International Journal of Research in Medical Sciences
Singh Y et al. Int J Res Med Sci. 2021 Feb;9(2):458-465
www.msjonline.org
pISSN 2320-6071 | eISSN 2320-6012

DOI: https://dx.doi.org/10.18203/2320-6012.ijrms20210424

Original Research Article

Demographic correlates of nicotine dependence in psychiatric patients

Yogendra Singh, Anil Sisodia, Anil Gaur, Vikrant Agarwal*

Department of psychiatry, Institute of Mental Health and Hospital, Agra, Uttar Pradesh, India

Received: 20 November 2020
Accepted: 19 December 2020

***Correspondence:**
Dr. Vikrant Agarwal,
E-mail: dr.vikrantagrawal@gmail.com

ABSTRACT

Background: Tobacco and nicotine dependence has high prevalence in patients with psychiatric disorders. The present study was conducted to delineate demographic correlates of tobacco and nicotine dependence in psychiatric patients.
Methods: 102 patients were sampled from Institute of Mental Health and Hospital, Agra. Fagerström test for nicotine dependence for smoking, Fagerström test for nicotine dependence for smokeless tobacco, the drug abuse screening test (DAST), alcohol use disorders identification test (AUDIT) were used along with a proforma for recording demographic and clinical details of the patients.
Results: The results suggested that the severity of nicotine dependence in total sample was as Very Low in 2.9%, Low in 15.7%, medium in 42.2%, and High in 39.2%. The results of association between demographic variables and nicotine dependence suggested that there was statistically significant association between nicotine dependence and gender, place of residence, marital status, type of family, annual income, history of mental illness, History of substance use and duration of tobacco use.
Conclusions: The medium and high level of nicotine dependence amount to 81.40% sample is of true concern which warrant for an active intervention for tobacco cessation programs in majority of the patients.

Keywords: Correlates of nicotine dependence, Fagerström test for nicotine dependence, Nicotine dependence, Tobacco and mental health, Tobacco cessation program

INTRODUCTION

Tobacco consumption is a worldwide problem and excessive tobacco usage in the form of smoking and smokeless is an example of modern epidemic and also known as “the brown plague.” Epidemiological studies from developed countries pointed out about the wide variability in tobacco use between various population and subgroups. The prevalence of tobacco use is more in southeast Asian countries specifically in India, tobacco is used both through smoked and smokeless forms.[1] Beedi and cigarette filled with tobacco are most commonly used in smoked form. Smokeless tobacco can be used as chewing or sniffing. The smokeless forms of tobacco consumption in India include chewing tobacco in form Zarda, Gutka and inhalation of snuff.[2,3] It is known to be related with respiratory, cardiovascular, gastrointestinal and urogenital diseases and also a number of malignancies. According to an estimate, tobacco causes approximately six million deaths in a year worldwide, and out of them one fifth occur in the Southeast Asian region.[4] In India, smoking tobacco was found responsible for 0.9 million deaths, and 0.35 million deaths in a year due to smokeless tobacco.[5,6] Nicotine is the principal chemical in tobacco, which causes both physical as well as psychological dependence.

According to a survey by the Substance Abuse and Mental Health Services Administration (SAMHSA) 2014, it is reported that there are 20.2 million adults with a history of substance use, 7.9 million (39.1 percent) had some kind of psychiatric illness. But among adults

