



ASSESSMENT OF QUALITY OF SLEEP IN PATIENTS WITH ALCOHOL DEPENDENCE SYNDROME

Psychiatry

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ABSTRACT

Background – Alcohol dependence syndrome, also known as alcoholism, is a chronic and relapsing brain disorder characterized by compulsive alcohol seeking. This volatility impacts physical health, mental well-being and their overall quality of life. Chronic alcoholism starts to help with sleepiness later effects the quality of sleep. Treatment of alcohol dependency syndrome with focus to sleep has shown to improve mental health in sleep deprived patient by reducing aggressiveness and impulse behaviours which are linked to suicidal behaviour in distressed humans. **Methods** – A cross sectional study to assess the sleep quality in 110 patients diagnosed as alcohol dependency syndrome. A semi structured proforma with a questionnaire about the socio – demographical variables and clinical profile of the patient was used to collect data and sleep quality was assessed using the Pittsburgh sleep quality index (PSQI) scale. **Results** – The findings in our study showed mean age of the patients was 44.03 years .Male (97.3%) , 2.7% were female. (70.9%) resided in rural areas, while 29.1% were from urban areas. (27.3%) had completed high school, middle school education (27.3%), primary school education (21.8%), post-high school/diploma (12.7%), graduate/postgraduate (5.5%), and illiterate (5.5%). (35.5%) were semi-skilled workers, followed by skilled workers (22.7%), unskilled workers (23.6%), clerical workers (9.1%), unemployed individuals (6.4%), and semi-professionals (2.7%).The majority (77.3%) were classified as having "poor sleep quality", while only 22.7% had "good sleep quality", suggest that sleep disturbances are a significant issue in this population. **Conclusion** – Alcohol dependence effects both the younger and older generation , also noted among people from various socio – economical background and can leads to chronic dependence. Majority of the patients experience poor sleep quality which can progress to aggression, depression and even suicidal ideation and attempts. Hence treatment in patients with alcohol dependence syndrome should also involve measures to improve sleep quality.

KEYWORDS

alcohol dependency syndrome , sleep quality , alcoholics , Pittsburgh sleep quality index (PSQI) , psychiatry

INTRODUCTION –

Alcohol Dependence Syndrome (ADS) is a complex and multifaceted disorder characterized by compulsive and excessive consumption of alcohol, despite negative consequences. World Health Organization (WHO) defined as "a cluster of physiological, behavioral, and cognitive phenomena that reflect a pattern of pathological use of alcohol" (WHO, 2018). Statistics show that men have a 10-15% lifetime risk of developing alcohol dependence, while women face a 3-5% risk. Most cases emerge between young adulthood and mid life between age of 20 – 40(1)

The National Council on Alcohol and Drug Dependency and the American Society of Addiction Medicine define alcoholism as a chronic disease characterized by impaired control over drinking, preoccupation with alcohol, use despite adverse consequences, and distorted thinking(2).

According to the World Health Organization (WHO), alcoholism tops the list of factors contributing to disability-adjusted life years (DALYs) in middle-income countries, with a staggering 44 million cases(3).

Sleep disturbances have long been recognized as a critical factor in mental health, with significant implications for mental disorders. Sleep problems are a diagnostic criterion for various conditions, including major depression, bipolar disorder, and generalized anxiety disorder, and play a crucial role in regulating physical functioning. Recent research focus on relationship between sleep abnormalities and mental health – aggressive and impulse behaviour (4)

The effects of alcohol on sleep are multifaceted and can have significant consequences on overall health and well-being. Acutely, alcohol consumption can induce sleepiness and reduce sleep latency due to its sedative properties , this initial sedation is often followed by disrupted sleep architecture, characterized by reduced REM sleep and increased slow-wave sleep (Ebrahim et al., 2013)(5). Leads to sleep fragmentation, resulting in frequent awakenings and reduced sleep efficiency. Chronic alcohol use can lead to persistent sleep disturbances, including insomnia and daytime fatigue. Long-term

alcohol consumption disrupts normal circadian rhythm (Aurora et al., 2010)(6).

