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A Prospective Observational Study to Evaluate Non-Adherence among Alcohol Dependence Syndrome Subjects in Tertiary Care Hospital

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ABSTRACT

Background information: Alcohol dependence syndrome, also known as alcoholism, is chronic relapsing disorder characterized by strong craving for alcohol. Understanding medication adherence patterns among alcohol dependence syndrome patients can provide better view about their treatment journey and potential barriers for medication adherence.

Objectives: The study investigates medication adherence among patients with Alcohol Dependence Syndrome (ADS) and identifies factors contributing to non-adherence

Methods: The study investigates medication adherence among patients with Alcohol Dependence Syndrome (ADS) and identifies factors contributing to non-adherence. Conducted over six months at Krishna Rajendra Hospital in Mysuru, it involved 130 participants diagnosed with ADS based on DSM-5 criteria. Data on demographics, barriers to adherence, and medical history were collected, with adherence assessed using the MARS-10 scale..

Results: Results indicated a mean patient age of 38 years, predominantly male (96.92%). Initial non-adherence was reported at 27.69%, increasing to 39.23% by the final follow-up. The highest rates of non-adherence were found in patients aged 36-54 years, primarily due to factors like lack of motivation, withdrawal symptoms, and family issues. There was no relation found between medication adherence and risk factors such as age, education, depression etc.

Conclusion: The study concludes that non-adherence is a significant public health issue, particularly in psychiatric populations. It emphasizes the need to address barriers to medication adherence A clinical pharmacist's role is highlighted in ensuring rational drug use and supporting adherence strategies.

Keywords: Medication adherence, alcohol dependence syndrome, MARS scale, medication compliance

I. INTRODUCTION

ALCOHOLDEPENDENCE SYNDROME [ADS]: Alcohol dependence syndrome, also known as alcoholism, is a chronic medical condition characterized by the inability to control alcohol consumption despite the negative consequences it has on one's health, relationships, and daily life Thus, main features of alcohol dependence syndrome include.Non-adherence among individuals with Alcohol Dependence Syndrome (ADS) is a significant concern, particularly regarding the management of comorbid conditions and treatment adherence. Various studies have highlighted the relationship between alcohol consumption and medication adherence, revealing critical insights into how alcohol use negatively impacts treatment outcomes.

PREVALENCE OF ADS: Alcoholism is a serious public health issue that affects different groups at different rates of prevalence. It has been estimated that 2% of women and 6% of males in the US suffer from alcohol dependence. [2] According to a DSM-IV study, the prevalence of current alcohol dependence among US adults is 3.9%. [3] But in some places, prevalence rates can be significantly higher, as evidenced by a research conducted in Coimbatore, India, which found that 44% of people there had alcohol dependence. [5]

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INCIDENCE OF ADS: The incidence of alcohol dependence in India is estimated to be around 2%. [5] In the past year, 10.5% of Americans aged 12 and older (or 29.5 million) suffered from an alcohol use disorder. Globally, an estimated 400 million people aged 15 years and older, or 7% of the world's population, lived with alcohol and drug use disorders. Of this, 209 million people (3.7% of the adult world population) lived with alcohol dependence. [6]

Factors contributing to Non adherence

1. The physiological and cognitive impairments associated with alcohol dependence can lead to forgetfulness, lack of motivation, and impaired judgment, all of which contribute to non-adherence. [1]

2. One significant barrier to adherence is the complexity of medication regimens. Patients are more likely to miss doses if the regimen is complicated or requires frequent dosing. For instance, medications that need to be taken multiple times a day or at specific times can lead to increased non-adherence. [2]

3. Anticipated or experienced side effects of medications also deter adherence. Patients may stop taking medications due to negative experiences or fear of potential adverse effects, which can further complicate their treatment journey. [2]

OBJECTIVE:

Primary objective: Assessment of medication adherence among ADS patients

Secondary objective: Evaluation of factors contributing non adherence in ADS patients

Study site: The study was carried out at Krishna Rajendra Hospital (KR), Mysuru. It is a tertiary referral care centre and teaching hospital attached to Mysore Medical College and Research Institute, Mysuru, Karnataka, India.

