

Demographic and clinical profile of alcohol dependence syndrome in women availing de-addiction services in a tertiary care hospital: A Retrospective cross-sectional study

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ABSTRACT

Background: Alcohol dependence syndrome among women remains under-recognized in India, with limited gender-specific data from tertiary care settings.

Objectives: To describe the sociodemographic and clinical profile of women with alcohol dependence syndrome attending a tertiary care de-addiction service.

Methods: This retrospective cross-sectional study was conducted at a tertiary care teaching hospital in South India (January–December 2025). Records of women aged ≥ 18 years diagnosed with alcohol dependence syndrome (ICD-10) were reviewed. Sociodemographic details, alcohol use characteristics, comorbidities, functional impairment, and follow-up outcomes were analyzed using descriptive and inferential statistics ($p < 0.05$).

Results: Thirty-eight women were included (mean age 38.08 ± 7.90 years). Most were married (63.2%) and urban residents (60.5%). The mean age of initiation was 25.82 ± 4.85 years, and the mean duration of use was 13.21 ± 8.26 years. Moderate and severe dependence were observed in 55.3% and 36.8%, respectively. Psychiatric comorbidity was present in 31.6% and medical comorbidity in 23.7%. Age of initiation showed a significant negative correlation with duration of use ($r = -0.49$, $p = 0.002$). No significant association was found between severity and duration or psychiatric comorbidity. Nearly 44.7% were lost to follow-up.

Conclusion: Women with alcohol dependence in this tertiary care setting demonstrated prolonged alcohol use, substantial comorbidity, and high attrition rates. Early initiation was associated with longer duration of use, underscoring the need for gender-sensitive early identification and sustained treatment strategies.

Keywords: Alcohol dependence syndrome, women, psychiatric comorbidity, treatment-seeking, tertiary care, India, therapy.

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INTRODUCTION

Alcohol use continues to represent a significant public health challenge worldwide, contributing substantially to medical morbidity, psychiatric disorders, social dysfunction, and economic burden. While alcohol dependence syndrome has traditionally been perceived as predominantly affecting men, increasing attention has been directed toward the growing burden of substance use among women. Recent literature highlights the importance of gender-responsive and integrated approaches in the treatment of substance use disorders, particularly among women with co-occurring psychiatric conditions (1). This shift reflects a broader recognition that women with alcohol dependence constitute a distinct clinical subgroup with unique vulnerabilities and treatment needs. Hospital-based Indian data suggest that substance use disorders are prevalent across medical and psychiatric populations, with women increasingly represented among treatment-seeking individuals (2). Studies focusing specifically on women with alcohol-related problems attending de-addiction centers have reported a heterogeneous demographic and clinical profile, often characterized by marital stress, psychosocial adversity, and significant comorbidity (3). Epidemiological assessments from rehabilitation centers further indicate that women form a smaller but clinically complex proportion of in-facility clients, frequently presenting with advanced patterns of substance use and associated psychosocial impairment (4).

Sociodemographic factors play an important role in shaping patterns of substance use among women. Hospital-based studies from different regions of India have documented that women with substance use disorders commonly belong to socioeconomically vulnerable groups and may have limited educational attainment and restricted occupational engagement (5). Community-based data from rural India also indicate that substance use among females, though less prevalent than among males, is influenced by stress, sociocultural factors, and relational dynamics (6). Similarly, profiles of women seeking treatment at tertiary care de-addiction centers reveal the interplay of family environment, emotional distress, and social marginalization in the development and maintenance of substance use disorders (7). Psychological factors and comorbid psychiatric conditions significantly contribute to the clinical presentation of women with alcohol dependence. Studies examining women attending de-addiction services have documented substantial psychological distress, affective symptoms, and impaired functioning across family and social domains (8). Gender differences in psychiatric comorbidity have been emphasized in Indian research, with women demonstrating higher rates of mood and anxiety disorders alongside alcohol dependence (9). Additionally, alcohol use in women has been associated with broader health consequences, including sexual dysfunction and other physical health complications, further complicating clinical management (10). The severity of addiction and presence of co-occurring