without substance use disorder in past year, only 16.2 percent had psychiatric illness, suggestive of a relationship between substance use and psychiatric illness. In India, National Household Survey of Drug and Alcohol Abuse in a nationwide survey found that tobacco was prevalent among 55.8% respondents.[7] It has also been found that tobacco use rates are higher among patients having mental disorders. In an Epidemiological study, it was found that 29% persons having psychiatric disorders had a comorbid substance use disorder as compared to 13% between people devoid of any mental disorder.[8] Some studies reported that persons with psychiatric illness have more chance of tobacco use and less chance of cessation.[9] Smoking people have more chance of meeting the criteria for psychiatric disorders.[10] In western countries it is recognized that persons with a history of mental illness, smoke twice compared to the general population. In U.S persons with a history of mental illness consume about one-half of the tobacco. In a study it is found that tobacco user have greater rates of depression than non-users.[11] Tobacco users with depression as compared to non-depressed tobacco users experience greater difficulty in quitting.[12] Studies have reported that this population is two times more likely to be tobacco dependent than the general population.[13,9,5] Studies done in the general population as well as in the clinical population revealed that tobacco use prevalence has been found to be higher in patients with BPAD than that the general population. It has also been revealed that schizophrenic patients have greater chances of being found smoking compared to general population.[14] Subramaniam et al did a study in young males in Singapore to find the prevalence of nicotine dependence and its association with psychiatric disorders.[15] The prevalence of nicotine dependence was 12.3% in the population of 9,702 males. Nicotine dependence was most strongly related with delusional disorder and depressive disorder, which remained. 2,473(25.5%). Prevalence of anxiety disorders among those with nicotine dependence was 30.1% versus 8.7% among those non- nicotine dependences, mood disorders among nicotine dependence was 12.6% versus 1.2% among those non-nicotine dependences, while that of any psychotic disorder was 14.3% versus 2.0% among that non-nicotine dependence, major depressive disorder (9.6%), specific phobia (21.6%), and brief psychotic disorder (9.6%).

Talati et al findings suggest that smokers have extremely high psychiatric susceptibility.[16] Aguilar et al explored the incidence of smoking in Spanish schizophrenia patients and its connotation with symptoms, medication side effects and outcome Mild dependent smokers had lower PANSS total and positive symptoms than non-smokers and highly dependent smokers.[17] Extremely dependent smokers had the poorest outcome. The findings were taken as suggesting complex relations between nicotine dependence and schizophrenic symptoms.

Fu et al conducted a study to identify the psychiatric correlates of smokeless tobacco and found Mania or hypomania, Obsessive-compulsive, paranoid, Schizoid, and histrionic personality disorders, Antisocial personality disorder and substance use disorders including alcohol, cannabis, amphetamine, opiates, sedatives, cocaine, and hallucinogens were expressively associated with smokeless tobacco use compared to smoking.[18] Sedative, heroin and inhalant use were associated with exclusive chewing tobacco and dual use of snuff and chewing tobacco.

Various studies described that hospitalization of the patients with psychiatric illness with smoking behavior are higher compared to non-smokers.[19,20]

People with psychiatric illness are expected to die earlier due to tobacco-related complications as compared to people without psychiatric illness in the general population.[21] Tobacco use among individuals with mental illness is a significant problem that goes untreated and ignored and pays to extremes in morbidity and mortality that are mostly preventable. The development of a global economy, the extensive marketing of tobacco products and the susceptibility of mentally ill peoples make it likely that people living with a mental disorder in developing countries may also use tobacco at an unbalanced rat.[6] Most of the studies pay attention on smoking form. Smokeless form is always underestimated. There are very few studies on smoking and its link with specific mental illness and still fewer studies on smokeless form of tobacco. This is in spite of high use of smokeless tobacco in India. Since tobacco use is a social and health problem, it is important to understand the perception and pattern of tobacco use in psychiatric patients. In comparison, the prevalence of smoking in persons with psychiatric illness in developing nations has not been studied properly.

The aim of the present study was to estimate tobacco use and nicotine dependence and their psychosocial correlates in persons with psychiatric disorders.

The objective of the study was to estimate the nicotine dependence in psychiatric disorders. To study the socio-demographic correlates of nicotine dependence in psychiatric disorders.

METHODS

This was a cross sectional study carried out in Institute of Mental Health and Hospital (IMHH) Agra, a famous tertiary center for psychiatric patients.

Sample

102 patients with the following inclusion and exclusion criteria were taken for the study. The duration of the study was eighteen Months (April 2018 to Oct. 2019).

Inclusion criteria

Patients diagnosed with following psychiatric illness-such as Mood disorders, Psychotic disorders, Neurotic disorders. Age range of the patients 18-60 years. Patients who gave informed written consent. Patients having more than grade-1 insight.