Study design: This is a prospective observational study

Study period: The study was carried out for a period of six months from March 2024 to August 2024

Ethical approval for the study: Ethical Clearance was obtained from the Institutional Ethical Committee, Mysore Medical College and Research Institute (Ref no. MMC EC 47/24)

STUDY CRITERIA:

Inclusion criteria:

- Patients aged 18 years and above.
- Patient diagnosed with ADS using DSM 5 criteria with a maximum history of 3 months.
- Patients of either gender.

Exclusion criteria:

- Incomplete case sheets and medication information.
- Those patients not willing to give informed consent.

Study tool: The MARS scale consists of 10 questions, with scoring as follows: For questions 1-6 and 9-10, a "YES" equals 0 and a "NO" equals 1. For questions 7-8, the scoring is reversed, with "YES" equal to 1 and "NO" equal to 0. Scores of 0-4 indicate non-adherence, 5-7 indicate partial adherence, and 8-10 indicate adherence. Barriers to non-adherence and partial adherence were analyzed using 16 factors identifying reasons for medication non-compliance.

Study procedure:

Informed Consent form: An informed consent form was created in both English and Kannada, clearly explaining the study's details. Consent was obtained from patients who volunteered and met the study criteria. The form outlined the study's objectives and benefits, and included a section for the patient's signature. For illiterate patients, the study was explained to them, and consent was obtained from their caretakers.

Data collection form:A data collection form was created to capture demographic details (e.g., name, age, gender, medical history, substance use) and clinical information (e.g., diagnosis, co-morbidities, prescribed medication details). The study included the Medication Adherence Rating Scale (MARS-10) to assess adherence and list of factors influencing medication adhrence

Data Collection: Consent was obtained from patients in English and Kannada, and those meeting the study criteria were enrolled on an OPD basis. Relevant demographic and clinical data were recorded. Patients were interviewed during the first follow-up session and again at 2-week intervals for 2 months to assess medication adherence using MARS-10. Depression status was assessed using the MDI-X scale. In-person or phone interviews were conducted for follow-up appointments. The collected data was analyzed using descriptive and inferential statistics.

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II. RESULTS

TABLE 1: SOCIO DEMOGRAPHIC PROFILE OF STUDY POPULATION

DEMOGRAPHIC DATA	NO. OF PATIENTS [n]	PERCENTAGE[%]
AGE [IN YEARS] 18-36 36-54 54-72	 61 62 7	 46.90% 47.60% 5.40%
GENDER MALE FEMALE	 126 4	 96.92% 3.07%
EDUCATIONAL STATUS EDUCATED UNEDUCATED	 59 71	 45.30% 54.60%
PLACE OF RESIDENCE RURAL URBAN	 127 3	 97.60% 2.30%
ECONOMIC STATUS LOW INCOME HIGH INCOME	 129 1	 99.20% 0.76%

TABLE 2: MEDICATION ADHERENCE AMONG ADS PARTICIPANTS

	2nd Week	4th Week	6th Week	8th Week
NON ADHERANT	27.69%	31.53%	38.46%	39.23%
PARTIALLY ADHERANT	33.84%	23.07%	20%	19.23%
ADHERANT	38.46%	45.38%	41.53%	41.53%

On analyzing medication adherence over the follow-up period, at the 2nd week, the majority were adherent (n=50, 38.46%), followed by partially adherent (n=44, 33.84%) and non-adherent participants (n=36, 27.69%). By the 4th week, adherence increased with most participants being adherent (n=59, 45.38%), while 30 (23.07%) were partially adherent and 41 (31.53%) were non-adherent. At the 6th week, most participants remained adherent (n=54, 41.53%), followed by 26 (26%) who were partially adherent and 50 (38.46%) non-adherent. Similarly, during the 8th week, the majority continued to be adherent (n=54, 41.53%), with 25 (19.23%) partially adherent and 51 (39.23%) non-adherent