The negative effects of alcohol on sleep, abstinence or reduced alcohol consumption is recommended. Practicing good sleep hygiene, such as maintaining a regular sleep schedule and creating a dark sleep environment, can also help. Cognitive behavioral therapy for insomnia (CBT-I) and pharmacological interventions, such as melatonin or sedatives, may be necessary for individuals experiencing persistent sleep disturbances.

Assessing quality of sleep in patients with Alcohol Use Disorder (AUD) is crucial, as alcohol consumption significantly impacts sleep architecture and overall well-being. Research indicates that poor sleep quality affects up to 70% of individuals with AUD (Brower et al., 2018)(7).

Soon-Yeob-Park et al.'s (2015) Korean cross-sectional survey sheds light on the relationship between alcohol consumption and sleep quality in men. The study utilized the Alcohol Use Disorders Identification Test-Korean Revision (AUDIT-KR) to assess alcohol consumption patterns and found significant correlations between AUDIT-KR scores and poor sleep quality. Specifically, men with higher AUDIT-KR scores tended to experience shorter sleep duration, increased sleep disturbance, and poorer subjective sleep quality. This study highlighting the importance of addressing alcohol consumption in patients experiencing sleep disturbance. (104). A 2022 retrospective study by Wen-Yu-Hsu et al. in Taiwan found that women with a history of domestic violence and alcohol consumption experienced increased suicidal ideation, anxiety, and poor sleep quality.(8)

MATERIALS AND METHODS –

This cross – sectional study includes 110 patients with ADS from both in patients and out patient departments of a tertiary care hospital. A semi structured proforma with a questionnaire about socio – demographic variable and clinical profile of patients. THE PITTSBURGH SLEEP QUALITY INDEX (PSQI) scale was used to asses sleep quality. Measure the quality and patterns of sleep in the older adult. It differentiates "poor" from "good" sleep by measuring

seven domains – 1. Subjective sleep quality 5. Sleep disturbances 2. Sleep latency 6. Use of sleep medication 3. Sleep duration 7. Daytime dysfunction 4. Habitual sleep efficiency Scoring 0 to 3 scale, less than 3 - negative extreme on the Likert Scale. A global sum of “5” or greater indicates a “poor” sleeper. (9)

The study included patients above 18 years of age, who were diagnosed with ADS according to ICD 10. The study excludes history of co-morbid psychiatric disorders including personality disorders, major physical illnesses, mental retardation & other substance dependence and currently in complicated withdrawal (delirium & seizures), patients who cannot give sufficient history because of use of alcohol Patients who refuse to give consent to be part of this study. The raw data collected from patients was entered into a Microsoft Excel sheet and subsequently exported to SPSS software version 16 (IBM) for statistical analysis. P - value – 0.05 and 95% confidence interval (CI) considered statistically significant.

RESULTS–

Table 1: Descriptive Statistics Of Age Inpatients With Alcohol Dependence Syndrome

Parameter	Mean (SD)	Median (IQR)	Minimum	Maximum
Age	44.03 (11.2)	42.5 (17.25)	24.0	69.0

The descriptive statistics for the age of patients with alcohol dependence syndrome are presented in Table 1. The mean age of the patients was 44.03 years, with a standard deviation of 11.2 years. The median age was 42.5 years, with an interquartile range (IQR) of 17.25 years. The age range of the patients was from 24.0 to 69.0 years.

Table 2: Frequency Distribution Of Age In Patients With Alcohol Dependence Syndrome

Distribution of Age	Frequency	Percentage
20 – 29	09	08.2
30 – 39	33	30.0
40 – 49	39	35.5
50 – 59	15	13.6
60 – 69	14	12.7
Total	110	100

The frequency distribution of age in patients with alcohol dependence syndrome is presented in Table 2. The majority of patients (35.5%) fell in the age range of 40-49 years, followed by 30-39 years (30.0%), 50-59 years (13.6%), 60-69 years (12.7%), and 20-29 years (8.2%). The total sample size consisted of 110 patients, representing 100% of the study population.