Exclusion criteria

Patients diagnosed as primary case of substance use disorder except nicotine. Patients with age <18 years or >60 years. History of mental retardation and any medical or neurological disorder. Patients with altered sensorium, memory deficit, delirium or any other organic illness. Patents who did not give written informed consent. Patients who were in Grade-1 of insight (complete denial of illness).

Tools

Fagerström test for nicotine dependence for smoking

Developed by Karl-Olov Fagerstrom was used to assess the intensity of addiction to nicotine specifically nicotine dependence tolerance and withdrawal related to smoking.[22] It consists of 6 items. Yes/no items are scored from 0 to 1 and multiple-choice items are scored from 0 to 3. The items are summed to yield a total score of 0 - 10.A score of 0-2=very low dependence, 3-4=low dependence, 5-6=medium dependence, 7 or more=high dependence.

Fagerström test for nicotine dependence for smokeless tobacco

This test is widely used and has been applied in studies conducted to evaluate nicotine dependence in India.[23,24] This scale has 6 items which quantify the dependence of a person on smokeless form of tobacco. A score of 0 – 2 = very low dependence, 3 – 4 = low dependence, 5 – 6= medium dependence, 7 or more = high dependence.

The drug abuse screening test (DAST)

Was developed in 1982 by Skinner and is still an excellent screening tool to provide a brief, simple, practical, but valid method for identifying and quantifying the degree of problems related to drug use and misuse.[25] It has 28 items and a score of 0-5 indicates Low, 6-10-moderate, 11-15-substantial, 16 or more – Severe dependence.

Alcohol use disorders identification test (AUDIT)

It is a 10-item screening tool developed by the World Health Organization (WHO) 26 to assess alcohol consumption, drinking behaviors, and alcohol-related problems. The answers are scored on a point system; a score of 0-8-Low, 8-15 medium and more than 15 indicates high dependence. A score of more than eight indicates an alcohol problem.

Procedure

Ethical clearance was taken from ethical committee for carrying out the study. Patients enrolled with IMHH were screened for nicotine dependence and classified the dependence among various types of mental illness under the diagnostic criterions of mental illnesses according to International Classification of Diseases (ICD 10). Patients were explained about the study and informed consent was taken for the same, in the language most comfortable to the patients. The socio-demographic profile were assessed regarding age, gender and place of residence, income, marital status, education, income, and employment status. To assess nicotine use, type and frequency of tobacco used, the Fagerstrom Test for Nicotine Dependence (FTND) was used. The FTND was administered separately for smoking (cigarettes and bidis) and smokeless tobacco. Drug Abuse Screening Test (DAST) and AUDIT were used to screen for other substances for exclusion of the patients.

RESULTS

The mean and SD of age of the participants was 35.62±9.83. Majority of the participants, 53.9% were in the age group of 25 to 39 years, followed by the patients in the age range of 40 to 54 years (31.4%), and 10.8% subjects were in the age group of 18 to 24 years age, 3.9% belonged to 54 to 60 years age group. Among the participants, majority 63.7% were married, followed by 25.5% unmarried, 7.8% were divorced or separated and 2.9% were widows or widower. (89.2%) participants were Hindus and 10.8% were Muslims and 63.7% were living in rural area and 36.3% were living in urban area. 51% subjects belonged to joint families and 49% were from nuclear families. Educational status of participants revealed that 40.2% have passed secondary and senior secondary school, (13.7% were graduates and 19.6% were uneducated. Majority of the participants 30.4% had annual income within Rs.0-20000, 27.5% within 20001-40000, 18.6% within 40001-6000 and 23.5% were earning more than 60000 Rs. per year. The distribution of patients as per diagnosis showed that 50% had schizophrenia spectrum disorders, 32.4% had BPAD, 14.7% had depression and 2.9% had neurotic stress, somatoform disorder. Majority of subjects were using chewing tobacco (49%), 29(28.4%) were using Gutakha, 20.6% were using Bidi and 2% were using Cigarette. On classifying based on the route of tobacco intake, it was seen that majority 77.5% were using chewing tobacco and 22.5% were using smoking tobacco. Majority 55.9% started using tobacco before the onset of illness and 44.1% after the onset of illness. On eliciting history of substance use other than tobacco, it was found that 36.3% did not use any substance. Sedative hypnotics was the most commonly used substance (23.5%) followed by 20.6% alcohol use 12.7% cannabis use and 6.9% had

history of using more than one substance. 84.3% subjects did not had any family history of mental illness, whereas 15.6% had family history of mental illness. and 9.8% had family history of substance use.