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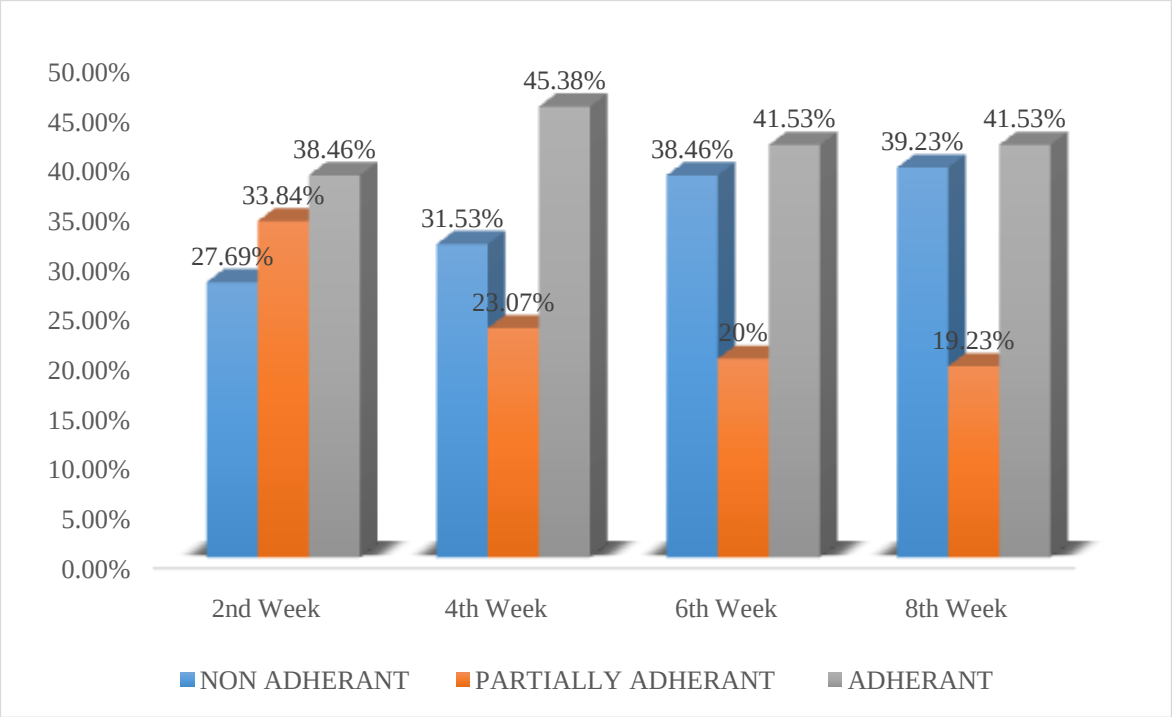
FIG 1:MEDICATION ADHERANCE THROUGHOUT THE FOLLOWUP PERIOD



DISTRIBUTION OF MEDICATION ADHERENCE AMONG DIFFERENT AGE GROUPS

During the 2nd week follow-up, among participants aged 18–36 years, the majority were partially adherent (36.06%) and non-adherent (32.78%), with fewer being adherent (31.01%). In the 36–54 age group, most were adherent (46.77%), followed by partially adherent (27.41%) and non-adherent (25.80%). Among those aged 54–72 years, the majority were partially adherent (71.40%) and the rest adherent (28.57%), with no non-adherent participants