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psychiatric and medical conditions have been shown to influence treatment outcomes and overall prognosis among women with alcohol use disorders. Hospital-based Indian studies have reported significant levels of addiction severity and comorbidity among women, underscoring the need for comprehensive assessment and integrated care models (11). Earlier descriptive work from northern India highlighted that women seeking treatment often present with multiple psychosocial stressors, functional impairment, and delayed treatment-seeking, reflecting sociocultural barriers and stigma surrounding female substance use (12). Despite increasing recognition of alcohol use among women, several gaps remain in the Indian literature. Women continue to be underrepresented in addiction research, and many available studies are retrospective, single-center reports with limited sample sizes. Moreover, substantial regional variation exists in patterns of alcohol use, sociodemographic characteristics, and comorbidity profiles. Contemporary, region-specific data describing women with alcohol dependence syndrome in tertiary care settings remain limited. Detailed profiling of age of initiation, duration and severity of dependence, associated psychiatric and medical comorbidities, and functional impairment is essential to inform gender-sensitive service planning and intervention strategies. Given these considerations, the present retrospective cross-sectional study was undertaken to describe the sociodemographic and clinical profile of women diagnosed with alcohol dependence syndrome availing de-addiction services in a tertiary care hospital. By systematically reviewing existing hospital records, this study aims to generate structured, region-specific evidence that may contribute to improved assessment practices, targeted interventions, and comprehensive care for women with alcohol use disorders.

Material and method

This hospital-based retrospective cross-sectional study was conducted at R.L. Jalappa Hospital and Research Centre, Tamaka, Kolar, a tertiary care teaching hospital providing outpatient and inpatient de-addiction services. The study period extended from January 2025 to December 2025. The study included female patients aged 18 years and above who were diagnosed with alcohol dependence syndrome according to the International Classification of Diseases, 10th Revision (ICD-10), and who availed de-addiction services during the study period. Patients below 18 years of age and those with incomplete or insufficient clinical records were excluded. The sample size was calculated using the single population proportion formula, as the objective was to describe the demographic and clinical profile of women with alcohol dependence syndrome without group comparison. Assuming a 95% confidence level ($Z = 1.96$), an expected proportion of 15% based on previous literature, and an allowable error of 12%, the minimum required sample size was calculated as 34. To account for incomplete or missing records, 10% was added, resulting in a final sample size of 38 participants. Data were collected retrospectively from existing hospital case records using a structured data extraction proforma developed for the study. No direct patient interviews or additional investigations were conducted. The extracted variables included sociodemographic details (age, marital status, education, occupation, residence), alcohol use characteristics (age of initiation, duration of use, severity of dependence, family

history, previous treatment), documented psychiatric and medical comorbidities, functional impairment in health and

Variable	Frequency (n)	Percentage (%)
Age (years)		
Mean $\pm$ SD	38.08 $\pm$ 7.90	
Range	24–53	
Marital Status		
Single	8	21.1
Married	24	63.2
Separated	4	10.5
Divorced	2	5.3
Widowed	0	0
Residence		
Rural	15	39.5
Urban	23	60.5
Education (years)		
Mean $\pm$ SD	8.39 $\pm$ 4.23	
Range	0–15	

family domains, and follow-up status with treatment outcomes. All records were screened for completeness prior to inclusion. Data were anonymized before entry to ensure confidentiality. The study involved secondary analysis of routinely recorded clinical data and posed minimal risk to participants. As there was no direct patient interaction and no intervention, a waiver of written informed consent was sought from the Institutional Ethics Committee in accordance with institutional guidelines. Data were entered into Microsoft Excel and analyzed using SPSS/Epi Info software. Continuous variables were expressed as mean $\pm$ standard deviation or median with interquartile range, as appropriate. Categorical variables were summarized as frequencies and percentages. Associations between variables were assessed using Chi-square or Fisher's exact test for categorical data and independent t-test or Mann–Whitney U test for continuous data. A p-value of less than 0.05 was considered statistically significant.

RESULTS

Sample Characteristics

A total of 38 women diagnosed with alcohol dependence syndrome were included in the analysis. The mean age of the participants was 38.08 $\pm$ 7.90 years (range: 24–53 years). Most participants were married (63.2%, $n = 24$), followed by single (21.1%, $n = 8$), separated (10.5%, $n = 4$), and divorced (5.3%, $n = 2$). A majority resided in urban areas (60.5%, $n = 23$), while 39.5% ($n = 15$) were from rural backgrounds. The mean years of education were 8.39 $\pm$ 4.23 years (range: 0–15 years).

Table 1. Sociodemographic Characteristics of Women with Alcohol Dependence Syndrome ($n = 38$)

Alcohol Use Characteristics

The mean age of initiation of alcohol use was 25.82 ± 4.85 years (range: 19–35 years). The mean duration of alcohol use was 13.21 ± 8.26 years, with a range of 2 to 32 years. In terms of severity of dependence (ICD-10 criteria), more than half of the participants were classified as having moderate dependence (55.3%, $n = 21$), while 36.8% ($n = 14$) had severe dependence and 7.9% ($n = 3$) had mild dependence. A positive family history of substance use was present in 47.4% ($n = 18$) of the sample.

