European Journal of Molecular & Clinical Medicine

ISSN 2515-8260 Volume 09, Issue 02, 2022

Assessment of disability in patients with alcohol dependence syndrome

Gopal Das CM

Associate Professor, Department of Psychiatry, Basaveshwara Medical College & Hospital, Chitradurga, Karnataka, India

Corresponding Author:
Gopal Das CM

Abstract

Objectives: To assess the extent of disability in patients with Alcohol Dependence Syndrome who presented for inpatient de-addiction programme.
Methods: 100 consecutive consenting patients within the age of 18-65 years, admitted under inpatient de-addiction unit of a tertiary care teaching hospital are included after excluding axis-1 psychiatric disorders, major medical illness and other disabilities. AUDIT, 36 item interview version of WHODAS 2.0 are administered and statistical analysis done.
Results: The mean summary score of WHODAS obtained in the study group is 53.7 and lies around the 95th percentile. Highest disability was found in Life activities (Work activities-84.3±17.38; household activities-75.8±22.26). Disability scores were found to be higher in complicated withdrawal group in statistically significant levels. Alcoholic Liver Disease was found to have statistically significant higher disability scores in work activities domain.
Conclusion: Alcohol Dependence Syndrome has high disability comparable to other mental illnesses. Early onset dependence group, complicated withdrawal group and those with complications resulting due to alcohol use have higher disability. These findings may help in devising better treatment approaches, planning and individualizing rehabilitation and improving productivity and functioning of patients and thus ultimately reducing burden on society.

Keywords: Alcohol dependence syndrome; disability, WHODAS, alcohol use disorders

Introduction

Alcoholism is a multifaceted disorder with etiologically complex and with a variety of vulnerability factors and outcomes with impairments from alcohol occurring in multiple areas of life functioning, despite which the person returns to drinking. The life time risk for Alcohol dependence is approximately 10-15% for men and 3-5% for women, with 1 year prevalence rates of about 6 percent. The peak ages of onset of dependence are from the early 20s to about the age of 40 [1].
A WHO report states Alcoholism ranks 1st in causing highest DALYs (Disability Adjusted Life Years) of about 44 millions in middle income group of nations [2]. Prevalence of alcohol use and Alcohol dependence in India is varied but National health Survey 2004 showed it to be around 21.4% [3] of the total alcohol-users, 17% were classified as dependent users based on ICD 10 criteria [3]. A study done in Karnataka [4] shows that the Per capita consumption of alcohol in Karnataka has gone up and one out of two people drink develops problem drinking.

ISSN 2515-8260 Volume 09, Issue 02, 2022

Early alcohol related health damage is under recognized by primary care physicians. The rate of admissions for alcohol related neuropsychiatric disorders is progressively increasing. This study emphasizes the growing problems of alcohol dependence in the state and associated health and financial burden on the society which directly and indirectly contributes to disability and lowers quality of life and productivity.
With such a considerable amount of problem, many researchers like, Foster *et al.* (1999) [5], Pal HR *et al.* 2000 [6], Kasturi P *et al.* 2010 [7] have emphasized about paucity of studies done on assessing disabilities in patients with Alcohol dependence Syndrome with internationally standardized instruments. Knowing about disability in alcohol dependent patients may help to frame policies for their treatment, rehabilitation and control of alcohol use and improve the quality of life for this huge population of hopeless patients.

Aims and objectives of study

Aims: To know about the disability in patients with Alcohol Dependence Syndrome.

Objectives

1. To assess the extent of disability in patients with Alcohol Dependence Syndrome.
2. To study the relationship between socio-demographic and clinical variables with disability.

Methodology

The study was conducted in inpatient section of dept. of Psychiatry of a tertiary care teaching general hospital in state of Karnataka, South India. 100 consecutive admissions were included into study after Informed consent is taken. Data about Socio-demographic profile of these patients was collected in a semi-structured pro-forma and Data regarding co-morbid psychiatric and medical conditions were noted. Each patient was administered MINI [8] and AUDIT [9]. Once patient was fit for detailed interviewing, they were administered WHODAS [10]. Some of the information was collected by patients' attendants.

Inclusion criteria

1. Persons aged between 18 and 65 years.
2. Those who fulfill the criteria for Alcohol Dependence Syndrome as per the diagnostic guidelines mentioned in ICD-10 [11].
3. Admitted into the inpatient deaddiction unit of Dept. of Psychiatry and who are able to give Valid Informed Consent.