FIG 2: Distribution of medication adherence among different age groups

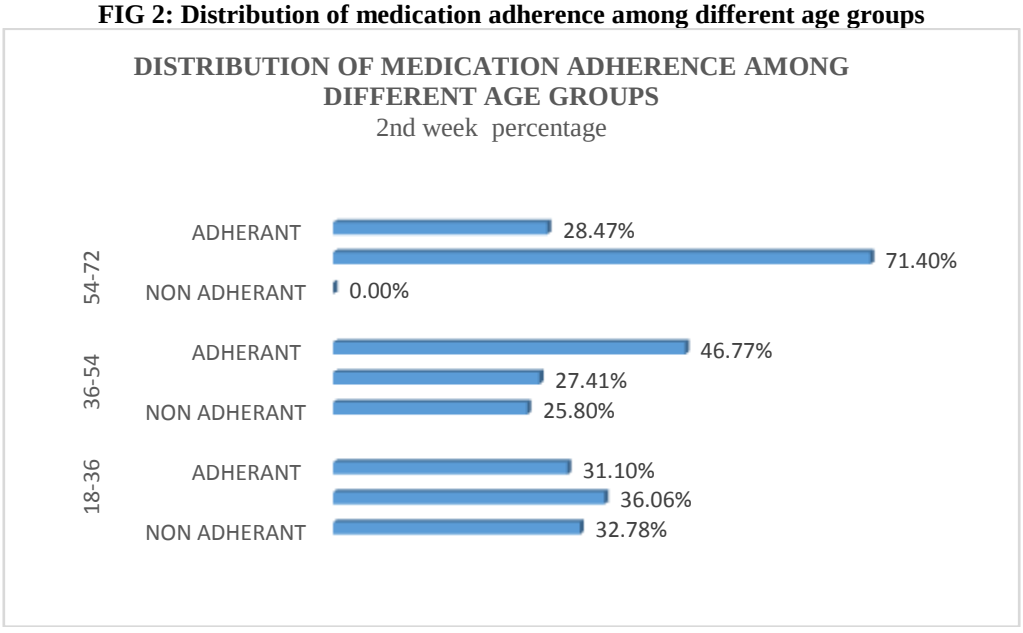


FIG 3: Distribution of medication adherence among different age groups

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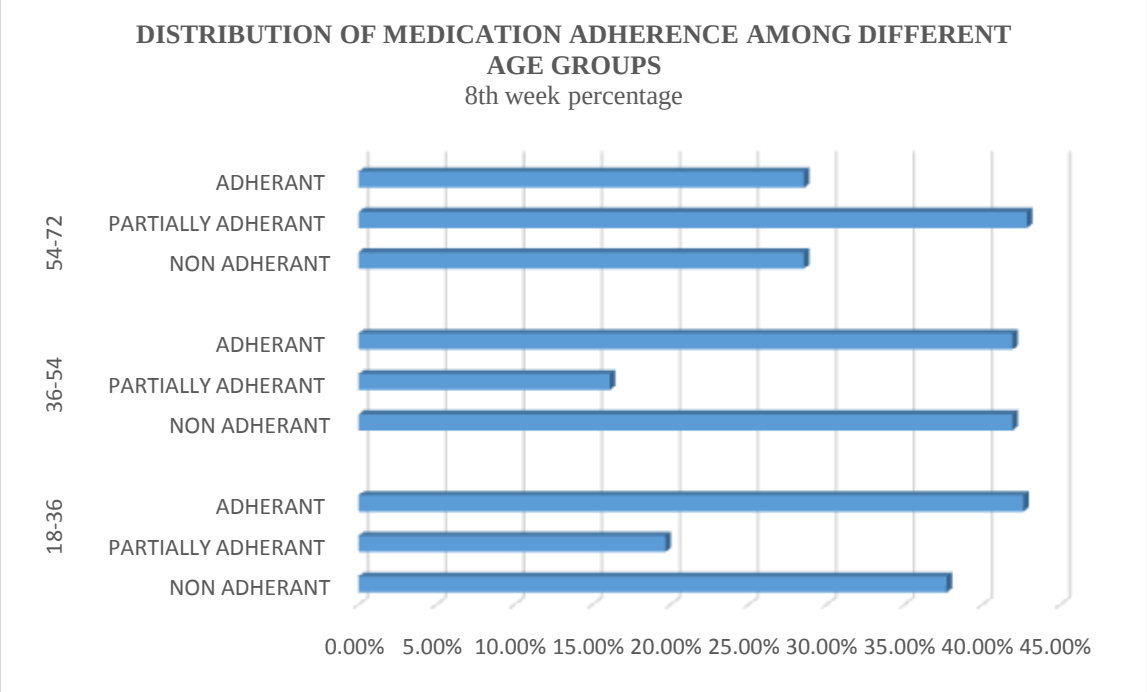

TABLE 3: CLINICAL DATA OF THE STUDY POPULATION

CLINICAL DATA	NO OF PATIENTS	PERCENTAGE [%]
RECREATIONAL DRUG USE :		
TOBACCO		
SMOKING	16	12.30%
OTHERS	76	58.40%
NON USERS	7	5.38%
	31	23.80%
COMORBID CONDITIONS		
PRESENT	43	33.07%
ABSENT	87	66.09%

FIG 4: medication adherence among participants with comorbid condition from baseline to final follow-up