Table 2. Alcohol Use Profile of Women with Alcohol Dependence Syndrome ($n = 38$)

Variable	Frequency (n)	Percentage (%)
Age of Initiation (years)		
Mean $\pm$ SD	25.82 ± 4.85	
Range	19–35	
Duration of Alcohol Use (years)		
Mean $\pm$ SD	13.21 ± 8.26	
Range	2–32	
Severity of Dependence (ICD-10)		
Mild	3	7.9
Moderate	21	55.3
Severe	14	36.8
Family History of Substance Use		
Absent	20	52.6
Present	18	47.4

Clinical and Functional Characteristics

Psychiatric comorbidity was identified in 31.6% ($n = 12$) of participants. Medical comorbidity was present in 23.7% ($n = 9$). The presence of comorbid conditions highlights the substantial clinical burden among women presenting with alcohol dependence. Functional impairment across domains was commonly observed. Health-related impairment was particularly prominent, with a substantial proportion reporting moderate to severe impairment. Family and social domains were also frequently affected, indicating multidimensional psychosocial consequences associated with alcohol dependence in women.

Table 3. Clinical and Functional Characteristics of Women with Alcohol Dependence Syndrome ($n = 38$)

Variable	Frequency (n)	Percentage (%)
Psychiatric Comorbidity		
Absent	26	68.4
Present	12	31.6

Medical Comorbidity		
Absent	29	76.3
Present	9	23.7
Health Impairment		
Mild	7	18.4
Moderate	15	39.5
Severe	16	42.1
Family Impairment		
Nil	4	10.5
Mild	11	28.9
Moderate	15	39.5
Severe	8	21.1

Follow-up and Treatment Outcomes

Regarding follow-up patterns, 23.7% ($n = 9$) maintained regular follow-up, 31.6% ($n = 12$) had irregular follow-up, and 44.7% ($n = 17$) were lost to follow-up. At the last available clinical contact, 42.1% ($n = 16$) were abstinent, 42.1% ($n = 16$) had relapsed, and 15.8% ($n = 6$) continued active alcohol use.

Table 4. Follow-up and Treatment Outcomes among Women with Alcohol Dependence Syndrome ($n = 38$)

Variable	Frequency (n)	Percentage (%)
Follow-up Status		
Regular follow-up	9	23.7
Irregular follow-up	12	31.6
Lost to follow-up	17	44.7
Current Status at Last Contact		
Abstinent	16	42.1
Relapse	16	42.1
Ongoing alcohol use	6	15.8

Note: *Abstinence was defined as no alcohol consumption at last recorded follow-up. Relapse was defined as recurrence of alcohol dependence following a period of abstinence.*

Association Analyses

A Kruskal–Wallis H test was conducted to examine whether duration of alcohol use differed across severity categories (mild, moderate, and severe). The analysis revealed no statistically significant difference in duration of use among the three groups ($p = 0.936$). Therefore, the null hypothesis of equal distributions was retained. As the omnibus test was not significant, post hoc pairwise comparisons were not

performed. Pearson's correlation analysis was performed to assess the relationship between age of initiation and duration of alcohol use. A statistically significant moderate negative correlation was observed ($r(36) = -0.49, p = 0.002$), indicating that earlier initiation of alcohol use was associated with a longer duration of alcohol consumption. The association between severity of dependence and psychiatric comorbidity was examined. As at least one expected cell frequency was less than five, the assumptions for the Chi-square test were violated; therefore, Fisher's Exact Test was considered appropriate. The analysis demonstrated no statistically significant association between severity of dependence and presence of psychiatric comorbidity ($p = 0.131$). The null hypothesis was not rejected.

Table 5. Association Between Clinical Variables (n = 38)

Variables Compared	Statistical Test	Test Statistic	p-value	Interpretation
Severity vs Duration of Use	Kruskal-Wallis H	—	0.936	Not significant
Age of Initiation vs Duration of Use	Pearson correlation	$r = -0.49$	0.002*	Moderate negative correlation
Severity vs Psychiatric Comorbidity	Fisher's Exact Test	—	0.131	Not significant

*Statistically significant at $p < 0.05$

Association analyses are summarized in Table 5. No statistically significant difference was observed in duration of alcohol use across severity categories (Kruskal-Wallis test, $p = 0.936$). Pearson correlation analysis demonstrated a statistically significant moderate negative correlation between age of initiation and duration of alcohol use ($r(36) = -0.49, p = 0.002$), indicating that earlier initiation was associated with longer duration of alcohol consumption. The association between severity of dependence and psychiatric comorbidity was not statistically significant (Fisher's Exact Test, $p = 0.131$).