Exclusion criteria

1. Primary axis-I psychiatric disorders.
2. Patients with major medical problems.
3. Patients with any other disabilities.

ISSN 2515-8260 Volume 09, Issue 02, 2022

Results and observations

Table 1: Socio-demographic variables and alcohol use related numerical variables

Variable	Mean (median)	Standard deviation
Age (In Years)	39.08	7.66
Total No. Of Education (In Years)	6.8	4.16
Total Family Income (In INR)	8580 (6000)	7647.12
Total Family Income (In INR)	8580	7467.1
Money Spent On Alcohol Per Day (In INR)	147.8	49.8
Age At First Drink (In Years)	21.6	5.2
Age At Regular Drink (In Years)	26.7	5.1
Amount Of Alcohol In Grams on A Typical Day	214	76.8

Other socio-demographic variables and alcohol use related categorical variables

Sample was predominantly male with only 6% females enrolled in the study. 74% of the patients were currently married, 8% were separated from their spouses and 2% each were divorced and widowed.
66% were hailing from urban background.
26% of the patients were unskilled laborers, 24% were semiskilled laborers, and 18% of the patients were unemployed at least during last 1 month.
Whiskey is reported to be the drink of their choice by most of the patients in this study accounting to 73% of the patients.
About 31% patients had history of withdrawal seizures including the present withdrawal.
About 41% patients had previous de-addiction treatment before the current one.
78% of the patients had family history of alcohol dependence in first degree relatives indicating high genetic background.
70% of the patients presented with uncomplicated withdrawal, 18% with delirium, 10% with delirium and seizures and 2% with seizures without delirium.

Additional diagnoses

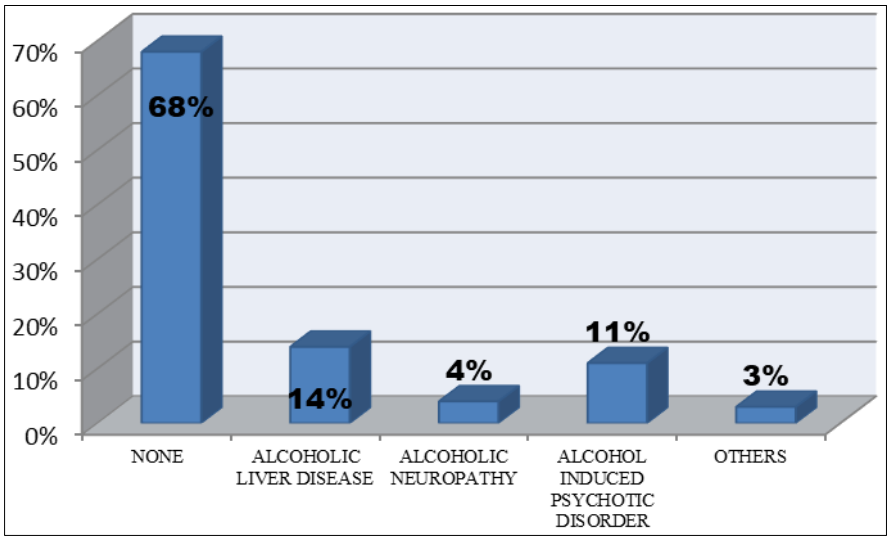

Fig 1: shows distribution of additional diagnoses

Additional diagnoses were those related to or induced by alcohol and not by any general medical condition which may have differentially contributed to disability. These were

diagnosed after detailed clinical, laboratory work-up and liaison with appropriate medical specialty. 68% of patients did not have any additional diagnoses.

Disability

Table 2: WHODAS 2.0 variables

Domain	Mean domain score	Standard deviation
Domain-1 Cognition	29.7	±20.17
Domain-2 Mobility	54.5	±23.80
Domain-3 Self-care	38.2	±24.96
Domain-4 Getting along with people	43.2	±19.48
Domain 5(1) Life activities-household activities	75.8	±22.26
Domain 5(2) Life activities-work or school activities	84.3	±17.38
Domain-6 Participation	57.9	±13.13
Summary Score	53.7	±13.13
H1- total days of disability	22.9	±5.58
H2-total inability to carry out activities	15.6	±4.77
H3-total days of cut back in activities	7.22	±3.19