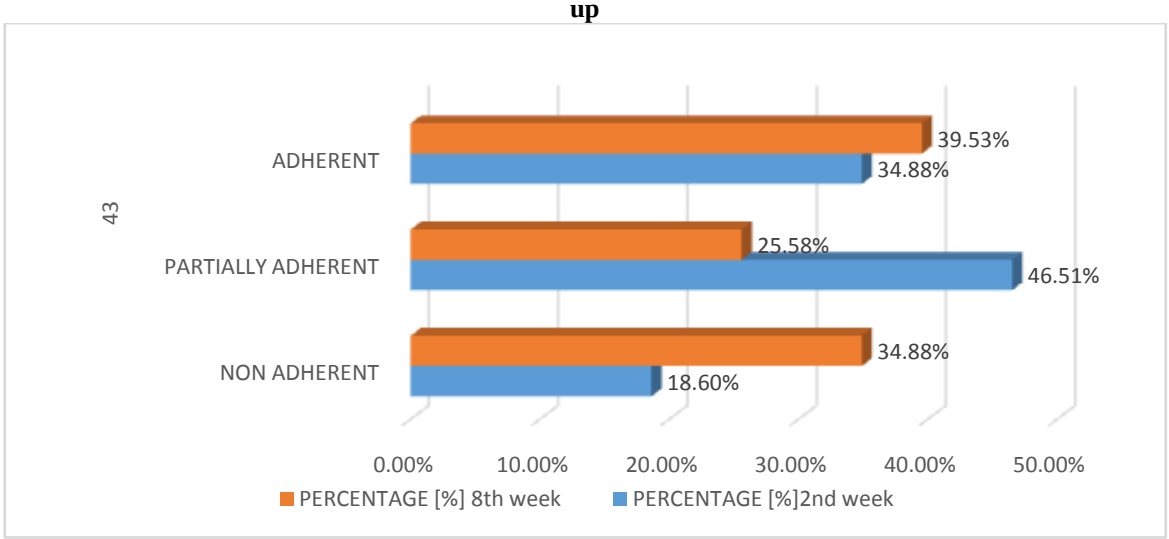

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FIG 5: Medication adherence among participants with recreational drug use.(2nd Week followup)

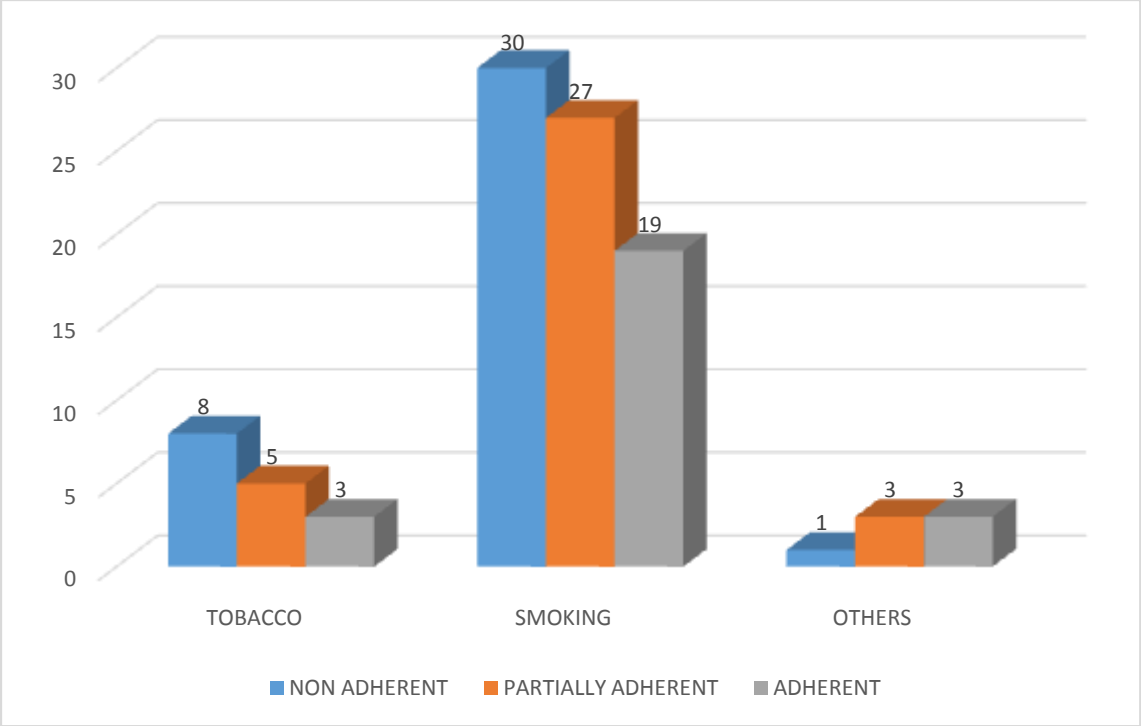
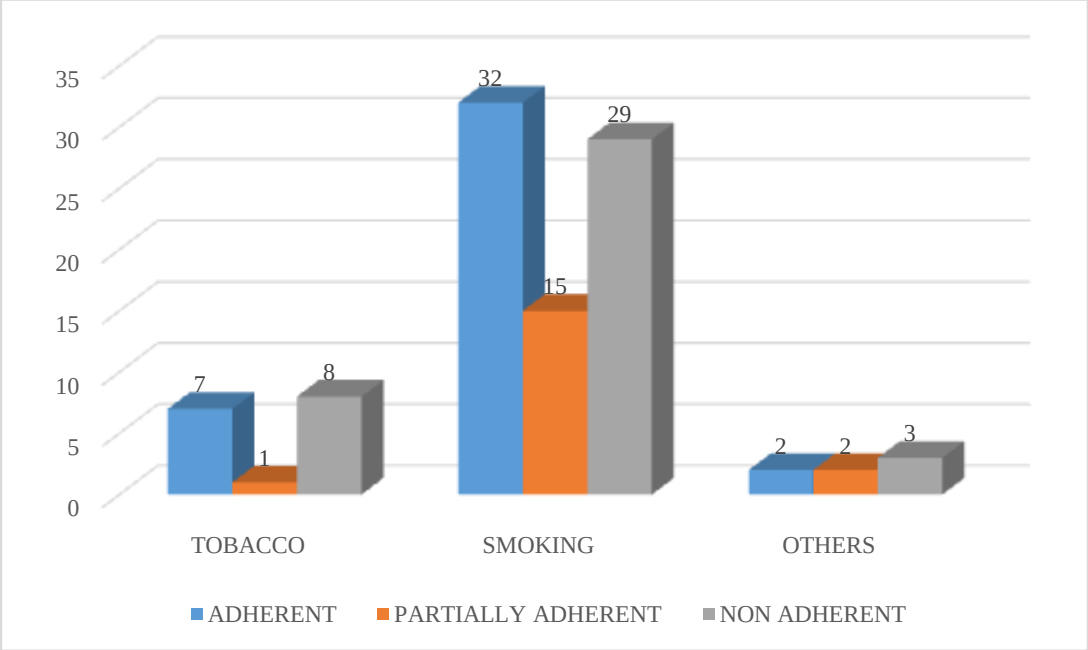