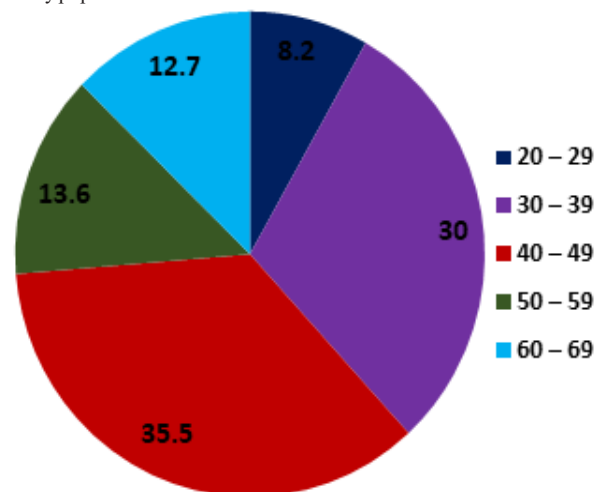


Figure 1: Frequency Distribution Of Age In Patients With Alcohol Dependence Syndrome

Table 3: Frequency Distribution Of Gender In Patients With Alcohol Dependence Syndrome

Gender	Frequency	Percentage
Male	107	97.3
Female	03	02.7
Total	110	100

The frequency distribution of gender in patients with alcohol dependence syndrome is presented in Table 3. The majority of patients

(97.3%) were male, while only 2.7% were female. The total sample size consisted of 110 patients, with males outnumbering females by a significant margin. This suggests that alcohol dependence syndrome is more prevalent among males in this study population.

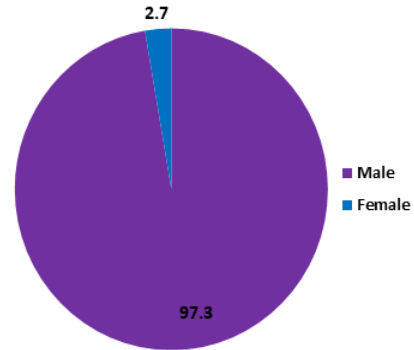


Figure 2: Frequency Distribution Of Gender In Patients With Alcohol Dependence Syndrome

Table 4: Frequency Distribution Of Region In Patients With Alcohol Dependence Syndrome

Region	Frequency	Percentage
Rural	78	70.9
Urban	32	29.1
Total	110	100

The frequency distribution of region in patients with alcohol dependence syndrome is presented in Table 4. The majority of patients (70.9%) resided in rural areas, while 29.1% were from urban areas. The data suggests that alcohol dependence syndrome is more prevalent among individuals from rural backgrounds, with nearly three-quarters of the study population hailing from rural areas.

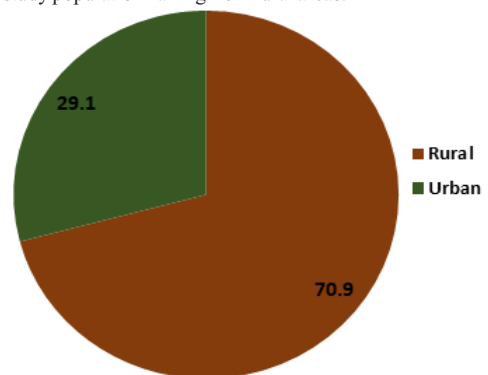


Figure 3: Frequency Distribution Of Region In Patients With Alcohol Dependence Syndrome

Table 5: Frequency Distribution Of Education In Patients With Alcohol Dependence Syndrome

Education	Frequency	Percentage
Illiterate	06	05.5
Primary School	24	21.8
Middle School	30	27.3
High School	30	27.3
Post High School/ Diploma	14	12.7
Graduate / Post Graduate	06	05.5
Total	110	100

The frequency distribution of education in patients with alcohol dependence syndrome is presented in Table 5. The majority of patients (27.3%) had completed high school, then middle school education (27.3%), primary school education (21.8%), post-high school/diploma (12.7%), graduate/postgraduate (5.5%), and illiterate (5.5%). This suggests that alcohol dependence syndrome affects individuals across various educational backgrounds, with a relatively even distribution among those with primary, middle, and high school education.