The mean summary score obtained in the study group is 53.7 and lies around the 95th percentile.
Highest disability was found in Life activities domain in which work (Mean Domain score of 84.3) is affected more than household activities (Mean Domain score of 75.8) which implies a severe occupational dysfunction at least in the past 30 days before seeking treatment.
Correlating to it, the next domain to be affected most is the participation domain (Mean Domain score of 57.9) indicating difficulty in discharging social role and its consequences at least in the past 30 days. This domain is comparable to the mobility domain (Mean Domain score of 54.5) which indicates the physical disabilities caused by drinking which may interfere in all aspects of life especially in occupation.
The domain of interpersonal functioning named as 'Getting along well' is moderately affected (Mean Domain score of 43.2) where in close relationships, friendships, dealing with unknown people, sexual activity is affected.
The lesser affected domains are self-care (Mean Domain score of 38.2) and cognition (Mean Domain score of 29.7) which implies that patients were able to take care of them fairly well and think more clearly but were unable to function mainly because of physical, interpersonal and social limitations.
Total AUDIT scores were positively correlated at a statistically significant at the level of 0.01 to work activities and household activities. It is also correlated to summary score and total days of disability but weaker than life activities domain. It implies that higher the AUDIT score, more the disability in household and work activities.

Subgrouping, comparison and secondary analysis

The whole sample was further divided into following groups for comparison and secondary analysis. Those were,
Onset of alcohol dependence into early and late onset groups based on Cloninger typology
Type of withdrawal based on ICD-10 into complicated and uncomplicated withdrawal
Additional clinical diagnoses received along with ADS which are related to alcohol as causal role.
When groups are divided into early and late onset based on typology proposed by Cloninger *et al.* 1981[12], there existed significant differences between groups.

Table 3: Comparison of significant differences in socio-demographic and alcohol related variables among early and late ons*et al*cohol dependence

	Early onset		Late onset		Mann-Whitney U	Level of significance (absolute P value)
	Mean	Standard deviation	Mean	Standard Deviation		
Age at presentation (in years)	37.7	7.70	40.4	7.45	929.5	0.05 (0.027)
Age at first drink (in years)	18.1	2.68	24.3	5.36	291.5	0.01 (3.91×10^{-11})
Age at onset of dependence (in years)	23	2.18	30.2	4.64	0.000	0.01 (4.5×10^{-18})
Amount of alcohol use per day (in grams of ethanol)	236.3	75.02	192.9	73.06	850.0	0.01 (0.0044)
AUDIT score	29	2.81	26.8	3.75	781.0	0.01 (0.0011)

Table 4: Other important differences among the groups of early and late ons*et al*cohol dependence

	Early Onset ADS	Late Onset ADS
Family History of ADS	91.8%	64.7%
Unemployment rate	22%	13.7%
History of complicated withdrawal with delirium	22%	5.9%
History of complicated withdrawal with delirium with seizures	14%	0%
Alcoholic Liver Disease	37%	23.5%
Alcohol Induced Psychotic Disorder	2%	19.6%

Table 5: Differences between scores of WHODAS in early and late onset dependence groups Other Domains did not have statistically significant differences.

Domain	Early onset	Late onset	Mann-Whitney U	Level of significance (absolute p value)
	Mean(SD)	Mean(SD)		
Domain-4 Getting along with people	38.6 (18.76)	47.6 (19.31)	922.00	0.05 (0.022)
Domain 5(2) Life activities-work or school activities	87.6 (18.43)	81.1 (15.83)	911.5	0.05 (0.014)

Typing based on uncomplicated and complicated withdrawal groups

Complicated withdrawal group includes Delirium, Delirium with seizures and with seizures alone.

Table 6: Differences in WHODAS scores based on type of withdrawal groups

Domain	Uncomplicated Withdrawal	Complicated withdrawal	Mann-Whitney U	Level of significance (absolute p value)
	Mean(SD)	Mean(SD)		
Domain-1 Cognition	26.6 (20.26)	37.0 (18.27)	710.00	0.01 (0.01)
Domain-2 Mobility	49.6 (22.82)	65.83 (22.45)	580.50	0.01 (3.91×10^{-4})
Domain-3 Self-care	35.4 (25.35)	44.7 (23.15)	792.5	0.05 (0.05)
Domain 5(1) Life activities-household activities	71.71 (21.87)	85.33 (20.47)	1046.00	0.01 (0.004)