FIG 6: Medication adherence among participants with recreational drug use.(8th week follow-up)



BARRIERS TO MEDICATION ADHERENCE

Out of 130 participants 94 responses were collected. The majority response was found to be challenges in managing withdrawal symptoms and cravings, lack of motivation and other reasons.

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TABLE 4: BARRIERS TO MEDICATION ADHERENCE AMONG STUDY POPULATION

SL No.	BARRIERS	NO OF RESPONSE	PERCENTAGE [%]
1	AGE	0	0.00%
2	FEAR ABOUT TREATMENT ASSOCIATED SIDE EFFECTS	2	2.12%
3	FINANCIAL	4	4.25%
4	LACK OF TIME	5	5.31%
5	POLY PHARMACY	0	0.00%
6	OCCUPATIONAL STRESS	6	6.38%
7	COMORBID CONDITION	6	6.38%
8	DIFFICULTY IN SWALLOWING	0	0.00%
9	FORGETFULNESS	5	5.31%
10	LACK OF MOTIVATION	13	13.82%
11	CHALLENGES IN MANAGING WITHDRAWL SYMPTOMS AND CRAVINGS	27	28.72%
12	INADEQUATE MEDICATION ADHERENCE KNOWLEDGE	0	0.00%
13	LONG TERM DRUG REGIMENS	2	2.12%
14	FAMILY PROBLEM	8	8.51%
15	LANGUAGE BARRIER	0	0.00%
16	OTHERS	16	17.02%

III. DISCUSSION

In our current study there was increase in a non- adherent population from the treatment initiation to till to 8th week of therapy, During 2nd week follow up non adherence rate was 27.69% and in 8th week follow up non adherence rate was 39.23%, which is similar to the study conducted by K LOHITH, et.al, where they found the decrease in a medication adherence from 1st week follow up to 12th week follow up, During the 1st week follow up the medication rate was 89.61% and in the 12th week follow up the medication rate was 54.54%, which is also similar to our study . Which further reveals the contributing factors for non-adherence such as forgetfulness, lack of motivation etc which is similar to our study.[4]