Table 1: Sample characteristics.

Variables	Sub variables	Frequency	Percentage
Gender	Male	83	81.4
	Female	19	18.6
Age	18-24 years	11	10.8
	25-39 years	55	53.9
	40-54 years	32	31.4
	54-60 years	4	3.9
Marital status	Married	65	63.7
	Unmarried	26	25.5
	Divorced	8	7.8
	Widow/ widower	3	2.9
Religion	Hindu	91	89.2
	Muslim	11	10.8
Place of residence	Rural	65	63.7
	Urban	37	36.3
Type of family	Joint	52	51
	Nuclear	50	49
Education status	Primary (1-5)	10	9.8
	Middle school (6-8)	17	16.7
	Secondary and senior	41	40.2
	Graduate	14	13.7
	Uneducated	20	19.6
Annual income groups	0-20000	31	30.4
	20001-40000	28	27.5
	40001-60000	19	18.6
	more than 60000	24	23.5
ICD-10	Schizophrenia and schizophrenic form disorder	51	50.0
	Bipolar	33	32.4
	Depression	15	14.7
	Neurotic	3	2.9
Tobacco use	Chewing tobacco	50	49.0
	Gutakha	29	28.4
	Bidi	21	20.6
	Cigarette	2	2.0
Route of tobacco intake	Chewing	79	77.5
	Smoking	23	22.5
Start of tobacco use	Before onset of illness	57	55.9
	After onset of illness	45	44.1

Table 2: FTND categories.

Variables	Sub variables	Frequency	Percentage
FTND score categories	0-2 (Very low)	3	2.9
	3-4 (Low)	16	15.7
	5-6 (Medium)	43	42.2
	7-10 (High)	40	39.2

Table 3: Association of FTND score with demographic variables.

Variables	Sub variables	Frequencies as per FTND score				$\chi 2$ p value
		V. Low	Low	Medium	High	
Age	18 – 24 years	0	3	5	3	ns
	25-39 years	1	9	26	19	
	40-54 years	2	4	10	16	
	54-60 years	0	0	2	2	
Sex	Female	1	2	8	8	0.05
	Male	2	14	35	32	
Religion	Hindu	3	13	39	36	ns
	Muslim	0	3	4	4	
Residence	Rural	0	7	31	27	0.05
	Urban	3	9	12	13	
Tobacco type	Chewing	3	13	32	31	ns
	Smoking	0	3	11	9	
Marital status	Married	2	9	28	26	0.01
	Unmarried	1	5	13	7	
	Divorced	0	2	1	5	
	Widow / widower	0	0	1	2	
Type of family	Joint	0	11	20	21	0.01
	Nuclear	3	5	23	19	
Income per year	0-20000	0	5	12	14	0.01
	20000-40000	1	6	11	10	
	40000-60000	1	3	8	7	
	>60000	1	2	12	9	
Family H/O mental illness	Yes	0	0	1	6	0.05
	No	3	15	36	32	
Family H/O substance use	Yes	0	1	5	4	0.01
	No	3	15	38	36	
Duration of tobacco use	Before illness	1	5	23	28	0.05
	After illness	2	11	20	45	
ICD diagnosis	Schizophrenia	2	9	24	16	ns
	BPAD	1	6	11	15	
	Depression	0	1	7	7	
	Neurotic stress and somatoform disorder	0	0	1	2	
Other substance use	Alcohol	1	2	10	8	ns
	Cannabis	0	1	7	5	
	Sedative hypnotics	0	5	10	9	
	Multiple substance use	0	0	3	4	
	None	2	8	13	14	

Among the participants, 42.2% had medium level of dependence (FTND score 5 or 6) and 39.2% had high dependence (FTND score>6), 15.7% had low and 2.9% very low dependence.