Domain 5(2) Life activities-work or school activities	81.6 (17.7)	90.5 (15.04)	734.00	0.05 (0.012)
Summary Score	51.5 (11.85)	58.9 (12.57)	653.50	0.01 (0.00284)
H1- total days of disability	22.2 (6.01)	24.5 (5.19)	796.00	0.05 (0.05)

Grouping based on additional diagnosis

Table 7: Differences in WHODAS scores based on additional diagnosis groups

Domain	Alcoholic Liver Disease	Alcoholic Neuropathy	Alcohol induced psychotic disorder	Kruskal-Wallis Chi square	Level of significance (absolute p value)
	Mean(SD)	Mean(SD)	Mean(SD)		
Domain-4 Getting along with people	45.2 (14.14)	35.4 (23.93)	62.9 (17.62)	6.972	0.05 (0.0306)
Domain 5(1) Life activities-household activities	85.7 (22.77)	57.5 (5.00)	68.18 (26.39)	7.162	0.05 (0.0278)
Domain-6 Participation	58.9 (12.32)	50.0 (12.26)	67.8 (8.95)	6.505	0.05 (0.0385)
Summary Score	51.5 (11.85)	58.9 (12.57)	61.2 (10.78)	No statistically significant differences	

Discussion

The mean summary score obtained in the study group is 53.7 and lies around the 95th percentile. Highest disability was found in Life activities domain in which work (Mean Domain score of 84.3) is affected more than household activities (Mean Domain score of 75.8) which implies a severe occupational dysfunction at least in the past 30 days before seeking treatment. Correlating to it, the next domain to be affected most is the participation domain (Mean Domain score of 57.9) indicating difficulty in discharging social role and its consequences at least in the past 30 days. This domain is comparable to the mobility domain (Mean Domain score of 54.5) which indicates the physical disabilities caused by drinking which may interfere in all aspects of life especially in occupation. The domain of interpersonal functioning named as 'Getting along well' is moderately affected (Mean Domain score of 43.2) where in close relationships, friendships, dealing with unknown people, sexual activity is affected. The lesser affected domains are self-care (Mean Domain score of 38.2) and cognition (Mean Domain score of 29.7) which implies that patients were able to take care of them fairly well and think more clearly but were unable to function mainly because of physical, interpersonal and social limitations.

In the Australian study [13] mentioned earlier, domain scores of WHODAS is determined and Our study group shows higher disability as compared to the domain scores of the compared study. Domain wise, in our study, Life activities is affected much followed by participation and mobility whereas this study shows major disability in participation domain followed by cognition and life activities domain. The probable reason for this difference may be higher rates of unskilled and semi-skilled jobs which have daily basis earnings and not insured resulting in lesser job security and higher rates of absenteeism. Higher rates of co-dependency [14] in family settings may have also contributed to poorer life activities scores.

Another Australian study [15] in young adults which have used WHODAS 2.0, state that

11.1% of young adults in the Australian population were diagnosed with an AUD. Young adults with AUDs were at greater risk of reporting another drug use disorder, an anxiety disorder, high levels of consumption and a moderate to severe score on the WHODAS 2.0. Mental health services were rarely used by young adults with AUDs. As the study excludes co-morbid axis-1 psychiatric disorders and other substance use other than nicotine, it could not be commented about co-morbidities. It is comparable to this study however, When patient group is divided based on age of onset of dependence ≤25 years as early onset dependence group (236g/day; SD-75.02), the levels of alcohol consumption was higher than the late onset group (192 g/day; SD-73.06) though the summary scores had no much difference between the groups and early onset group scored slightly higher disability in life activities and late onset group slightly higher in cognition, interpersonal and participation domains.

A National Epidemiologic Survey on Alcohol and Related Conditions (NESARC) study [16] from US measuring disability using SF-12 for measurement of disability states that alcohol dependence was highly and significantly associated with lower mental component summary (MCS), mental health, social functioning, and role emotional functioning. Disability increased steadily and significantly with alcohol dependence severity.

A study from NIMHANS [17] which has used WHODAS 2.0 to measure disability in OCD and Schizophrenia has following results as per table-8.

