Prevalence of smoking among psychiatric patients in outpatient department of tertiary care centre: A descriptive cross-sectional study

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Abstract

Background:

Even though psychiatric illness is a risk factor of smoking tobacco; only few studies have been conducted to estimate the prevalence of smoking among that patient group in Nepal. Our study aims to determine the prevalence of smoking among psychiatric patients in the outpatient department of tertiary care centre.

Material and method:

A descriptive cross-sectional study was conducted in the psychiatric outpatient department of a tertiary care centre from 27th March to 27th May, 2022 following ethical approval from the Institutional Review Committee (Reference number: 577/078-079). A convenience sampling technique was used to include 398 patients, who were assessed for tobacco use behaviour using a semi-structured questionnaire and nicotine dependence using the Fagerstrom Test for Nicotine Dependence instrument. Data was collected using the "KoBo toolbox" Android mobile application and analysed using Microsoft Excel, Statistical Package for Social Sciences version 25.0, and R Studio. Point estimates and 95% confidence intervals were calculated.

Results:

The prevalence of current smokers was 104 (26.13%) (21.88-30.74 at 95%CI). The prevalence of past smokers was 48 (12.06%) (9.03-15.67 at 95% CI). Nicotine dependence was present in 75(72.12%) of the 104 current smokers and 40 (83.33%) among 48 past smokers.

Conclusion:

Our study found a lower prevalence of smoking among participants compared to other similar studies conducted at the national level.

Keywords:

Mental illness; nicotine dependence; smoking.

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INTRODUCTION

Globally, 7.69 million deaths and 200 million Disability Adjusted Life Years (DALYs) were attributed to smoking in 2019.(1) Stepwise approach to Noncommunicable Disease risk factor surveillance survey "STEPS survey" Nepal 2019 estimated that 17.1% of adults in Nepal were tobacco smokers.[(2)]

Mental disorders can negatively impact the adoption of healthy habits as they can deteriorate social and cognitive function. As a consequence, or response to the symptoms of mental illness, decreased motivation to promote health, adopting poor sleeping and eating habits, and substance abuse can develop.[(3)] Studies have shown that people with mental illness are significantly more likely to smoke than the general population and have higher nicotine dependence.[(4)]

The aim of the study is to find the prevalence of smoking among psychiatric patients in the psychiatric outpatient department of a tertiary care center.

MATERIAL AND METHODS

A descriptive cross-sectional study was conducted among patients visiting the psychiatric outpatient department (OPD) of Nepalgunj Medical College Teaching Hospital (NGMCTH), Kohalpur, Banke. The study was conducted from March 2022 to May 2022 after the ethical approval from the Institutional Review Committee (Reference number: 577/078-079). A person equal or more than 16 years of age and diagnosed by a consulting physician with any mental illness according to the ICD10 guideline were included in the study after obtaining consent. Patients older than 16 years requiring medical emergency or who do not have the mental capacity to provide consent were excluded from the study. A convenience sampling method was used. The sample size was calculated by using the following method:

$n= (Z^2 \times p \times q)/e^2$
$= 1.962 \times 0.38 \times 0.62 (0.05)^2$
$= 362$

Where,
n= minimum required sample size
z= 1.96 at 95% Confidence Interval (CI)
p= prevalence taken as 38% from the previous study[5]
q= 1-p
e= margin of error, 5%

The minimum sample size of 362 was taken. For sample size calculation, the prevalence of smoking in the previous study conducted at Tribhuvan University and Teaching Hospital (TUTH), Nepal was used.[6] The patient's specific demographic information and mental illness diagnosis were recorded from the patient's OPD ticket after verifying it with a consulting physician. Semi-structured questionnaire was developed to identify tobacco use behaviour and "Fagerstrom Test for nicotine dependence" instrument was used to estimated the degree of nicotine dependence.[7] Participants were defined as a current smoker if they had smoked 100 cigarettes in their lifetime and who currently smoke cigarettes. Participants were defined as a 'past smoker' if they had smoked at least 100 cigarettes in their lifetime but who had quit smoking at the time of interview. 'Never smoker' were those study participants who had never smoked or who had smoked less than 100 cigarettes in their lifetime. Data collection was done with the help of "KoBo Toolbox", an android mobile application where semi-structured questionnaires were uploaded. Data were imported and cleaned in Microsoft Excel and analysed in Statistical Package for Social Sciences (SPSS) version 25.0. The Confidence Interval was calculated along with frequency and percentage for binary data and mean with standard deviation for continuous data.