On analyzing association of different age groups with FTND score, it was seen that chi square value was not significant between age and Nicotine dependence. It also revealed that there was no relation between Nicotine dependence and religion, mode of taking Tobacco, type of mental illness and use of other substances. Whereas there was a statistically significant association between nicotine dependence and gender (0.05) place of residence (0.05), marital status (0.01), type of family (0.01), annual income (0.01), history of mental illness (0.05), History of substance use (0.01) and duration of tobacco use (0.05).

DISCUSSION

Mentally ill patients are especially vulnerable to nicotine and other substance use. A lot of researches have also been done for nicotine intake and Schizophrenia. It has been found that this is due to an attempt to self-medicate in order to reduce the auditory hallucinations; many such

correlates with other psychiatric disorders also have been well established. Present study was conducted to estimate the nicotine dependence in various psychiatric disorders and its socio-demographic correlates.

In this study among the 102 participants, majority 83 (81.4%) were males and 19 (18.6%) were females. Mean and SD of age of the participants was 35.62 ±9.83 years, which reflects current population dynamics of India.[27] It is seen that females are less nicotine dependence as cultural background of Indian females restrains them to consume nicotine.

Majority of the participants, 55 (53.9%) were in the age group of 25 to 39 years, married and males. Most patients belonged to Hindu community which reflects the majority religion in the country. Most patients belong to rural background with income group of Rs. <20,000 per year because of less expenditure in this Govt. hospital which were in accordance with the most common population enrolled in the institute. The educational background of majority of participants was secondary and senior secondary level.

Majority of patients were having schizophrenia spectrum disorders (50%), followed by mood disorders (32.4%) BPAD and 14.7% depression. The findings are similar to the findings of a study done by Chandra et al.[28] which reported that majority of the subjects were Hindu, having primary education, married, and from rural background. The most common primary diagnosis was a mood disorder (47%) followed by psychotic disorders (39%) neurotic and other disorders (14%). Findings of are comparable to this study. Although the most common diagnosis in present study is schizophrenia spectrum disorder due to more representation of schizophrenia patients in the Institute

When various associations between nicotine dependence and demographic variables were explored, following results were obtained- majority started to use tobacco before the onset of illness and rest started to use tobacco only after the onset of illness. There was significant association between duration of tobacco use and nicotine dependence. Possible reasons for taking up smoking early could be related to self-medication for the symptoms at trait level and might be shared with other risk factors for psychiatric disorders.[29] More nicotine dependence (45.2%) is found among poor income group (income Rs. <20000 per year). Psychiatric patients have less chances of getting employed and participate in few activities; they use tobacco as behavior filler.[3] Beedi smoking is more common among poorer, rural, and less educated patients.

There was significant association between marital status and nicotine dependence. This could be because patients who were single or divorced might not get the necessary care and supervision provided by the spouse, thus making them more vulnerable to nicotine dependent behaviour.[31]

There was a statistically significant association between residential background and nicotine dependence. The reason of high prevalence of nicotine use in the rural area might be due to availability of free nicotine in raw form cultivated in the land and poor awareness regarding health made them vulnerable to nicotine use and dependence.[32]

Results of the study showed higher use of smokeless forms as compared to smoked form of nicotine. This may be related to the social acceptance of smokeless forms in India and also a consequence of a legal ban of smoking in public places.

This study found no relationship between nicotine dependence and type of psychiatric illness. Similarly prior studies have found a lack of diagnostic specificity with tobacco use.[33-35]

CONCLUSION

The patients with psychiatric disorders do have high rate of nicotine dependence. Majority of the patients were having medium to high level of nicotine dependence. Given the risks involved in tobacco and nicotine induced conditions, it is recommended that tobacco cessation programs should be considered on priority for the psychiatric patients having nicotine dependence.