A James R Walker et.al, conducted a study over a 715 population who received 4 medications for alcohol dependence, After he finished a monitoring period he came up with a findings that low overall adherence rate across all the medication with mean percentage of 41.3%. So the findings of A JAMES R WALKER et al. is identical to our study were overall adherent rate was reduced to 41.53% after completion of all the follow up the reason for reducing adherence rate which further discussed in both the study.[3]

It was found that out of 130 study population 94 responses were collected for the barriers influencing medication adherence in which majority was found to be in challenges in managing withdrawal symptoms and craving [28.72%], lack of motivation [13.82%] and others [17.02%].a study conducted by K LOHITH et al. there were 97 response with reasons for non-adherence in which majority were reported to stop anticraving medication on their own [39.17%] and 19.6% patients had experience for adverse drug reaction and other reasons included forgetfulness and lack of knowledge. It is observed that the reasons observed in both the study are different. As reasons may change from individual to individual perception.[4]

In our study majority of responses for medication adherence barriers are Lack of motivation, Challenges in managing withdrawal symptoms and Family problem. A study conducted by JAMES R WALKER et al. found that factors like medication side effects, complexity of regimen and stigma so this shows that the factors which is not similar to our study as we discussed above the reasons may change from person to person. [3]

A study conducted by B GRANTet al.on barriers to alcoholism treatment were found to be lack of confidence in the alcoholism treatment system and its effectiveness and denial were

identified as a significant barriers to alcoholism treatment .Barriers mentioned above which is similar to our study where we found lack of motivation or confidence as significant barriers[7].

IV. CONCLUSION

Non adherence global public health concern which demand immediate solution or a strategy to overcome this condition. We recommend pharmacist and other health care professionals to take initiative in developing a strategies to prevent non-adherence, because non adherence can further reduce quality of life and don't improve patient symptoms. Non adherence is high in psychiatric population so while initiating the therapy challenges of medication adherence must be considered.it is better to understand the contributing factors of non-compliance in a psychiatric treatment regimen, As there treatment regimen usually given for a prolonged period of time, as it is a long term therapy it's necessary to screen mental health status and quality of life of the patient on monthly basis. We should identify and consider patient related barriers while selecting the treatment regimen for patients. In overall, non-adherence participants needs empherical therapy and clinical pharmacist opinion for monitoring non adherence, For screening mental health status and while selecting the treatment regimen.

CONFLICT OF INTREST –NIL
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REFERENCES

[1]. Maki KG, Department of Health Services Research, The University at Texas, USA, MD Anderson Cancer Center, Harris KA, Department of Communication, University at Buffalo, The State University of New York, USA. Communication Strategies to Improve Medication Adherence: A Systematic Review of Literature. rev commun res. 2021;9:1–42.

[2]. Patel MX, David AS. Medication adherence: predictive factors and enhancement strategies. Psychiatry. 2004 Oct 1;3(10):41–4

[3]. Sinclair J, Chick J, Sørensen P, Kiefer F, Batel P, Gual A. Can Alcohol Dependent Patients Adhere to an 'As-Needed' Medication Regimen? European Addiction Research. 2014 Feb 15;20(5):209–17.

[4]. The Association between Alcohol Dependence and Depression before and after Treatment for Alcohol Dependence - PMC [Internet]. [cited 2024 Oct 4]. Available from: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3658562/

[5]. Maria Louis HS, Somasundaram AK, Swamynathan M, Vaikuntavasan DB. A Study on Prevalence of Alcohol Dependence in Coimbatore District. jemds. 2020 Aug 10;9(32):2279–83."

[6]. Stokes M, Patel P, Abdijadid S. Disulfiram. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2024 [cited 2024 Oct 4]. Available from: http://www.ncbi.nlm.nih.gov/books/NBK459340/

[7]. Grant BF. Barriers to alcoholism treatment: reasons for not seeking treatment in a general population sample. J Stud Alcohol. 1997 Jul;58(4):365-71. doi: 10.15288/jsa.1997.58.365. PMID: 9203117.