Table 8: Comparison of domain scores of ADS patients from NIMHANS study [17]

Domain	Ads (this study)	Nimhans study	
		OCD	Schizophrenia
Domain-1 Cognition	29.7	41.58	54.43
Domain-2 Mobility	54.5	18.22	15.00
Domain-3 Self-care	38.2	38.29	41.15
Domain-4 Getting along with people	43.2	47.86	65.95
Domain 5(1) Life activities-household activities	75.8	73.15	84.00
Domain 5(2) Life activities-work or school activities	84.3		
Domain-6 Participation	57.9	68.10	68.70

The disability in past 30 days as assessed by WHODAS is comparable to OCD and Schizophrenia. Mobility is particularly more affected than the above two mental disorders and all score high in life activity disability while ADS patients score much lesser in cognition whereas cognitive domain is more affected in mental disorders. This difference is probably due to higher risks of alcohol affecting mobility by involvement of Central Nervous system (cerebellum and spinal cord), peripheral neuropathy and proximal myopathy which contributes not only in physical disability but also occupational dysfunction.

An Indian study [18] assessing disability among mental disorders states that, a positive correlation between AUDIT score and IDEAS-GS and AUDIT score indicates the tendency of alcohol of causing impairment of functioning. 16.7% of the sample had disability more than 40%. The main area of functioning significantly influenced by alcohol included is interpersonal relations ($r=0.253$, $p<0.05$). Self-care appears to be the area, which is least, affected. This study includes co-morbidities such as anxiety and mood disorders associated with alcohol use and hence domain of interpersonal relations may be scored higher whereas

ISSN 2515-8260 Volume 09, Issue 02, 2022

these co-morbidities are excluded in this study. But on further grouping patients on basis of additional diagnosis they received regarding alcohol induced conditions, alcohol induced psychotic disorder(ICD-10) group scored much higher in getting along with people - 62.9(overall mean-43.2), cognitive – 43.6(overall mean-29.7) and participation – 67.8(overall mean-57.9).

Strengths of the study

The study is conducted in an inpatient de-addiction unit of a tertiary care teaching general hospital.
By excluding other substance dependence, axis-1 psychiatric illnesses and medical illnesses especially chronic medical illnesses, the major confounding factors for alcohol use induced disabilities are thus avoided so that disabilities exclusively induced by alcohol dependence could be reliably assessed. Use of MINI in screening out psychiatric syndromes can be justified here.
Use of internationally validated scales such as WHODAS 2.0 which includes all the domains as described in ICF and gives a comprehensive description of disability across 6 domains.
Interviewer version of the instruments is used to avoid reporting biases by patients who are distributed widely among different socio-economic and educational background.

Weaknesses of the study

It is a Cross-sectional, single site, one time evaluation study which measures indices only in past 30 days. No follow up is done on those patients who were included.
Population sample in this study may not actually represent the general population as it is done in a metropolitan city where rural representation tends to be lesser and a higher educational and economic status may be present.
Inpatient deaddiction Centre tends to have an enriched sample of more severe ADS patients who tend to have more disability and thus the outcome may have highlighted one extreme of ADS population and disability may look exaggerated when overall picture in other studies are taken into comparison. This may be reason as well for under- representation from female population though many studies have reported substantial number of female patients with ADS.
Recall bias during the past 30 days, particularly those who score poorer on cognitive domains, may have been present, though the duration is less and interview is conducted after clinical stabilization and patient is fit.
Other significant conditions such as personality traits and disorders, adult ADHD (Attention Deficit Hyperactivity Disorder), patients with dull normal to borderline intelligence, sub-syndromal psychiatric disorders that could not be reliably screened out using MINI and thus not excluded from the study which may have contributed to poorer outcome measures. Of particular interest are the first two conditions which are reported to be in a substantial number in AUDs especially in early onset group who constitute 49% of our study sample. These potentially contribute to higher disability, maintenance and relapses of alcohol dependence. Further studies that would attempt to exclude these reliably may refine the results.

Conclusions

Alcohol dependence syndrome is associated with high disability especially in life activities comparable to other mental and physical illnesses.
Age of onset of first drink and onset of dependence, amount of alcohol consumed influence disability.

Though there is no much difference in overall disability, early onset dependence group has comparatively higher disability in occupational functioning and late onset group has higher disability in social functioning.
Complicated withdrawal group has higher disability than that of simple withdrawal group
Further studies which incorporate wider samples with follow up, intervention, comparative groups, blinding of interviewer and including more accurate measures of alcohol dependence severity indices would give a more accurate measure of association of disability.
Measuring the disability in alcohol dependent patients would help in devising better rehabilitation programs with individualization and also governmental policies in improving care, productivity and reducing the burden of the disease on society.