Funding: No funding sources
Conflict of interest: None declared
Ethical approval: The study was approved by the Institutional Ethics Committee

REFERENCES

1. Islam K, Saha I, Saha R, Samim Khan SA, Thakur R, Shivam S. Predictors of quitting behaviour with special reference to nicotine dependence among adult tobacco-users in a slum of Burdwan district, West Bengal, India. Indian J Med Res. 2014;139(4):638-42.
2. Bedi R, Gilthorpe MS. The prevalence of betel-quid and tobacco chewing among the Bangladeshi community resident in a United Kingdom area of multiple deprivation. Prim Dent Care. 1995;2(2):39-42.
3. Summers RM, Williams SA, Curzon ME. The use of tobacco and betel quid ('pan') among Bangladeshi women in West Yorkshire. Community Dent Health. 1994;11(1):12-6.
4. Lim SS, Vos T, Flaxman AD, Danaei G, Shibuya K, Adair-Rohani H, et al. A comparative risk assessment of burden of disease and injury attributable to 67 risk factors and risk factor clusters in 21 regions, 1990-2010: a systematic analysis for the Global Burden of Disease Study 2010. Lancet. 2012;380(9859):2224-60.
5. Lasser K, Boyd JW, Woolhandler S, Himmelstein DU, McCormick D, Bor DH. Smoking and mental