RESULTS

As study participants 398 patients were included. The prevalence of current smoker was 104 (26.13%) (21.88-30.74 at 95% CI). The prevalence of past smokers was 48 (12.06%) (9.03-15.67 at 95% CI). In our study, the mean age of current smokers was 38.9±13.59 years. Similarly, the mean age of smoking initiation among combined current and past smokers was 18.24±5.18 years. Manufactured cigarettes were smoked by 140 (92.11%) of all current and past smokers, while 20 (13.16%) smoked other forms of tobacco like pipes, hukka, and hand-rolled tobacco.

We calculated the score of nicotine dependence among current smoker by using the Fagerstrom Nicotine dependence tool. The prevalence of 'low' or 'low to moderate' nicotine dependence was 50 (48.08%) among 104 current smokers, while it was 26 (55.20%) among 48 past smokers. Similarly, 25 (24.04%) of current smokers and 14 (29.17%) of past smokers have "moderate" or "high" nicotine dependence (Table 3).

Of 398 study participants, 172 (43.22%) recalled being inquired by a healthcare professional about their smoking status during hospital visits to any department.

Out of 398 study participants, 378 (94.97%) acknowledged that smoking causes bodily illness when asked about their awareness of the harmful health effects associated with smoking. 302 (79.89%) of 378 said that smoking causes lung cancer, while 241 (63.76%) said it causes unspecified respiratory disease. Another 57 (15.08%) of them said smoking causes heart disease.

Among all current and past smokers who attempted to quit smoking, 17 (14.4 %) revealed that counseling with a healthcare professional helped them quit smoking, while 97 (82.90%) said they tried to quit without assistance. Only 2 (1.7%) revealed they used nicotine replacement therapy. Among current smokers, 69 (66.30%) tried at least once to quit.

Similarly,73 (70.19%) of smokers admitted to have an intention to quit smoking. Among current smoker, 19 (18.27%) and 7 (6.73%) had an intention to quit smoking within the next month and the next 12 months, respectively. Remaining 31 (29.8%) revealed of having no intention to quit smoking.

Table 1. Socio-demographic characteristics of the participants

Variables	Categories	Current Smoker n(%) (n=104)	Past Smoker n(%) (n=48)	Non-smoker n(%) (n=246)	Total n(%) (n=398)	p-value
Age in years	16-25	19(18.26)	2(4.16)	54(21.95)	75(18.84)	0.00
	26-40	42(40.38)	10(20.83)	134(54.47)	186(46.73)	
	41-60	35(33.65)	27(56.25)	43(17.48)	105(26.38)	
	>60	8(7.69)	9(18.75)	15(6.10)	32(8.04)	
Gender	Male	79(75.96)	19(39.58)	72(29.27)	170(42.7)	0.00
	Female	25(24.04)	29(60.41)	174(70.73)	228(57.29)	
Ethnicity	Brahmin	16(15.38)	5(10.410	55(22.36)	76(19.10)	
	Chettri	44(42.30)	20(41.67)	95(38.62)	159(39.94)	
	Dalit	12(11.54)	6(12.50)	23(9.35)	41(10.30)	
	Janajati (except "tharu")	16(15.38)	8(16.67)	26(10.57)	50(12.56)	
	Madhesi/Muslim	7(6.73)	2(4.17)	13(5.28)	22(5.53)	
	Tharu	9(8.65)	7(14.58)	34(13.82)	50(12.56)	
Educational status	No formal Schooling	28(26.92)	29(60.42)	51(20.73)	108(27.14)	
	Secondary Level and below	55(52.88)	17(35.42)	133(54.07)	205(51.51)	
	Above Secondary Level	21(20.19)	2(4.17)	62(25.20)	85(21.36)	
Occupational Status	Agriculture and/ or animal husbandry	27(25.96)	17(35.42)	36(14.63)	80(20.10)	
	Homemaker	12(11.54)	10(20.83)	84(34.15)	106(26.63)	
	Labor	25(24.04)	11(22.92)	21(8.54)	57(14.32)	
	Service/Business	20(19.23)	6(12.50)	56(22.76)	82(20.60)	
	Unemployed	20(19.23)	4(8.33)	49(19.92)	73(18.34)	
Marital Status	Unmarried	18(17.31)	0(0)	41(16.67)	59(11.82)	
	Married	79(75.96)	47(97.92)	180(73.17)	306(76.88)	
	Divorced/ Separated/ Widow	7(6.73)	1(2.08)	25(10.16)	33(8.29)	
Income category	<20000	15(14.42)	4(8.33)	31(12.60)	50(12.56)	
	20000-50000	54(51.92)	28(58.33)	137(55.69)	219(55.03)	
	>50000	35(33.65)	16(33.33)	78(31.70)	129(32.41)	
Mental Illness	Depressive Disorder	48(46.15)	23(47.92)	143(58.13)	214(53.77)	
	Anxiety Disorder	9(8.65)	17(35.42)	35(14.23)	61(15.33)	
	Bipolar Spectrum Disorder	19(18.27)	6(12.50)	35(14.23)	60(15.07)	
	Schizophrenic Disorder	17(16.35)	2(4.17)	19(7.72)	38(9.55)	
	Others	11(10.58)	0(0)	14(5.69)	25(6.28)	