DISCUSSION

The present study describes the sociodemographic and clinical profile of women diagnosed with alcohol dependence syndrome in a tertiary care setting. The findings highlight the multidimensional burden of alcohol dependence among women and underscore the need for gender-sensitive assessment and intervention strategies. The mean age of

participants in the present study was in the late thirties, consistent with recent Indian hospital-based studies reporting that women seeking de-addiction services are commonly in their third or fourth decade of life (11,13,14). The predominance of married women in our sample aligns with contemporary Indian literature suggesting that women often initiate or escalate alcohol use within marital contexts, frequently influenced by spousal substance use or psychosocial stressors (15,16). The urban predominance observed in this study is also consistent with recent epidemiological surveys indicating higher detection and treatment-seeking rates in urban populations compared to rural settings (17,18). The mean age of initiation of alcohol use in the mid-twenties observed in this study reflects patterns reported in recent Indian data, where women increasingly initiate alcohol use during young adulthood rather than adolescence (19,20). However, the duration of use exceeding a decade in many participants suggests delayed help-seeking, a phenomenon repeatedly emphasized in Indian gender-focused addiction research (21,22). Sociocultural stigma, caregiving responsibilities, and limited gender-responsive services may contribute to this treatment gap (23,24). More than half of the participants in this study had moderate dependence, and over one-third had severe dependence. This distribution mirrors findings from tertiary care addiction centers in India, where women frequently present at advanced stages of dependence (25,26). The presence of a positive family history in nearly half of the participants further supports Indian evidence indicating strong familial and environmental influences in women's substance use trajectories (27). Psychiatric comorbidity was observed in approximately one-third of participants. This finding is consistent with recent Indian hospital-based studies demonstrating high rates of mood and anxiety disorders among women with alcohol use disorders (11,28,29). Gender differences in psychiatric comorbidity patterns have been widely documented, with women exhibiting higher rates of internalizing disorders, trauma-related symptoms, and stress-related conditions compared to men (20,30). The coexistence of psychiatric morbidity complicates treatment outcomes and underscores the need for integrated care models. Medical comorbidity in nearly one-quarter of the sample reflects the recognized vulnerability of women to alcohol-related organ damage, even at comparatively lower consumption levels, due to biological differences in alcohol metabolism and body composition (31,32). Health-related functional impairment was particularly prominent in our study, reinforcing prior Indian findings that physical health consequences often precipitate treatment-seeking among women (33). A substantial proportion of participants were lost to follow-up, consistent with previous Indian reports highlighting poor retention in de-addiction services among women (34,35). Barriers such as stigma, childcare responsibilities, financial dependency, and limited family support are frequently cited contributors (22). Although abstinence rates among those who maintained follow-up were encouraging, relapse rates remained considerable, echoing findings from longitudinal Indian addiction studies (24,36). Overall, the present findings reinforce emerging evidence that women with alcohol dependence in India represent a clinically vulnerable population characterized by significant psychiatric comorbidity, functional impairment, and delayed treatment engagement. The results underscore the urgent need for

gender-responsive, accessible, and integrated addiction services tailored to women's unique psychosocial and biological vulnerabilities.

CONCLUSION

This study highlights that women with alcohol dependence syndrome presenting to a tertiary care de-addiction service constitute a clinically vulnerable population characterized by prolonged duration of alcohol use, substantial psychiatric comorbidity, and significant functional impairment. The predominance of married and urban women in the sample reflects evolving sociocultural patterns and increased detection within structured healthcare settings. The observed negative correlation between age of initiation and duration of use emphasizes the clinical importance of early onset as a marker of prolonged exposure. Although severity was not significantly associated with duration or psychiatric comorbidity in this sample, the findings suggest that women often seek treatment after years of sustained alcohol use, indicating delayed help-seeking. High rates of follow-up attrition further underscore systemic and psychosocial barriers to sustained treatment engagement. Given the multidimensional burden observed, there is a pressing need for gender-sensitive screening, early intervention strategies, integrated management of comorbid conditions, and improved retention frameworks within de-addiction services. Larger, prospective, multicenter studies are warranted to strengthen the evidence base and guide policy formulation for women-focused addiction care in India.

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