illness: A population-based prevalence study. JAMA. 2000;284(20):2606-10.
6. Sinha DN, Palipudi KM, Gupta PC, Singhal S, Ramasundarahettige C, Jha P, Indrayan A, Asma S, Vendhan G. Smokeless tobacco use: a meta-analysis of risk and attributable mortality estimates for India. Indian J Cancer. 2014;51 Suppl 1:S73-7.
7. Jain R, Majumder P, Gupta T. Pharmacological intervention of nicotine dependence. Biomed Res Int. 2013;2013:278392.
8. Regier DA, Farmer ME, Rae DS, Locke BZ, Keith SJ, Judd LL, Goodwin FK. Comorbidity of mental disorders with alcohol and other drug abuse. Results from the Epidemiologic Catchment Area (ECA) Study. JAMA. 1990;264(19):2511-8.
9. Smith PH, Mazure CM, McKee SA. Smoking and mental illness in the U.S. population. Tob Control. 2014;23(e2):e147-53.
10. Degenhardt L, Hall W. The relationship between tobacco use, substance-use disorders and mental health: results from the National Survey of Mental Health and Well-being. Nicotine Tob Res. 2001;3(3):225-34.
11. Brown RA, Lewinsohn PM, Seeley JR, Wagner EF. Cigarette smoking, major depression, and other psychiatric disorders among adolescents. J Am Acad Child Adolesc Psychiatry. 1996;35(12):1602-10.
12. Pomerleau CS, Zucker AN, Namenek Brouwer RJ, Pomerleau OF, Stewart AJ. Race differences in weight concerns among women smokers: results from two independent samples. Addict Behav. 2001;26(5):651-63.
13. de Leon J, Diaz FJ. A meta-analysis of worldwide studies demonstrates an association between schizophrenia and tobacco smoking behaviors. Schizophr Res. 2005;76(2-3):135-57.
14. Srinivasan TN, Thara R. Smoking in schizophrenia -- all is not biological. Schizophr Res. 2002;56(1-2):67-74.
15. Subramaniam M, Cheok C, Lee IM, Pek E, Verma S, Wong J, Chong SA. Nicotine dependence and psychiatric disorders among young males in Singapore. Nicotine Tob Res. 2009;11(9):1107-13.
16. Talati A, Keyes KM, Hasin DS. Changing relationships between smoking and psychiatric disorders across twentieth century birth cohorts: clinical and research implications. Mol Psychiatry. 2016;21(4):464-71.
17. Aguilar MC, Gurpegui M, Diaz FJ, de Leon J. Nicotine dependence and symptoms in schizophrenia: naturalistic study of complex interactions. Br J Psychiatry. 2005;186:215-21.
18. Fu Q, Vaughn MG, Wu LT, Heath AC. Psychiatric correlates of snuff and chewing tobacco use. PLoS One. 2014;9(12):e113196.
19. de Leon J, Dadvand M, Canuso C, White AO, Stanilla JK, Simpson GM. Schizophrenia and smoking: an epidemiological survey in a state hospital. Am J Psychiatry. 1995;152(3):453-5.
20. Shinozaki Y, Nakao M, Takeuchi T, Yano E. Smoking rates among schizophrenia patients in Japan. Psychiatry Res. 2011;186(2-3):165-9.
21. Bandiera FC, Anteneh B, Le T, Delucchi K, Guydish J. Tobacco-related mortality among persons with mental health and substance abuse problems. PLoS One. 2015;10(3):e0120581.
22. Heatherton TF, Kozlowski LT, Frecker RC, Fagerström KO. The Fagerström Test for Nicotine Dependence: a revision of the Fagerström Tolerance Questionnaire. Br J Addict. 1991;86(9):1119-27.
23. D'Souza G, Rekha DP, Sreedaran P, Srinivasan K, Mony PK. Clinico-epidemiological profile of tobacco users attending a tobacco cessation clinic in a teaching hospital in Bangalore city. Lung India. 2012;29(2):137-42.
24. Manimunda SP, Benegal V, Sugunan AP, Jeemon P, Balakrishna N, Thennarusu K, Pandian D, Pesala KS. Tobacco use and nicotine dependency in a cross-sectional representative sample of 18,018 individuals in Andaman and Nicobar Islands, India. BMC Public Health. 2012;12:515.
25. Skinner HA. The drug abuse screening test. Addict Behav. 1982;7(4):363-71.
26. WHO. AUDIT, World Health Organization, 2001
27. Xaxa V, Ramanathan U, Bara J, Misra KK, Bang A, Basant S, et al. Census of India, 2011 Provisional Population Totals – Orissa – Data Sheet Government of India. Gov India. 2013.
28. Chandra PS, Carey MP, Carey KB, Jairam KR, Girish NS, Rudresh HP. Prevalence and correlates of tobacco use and nicotine dependence among psychiatric patients in India. Addict Behav. 2005;30(7):1290-9.
29. Myles N, Newall HD, Curtis J, Nielssen O, Shiers D, Large M. Tobacco use before, at, and after first-episode psychosis: a systematic meta-analysis. J Clin Psychiatry. 2012;73(4):468-75.
30. Cohen, S., & Williamson, G. Perceived Stress in a Probability Sample of the United States. In S. Spacapan, & S. Oskamp (Eds.), The Social Psychology of Health: Claremont Symposium on Applied Social Psychology Newbury Park, CA: Sage. 1988;pp. 31-67.
31. Dollar KM, Homish GG, Kozlowski LT, Leonard KE. Spousal and alcohol-related predictors of smoking cessation: a longitudinal study in a community sample of married couples. Am J Public Health. 2009;99(2):231-3.
32. Rani M, Bonu S, Jha P, Nguyen SN, Jamjoum L. Tobacco use in India: prevalence and predictors of smoking and chewing in a national cross sectional household survey. Tob Control. 2003;12(4):e4.
33. Grossman M, Bowie CR, Lepage M, Malla AK, Joober R, Iyer SN. Smoking status and its relationship to demographic and clinical characteristics in first episode psychosis. J Psychiatr Res. 2017;85:83-90.
34. Kotov R, Guey LT, Bromet EJ, Schwartz JE. Smoking in schizophrenia: diagnostic specificity,

symptom correlates, and illness severity. Schizophr Bull. 2010;36(1):173-81.
35. Corvin A, O'Mahony E, O'Regan M, Comerford C, O'Connell R, Craddock N, Gill M. Cigarette smoking and psychotic symptoms in bipolar affective disorder. Br J Psychiatr. 2001;179:35-8.

Cite this article as: Singh Y, Sisodia A, Gaur A, Agarwal V. Demographic correlates of nicotine dependence in psychiatric patients. Int J Res Med Sci 2021;9:458-65.