [20]. 38% were between the ages of 41 and 50 [21]. Twenty-five percent of those who participated were younger than thirty.

Nearly half (46%) of respondents had completed elementary school, but just 30% had completed high school [11]. Sixty-seven percent of patients had completed high school, and twenty-three percent had completed college [21]. Patients with low literacy levels account for 11.3% of the samples. The percentages are as follows: 23.3% in elementary school, 34.7% in middle school, 27.3% in high school [13]. There were more men than women who had completed only primary school (58.8 percent against 38.1 percent, respectively; $p = 0.001$), and the same was true for all other education levels. Participants with a primary school education were more likely to have AUD than those with a secondary school education (76% vs. 48.2%; $p = 0.002$) [12]. Sixty percent had completed high school or higher, while thirty percent had only completed grade 10. Only 52.9% did not complete primary school, while 44.3% did not complete high school.

Regarding the occupation status, the majority, 66.6%, were coli workers [11]. 52% of them are manual workers [20]. The majority, 55.7%, were unskilled workers [21]. 7.62 % are semi-skilled workers.

In relation to religion, the majority, 66.6%, of the subjects belong to the Hindu religion. Most participants (84.7%) were Hindus [21].

Regarding the residential status, 43.3% live in urban areas and 46.6% in semi-urban [11]. 73% live in rural areas and 27% in urban ones. The majority, 91%, were from urban areas [21].

With respect to the economic status of the patient, 53% of them belong to the poor economic class, and 47% are from the middle class [11]. The majority belonged to moderate socioeconomic status (52%). Most of the participants were from lower economic statuses [20].

In relation to the family monthly income, 40% of them have above Rs. 31,000 and 33.3% between Rs. 20,001-30,000. 73.3 % of the participants earn less than Rs. 5000, 26 % between Rs. 5000 to 10000 and only 7% earn more than 10000 [21].

Regarding the age of marriage, 36.6% of them got married at 26 years and between 18-25 years [13]. Most of the participants were widowed while, compared to all other marital statuses ($p = 0.001$), they had high-risk Alcohol use disorder (AUD) [11]. Most of the patients were married (62%) [20]. The majority, 87.1%, were married (fig.5).



Figure 5: Coping with substance use disorder [29]

With respect to the relationship with the family members, 46.6% of the subjects had a friendly relationship with their family members. In comparison, 16.6% expressed anger towards their family members, 10% felt lonely, and 30% had no relationship with family members [21]. 53.3% belonged to Joint families.

Regarding the age of initiation of alcohol consumption, a majority of 83.3% have started between the age of 10-20 years and 16.6% above 20 years of age [11]. 93% of the patients used a drug for more than 1 year [16]. 48% had been drinking alcohol for over 10 years [20]. The age of initiation of alcohol use was found to be below 25 years of age for 74.2% [21]. The mean age at initiation was 21.29 years, and the duration of consumption of alcohol was 13.7 years.

Among those who used more than one substance, 43.3% were smokers, 36.6% were chewers, and 20% were cannabis users [11]. 83% of drug addicts are polydrug addicts, meaning they take more than one drug (such as tramadol, cannabis, opiates, alprazolam, heroin, or nalbuphine) [14]. Tobacco and illicit substance users, people with anxiety, depression, or suicidal ideation were more likely to also abuse or be dependent on alcohol [14]. Men, as well as smokers and drug abusers, were more likely to have problems with alcohol than women were [22].

5.2. Section B: Anxiety and Depression among Patients with an alcohol withdrawal syndrome

The negative effects of alcohol drinking on one's physical and mental health, as well as the disruptions it produces in one's interpersonal relationships, are well documented [25]. Anxiety and depression are frequently reported to be present in patients experiencing alcohol withdrawal syndrome, and a strong correlation between these two conditions and the aforementioned syndrome has been established [26]. The current study found that 46.6% of participants experienced some level of anxiety, with 30% reporting moderate anxiety and 23.3% reporting severe anxiety. Our findings are consistent with those of numerous other research [11]. Ninety-seven percent of the participants reported experiencing some form of anxiety. Eighty percent of carers reported severe or moderate anxiety, whereas twenty percent reported mild anxiety [12]. Sixty percent of the patients suffered from low-grade anxiety [11]. Depression ranged in severity from mild (50% of individuals), to moderate (23.3%), to severe (8.26%) among the participants. Among substance abusers, 93% reported experiencing depression, with a range of severity from light (12%) to moderate (9%) to severe (72%). Seventy percent of the patients suffered from mild Depression, while thirty percent suffered from moderate Depression [17]. Depression is extremely common in the alcoholic population (63.8 percent).