Reference

1. Schuckit AM. Alcohol-Related Disorders. In: Sadock J, Sadock VA, Ruiz P. Kaplan & Sadock's Comprehensive Textbook of Psychiatry, 9th Ed. Philadelphia: Lippincott Williams & Wilkins. 2009;1:1268-70.
2. World Health Organization. Global health risks: mortality and burden of disease attributable to selected major risks-A WHO Report, 2009. Available from URL: http://www.who.int/healthinfo/global_burden_disease/GlobalHealthRisks_report_full.pdf
3. Ray R. The Extent, Pattern and Trends of Drug abuse in India, Ministry of Social Justice & Empowerment. Government of India. A Report for National Family Health Survey, 2004. Available from URL: http://www.whoindia.org/LinkFiles/Standard_Treatment_Guidelines_(STGs)_STG_content_alcohal1.pdf
4. Benegal V, Shantala A, Murthy P, Janakiramaiah N. Alcohol use and misuse in Karnataka. Dimensions of the alcoholism epidemic in Karnataka: the case for urgent action-A Position Paper submitted to the Karnataka Task Force on Health and Family Welfare, 1999. Available from URL: http://www.nimhans.kar.nic.in/deaddiction/lit/Karnataka_alcohol.pdf (pdf format)
5. Foster JH, Powell JE, Marshall EJ, Peters TJ. Quality of Life in alcohol-dependent subjects: a review. Quality of Life Research. 1999;8:255-61.
6. Pal HR, Saxena S, Chandrashekhar K, Sudha SJ, Murthy RS, Thara R, *et al.* Issues related to disability in India: A focus group study. Natl Med J India. 2000;13:237-41.
7. Kasthuri P, Chandrashekar H, Kumar CN, Prashanth NR. Disabilities research in India. Indian J Psychiatry. 2010;52:281-5.
8. Sheehan DV, Lecrubier Y, Sheehan KH, Amorim P, Janavas J, Weiler, E *et al.* The Mini-International Neuropsychiatric Interview (MINI): the development and validation of a structured diagnostic psychiatric interview for DSM-IV and ICD-10. J Clin Psychiatry. 1998;59(20):22-23.
9. Babor TF, De la Fuente JR, Saunders JB, *et al.* audit-The Alcohol Use Disorders Identification Test: Guidelines for use in Primary Health Care. Geneva: World Health Organization, 1992.
10. World Health Organization Disability Assessment Schedule II (WHODAS II), 2001. Available from URL: http://www.who.int/icidh/whodas/index.html.
11. World Health Organization (WHO). The ICD-10 Classification of Mental and Behavioral Disorders-Diagnostic Criteria for Research. Geneva Switzerland: World Health Organization, 1992.
12. Cloninger CR, Bohman M, Sigvardsson S. Inheritance of alcohol abuse: Cross-fostering analysis of adopted men. Arch Gen Psychiatry. 1981;38:861-68.
13. Philip PAL, George G, Whelan, Khelifa AN. Quality of life and disability in alcohol and drug dependent patients undergoing treatment at Depaul House. I.e. JSME. 2007:1:35-40.

ISSN 2515-8260 Volume 09, Issue 02, 2022

14. Bhowmick P, Tripathi BM, Jhingan HP, Pandey RM. Social support, coping resources and codependence in spouses of individuals with alcohol and drug dependence. Indian J Psychiatry. 2001:43(3):219-224.
15. Mewton L, Teesson M, Slade T, Grove R. The Epidemiology of DSM-IV Alcohol Use Disorders amongst Young Adults in the Australian Population. Alcohol and Alcoholism. 2011;46(2):185-91.
16. Hasin DS, Stinson FS, Ogburn E, Grant BF. 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. Arch Gen Psychiatry. 2007;64(7):830-842.
17. Gururaj GP, Bada Math S, Reddy JYC, Chandrashekar CR. Family burden, quality of life and disability in obsessive compulsive disorder: An Indian perspective. J Postgrad Med 2008;54:91-7.
18. Chaudhury PK, Deka K, Chetia D. Disability associated with mental disorders. Indian J Psychiatry. 2006;48:95-101.