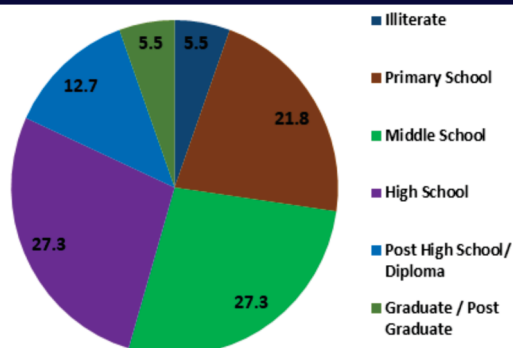


Figure 4 : Frequency Distribution Of Education In Patients With Alcohol Dependence Syndrome

Table 6: Frequency Distribution Of Employment Status In Patients With Alcohol Dependence Syndrome

Employment Status	Frequency	Percentage
Unemployed	07	06.4
Unskilled Workers	26	23.6
Semi Skilled Workers	39	35.5
Skilled Workers	25	22.7
Clerical	10	09.1
Semi Profession	03	02.7
Total	110	100

The frequency distribution of employment status in patients with alcohol dependence syndrome is presented in Table 6. The majority of patients (35.5%) were semi-skilled workers, followed by skilled workers (22.7%), unskilled workers (23.6%), clerical workers (9.1%), unemployed individuals (6.4%), and semi-professionals (2.7%). This suggests that alcohol dependence syndrome affects individuals across various occupational categories, with a relatively high representation among semi-skilled and unskilled workers.

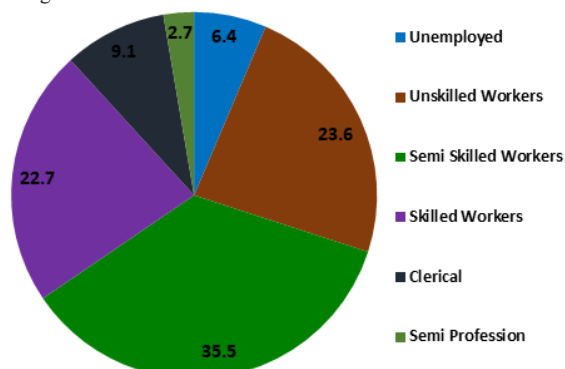


Figure 5 : Frequency Distribution Of Employment Status In Patients With Alcohol Dependence Syndrome

Table 7: Frequency Distribution Of Pittsburgh Sleep Quality Index In Patients With Alcohol Dependence Syndrome

Pittsburgh Sleep Quality Index	Frequency	Percentage
Good Sleep Quality	25	22.7
Poor Sleep Quality	85	77.3
Total	110	100.0

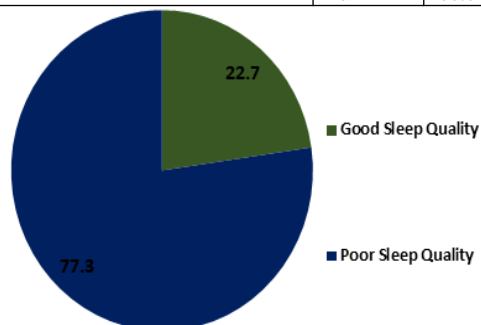


Figure 6: Frequency Distribution Of Pittsburgh Sleep Quality Index In Patients With Alcohol Dependence Syndrome

The frequency distribution of the Pittsburgh Sleep Quality Index (PSQI) in patients with alcohol dependence syndrome is presented in Table 6. The majority of patients (77.3%) were classified as having "poor sleep quality", while only 22.7% had "good sleep quality". This suggests that sleep disturbances are a common issue among patients with alcohol dependence syndrome, with nearly 8 out of 10 patients experiencing poor sleep quality.

Table 7: Frequency Distribution Of Pittsburgh Sleep Quality Index (PSQI) In Patients With Alcohol Dependence Syndrome

Parameter	Mean (SD)	Median (IQR)	Minimum	Maximum
PSQI	14.1 (7.77)	18.0 (3.25)	0.00	20.0

The descriptive statistics for the Pittsburgh Sleep Quality Index (PSQI) scores in patients with alcohol dependence syndrome are presented in Table 7. The mean PSQI score was 14.1, with a standard deviation of 7.77. The median score was 18.0, with an interquartile range (IQR) of 3.25. The PSQI scores ranged from 0.00 to 20.0, indicating a wide variability in sleep quality among patients with alcohol dependence syndrome. The high mean and median scores suggest that sleep disturbances are a significant issue in this population.