According to Obeid et al. [13], individuals at high risk for AUD had considerably higher rates of depression (17.31 vs. 8.00; $p = 0.001$) and anxiety (17.58 vs. 10.90; $p = 0.001$) than those at low risk [15]. Patients entered treatment reporting high levels of anxiety and depression. After 28 days of treatment, however, most people reported no longer having symptoms that would point to a comorbid disease [14]. A higher prevalence of psychiatric comorbidities such as anxiety disorder, mood disorder, and suicide risk has been repeatedly linked to alcohol misuse and/or dependence [15]. Patients entered treatment reporting high levels of anxiety and depression. However, by the end of treatment (after 28 days), the majority of subjects showed no signs of a co-morbid disease.

63% had some sort of physiological problem or comorbidity [16]. The majority of participants (62%) and state anxiety (66.7%) were classified as moderate, with mean scores of 43.67 (SD 6.68) and 40.88 (SD 5.675), respectively. With a mean score of 11.23 (SD 5.398), moderate Depression affected the vast majority (80%). Anxiety was significantly associated with Depression ($p = 0.001$). According to Nair et al. [12], 70% of the patients had mild Depression, while 30% had moderate Depression [18]. Anxiety and depression were present in 56% and 68% of the patients, respectively, who were classified as having moderate to severe alcohol dependence [19]. During the first four weeks following detoxification, the severity of psychopathology decreased across all subgroups. However, severe trait anxiety that persisted after 3 weeks of abstinence, co-morbid depressive and/or anxiety disorders, and combinations of these with moderate or severe current anxiety and depressive states constitute the highest relapse chances [23].

Twenty-two patients (31.4% of the total) were found to have major depressive disorder. Seventy percent of people had moderate alcohol dependence. There was a statistically significant correlation between high levels of drunkenness and high levels of depression. 11.3 percent had GAD, 8% had SAD, and 27.3% had depression, according to Manikandan [20]. Generalized anxiety disorder was present in 4.7% of the sample, ranging from mild to 5.3% mild to moderate, and 1.3% moderate to severe. 5.3% reported mild depression, and 3.3% experienced moderate depression [20].

5.3. Section C: Association between anxiety and Depression with selected demographic variables of patients with alcohol-dependent syndrome

Anxiety was not shown to be significantly related to a number of socio-demographic factors, including age, education, occupation, religion, residence, economic status, family monthly income, marital status, family ties, commencement of alcohol use, and the use of other substances [24]. Depression was found to have a strong correlation with social factors such as marital status, drinking age of first drink, and drug and alcohol use [11]. Anxiety ($r = 0.256$, $p = 0.010$) and depression ($r = 0.330$, $p = 0.001$) were also positively connected with results on the Drug Use Disorder Identification Test. Depression and anxiety were also found to have a favourable correlation with one another ($r = 0.630$ and $p = 0.001$) [13]. Alexithymia ($ORa = 1.030$; CI

1.009-1.051), depression (ORa = 1.076; CI 1.050-1.103), and suicidal ideation (ORa = 1.253; CI 1.026-1.531) were all significantly increased in those at high risk for AUD [16]. Anxiety and depression levels were not significantly related to most bio-psychosocial factors. Moderate trait anxiety was associated with longer durations of alcohol consumption (p 0.05). The depressive symptoms of those who had chronically ill relatives were found to be significantly higher (p 0.05) [20]. Anxiety was significantly linked to how long someone had been drinking.

6. Conclusion

The connection between anxiety, depression, and substance abuse disorders is nuanced and fluid, and they often occur together. Epidemiological studies of alcoholic populations have found an association between anxiety disorders, depression, and alcohol use disorders. Anxiety and depression are known to influence the progress and outcomes of treatment for alcoholics. Patients with alcohol dependent syndrome were surveyed to determine their level of anxiety and Depression. The results showed that all participants had varied anxiety levels; 46.6% had mild anxiety, 30% had a moderate level of anxiety 23.3% had a severe level of anxiety. Regarding Depression, 50% had a mild level of Depression, 23.3% had a moderate level of Depression 26.6% had a severe level of Depression. Treatment compliance for patients with alcohol withdrawal syndrome will improve by assessing associated anxiety and Depression and exposing them to treatment, if necessary. To lessen the prevalence of psychiatric comorbidities, nurses should raise awareness. Demand more public health attention, highlighting the requirement for alcohol consumption prevention initiatives. There is a greater risk of relapse associated with depressive and anxiety disorders during detoxification. Hence an effective treatment plan is required. Adequate inpatient treatment for patients with alcohol withdrawal syndrome can greatly enhance clinical outcomes.

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Data Availability Statement: The study collected data from the patients admitted to the De-addiction ward, Institute of Mental Health, Chennai, Tamil Nadu. And the literature data from google scholar, PubMed, and ScienceDirect to interpret the result. This is the new study conducted by the authors. The corresponding authors were notified to provide data from this work.

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Ethics and Consent Statement: This work is a draft from the corresponding author. Permission for data collection was obtained from the Institution, and Informed consent was obtained from the study participants. Authors of the work unanimously consent to make this publication available to all interested people for reading, teaching, and learning.

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