DISCUSSION –

Alcohol Dependence Syndrome (ADS) is a complex and multifaceted disorder characterized by the compulsive and excessive consumption of alcohol, despite the negative consequences it may have on an individual's physical and mental health, relationships, and daily life. ADS is a chronic and relapsing condition that affects millions of people worldwide, causing significant morbidity, mortality, and economic burden.

In our study, we found that the mean age of the patients is 44.03 years, with a standard deviation of 11.2 years. This suggests that the majority of patients with alcohol dependence syndrome are middle-aged, with a relatively wide range of ages. The median age of 42.5 years, with an interquartile range (IQR) of 17.25 years, further supports this observation. The age range of the patients is quite broad, with the youngest patient being 24 years old and the oldest being 69 years old. This suggests that alcohol dependence syndrome can affect individuals across a wide range of ages.

Similar research by Kishor et al.(11) reported a mean age of 39 years, with a range of 24-55 years, among individuals with alcohol dependence. Pandey et al.'s(12) study also found the mean age of onset for alcohol dependence to be approximately 37.5 years.

The present study showed that the frequency distribution of gender in patients with alcohol dependence syndrome reveals a significant disparity between males and females. The majority of patients, 107 (97.3%), were male, while only 3 (2.7%) were female.

Similarly, according to Singapore's 2020 national population health survey (13), a significant disparity in alcohol consumption was observed between genders. Specifically, males in the 18-74 age group reported higher regular alcohol consumption (3.4%) compared to females (1.0%).

The study also examined the educational background of patients with alcohol dependence syndrome. The results showed that the majority of patients (27.3%) had completed high school, followed by those who had completed middle school (27.3%), primary school (21.8%), and post-high school/diploma (12.7%). This suggests that individuals with lower levels of education may be more vulnerable to alcohol dependence as they may have less knowledge about the consequences of long-term drinking.

A study conducted by Grant et al. (14) found that individuals with lower levels of education were more likely to engage in heavy drinking and experience alcohol-related problems.

In terms of employment status, the present study found that patients with alcohol dependence syndrome were employed in a variety of occupations, with semi-skilled workers (35.5%) being the most common. Similar findings were proposed by Kisser et al (15) and Dawson et al.(16) suggested that alcohol dependence can affect individuals across various occupational backgrounds. Semi-skilled workers consume alcohol as a mean alleviate pain – physical psychological and socio environmental.

A study conducted by Mohan et al (17) in India found that rural areas

had a significantly higher prevalence of alcohol dependence (14.1%) compared to urban areas (6.4%) and also found a significant prevalence of alcohol abuse in the sample, with 24.7% of participants affected, including 36.1% of males and 13.4% of females.

In our study we found that the Pittsburgh Sleep Quality Index (PSQI) in patients with alcohol dependence syndrome reveals a significant trend. A substantial majority of patients (77.3%) reported poor sleep quality, while only a small proportion (22.7%) reported good sleep quality.

A study conducted by Brower et al (18). And Conroy et al (19). found that individuals with alcohol dependence syndrome were more likely to experience sleep disturbances of about 70%, including insomnia and daytime fatigue, than those without alcohol dependence syndrome. Even though the sleep quality on alcohol dependence is multi factorial, one of the possible explanation is that alcohol dependence syndrome can lead to disruptions in the body's natural sleep-wake cycle, resulting in poor sleep quality. (20)

CONCLUSION –

This study was conducted to assess the sleep quality in patients with alcohol dependency syndrome. Through this study, a strong association was seen in the patients with alcohol dependency syndrome experiencing poor sleep quality. The study proves the patients who start with occasional consumption of alcohol further go on to be dependent to alcohol to help deal with daily life issues and induce sleep when stressed. Later they become chronic consumers of alcohol which eventually leads to development of tolerance. These patients then start to experience continuous sleep disturbance, insomnia, day time fatigue and disruption of the natural sleep wake cycle of the body.

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