Table 2. Nicotine dependence using Fagerstrom Nicotine Dependence tool

Degree of Nicotine Dependence	Current smoker n(%) (n=104)	Past smoker n(%) (n=48)
Non-dependent(0)	29(27.88%)	22(45.83%)
Low or low to moderate dependence(1-4)	50(48.08%)	12(25%)
Moderate to high dependence(>4)	25(24.04%)	14(29.17%)

Table 3: Characteristics of smoking among participants

Types of product smoked	Frequency
Manufactured cigarette only	132 (86.84%)
Other than manufactured cigarette(including bidi, sulfa, hukka)	12 (7.89%)
Both	8 (5.27%)
Knowledge about illness caused by smoking among study participants	**378(94.97%)**
Only Lung Cancer	107
Only Unspecified repiratory disease	63
Only Heart disease	5
Lung cancer and Unspecified respiratory disease	170
Lung Cancer and Heart Disease	44
Unspecified respiratory disease and Heart disease	27
Lung cancer, Unspecified respiratory and Heart disease	19
At least one quit attempt among current smoker	**68 (65.38%)**
Service used for quitting smoking at least once among current smoker and past smoker	
Quit without assistance	97 (82.90%)
Counseling with health care professional	17 (14.4%)
Nicotine replacement therapy/Medication	2 (1.7%)
Intension to quit smoking among current smoker	
Within next month	19 (18.27%)
Within next 12 months	7 (6.73%)
No specific time frame	47 (45.19%)
No intention to quit smoking	31 (29.81%)

DISCUSSION

Our study identified the prevalence of smoking among psychiatric patients to be higher than that of the general population of Nepal. In the general population, the prevalence of smoking is 17.1%.[2] This finding is consistent with many national and international studies, which found a higher prevalence of smoking in patients with mental illness compared to the general population.[5,6,8–10] Combination of various psychological, social, and biological factors has been identified as the cause of the higher prevalence of smoking in psychiatric patients.[11,12] Gender differences in smoking prevalence present in the general population were consistent even in psychiatric patients. In the general population, 28% of males and 7.5% of female smoke tobacco.[13] In our study 46.47% of male participants while 10.96% of female participants were current smokers.(Table 1.) Studies have identified that hormonal, cultural, and behavioural factors are linked with the differences in smoking among males and females.[14] A study done on the depressive

patients in Tribhuwan University Teaching Hospital (TUTH), Nepal,[6] and another study done in the psychiatric outpatient department of BP Koirala Institute of Health Science[5] found that 37.2% and 38% of patients are current smokers, respectively which is higher than that of our study's finding. However, the study participants in those studies comprised a higher number of male patients which may have increased the overall prevalence of smoking in those studies.

The mean age of smoking initiation in our study participantsl was 18±5.3 years. A systematic review highlighted key factors like salient theme of feeling in control over smoking habit, and tendency to minimize the perceived severity of the risks associated with smoking, to have played role in smoking initiation among this age group.[15]

The rate of awareness about hazards and diseases caused by smoking was higher or comparable among our study participants when compared with another study done among general population.[16,17] Poor awareness have been documented to be associated with lower quit attempts.[18]

The rate of a quit attempt in our study was 66.3% (69) which was higher compared to a similar study done in Singapore, where 52% attempted to quit smoking.[8] Similarly, we also found that 26% [19] of current smokers in our study have the intention to quit smoking within one month, which is higher when compared with the study done in Singapore, where 10.6% of the respondents were ready to quit within one month.

However, despite higher quit attempts only 16% revealed to have received counseling or prescription for NRT to assist quitting smoking. It has been well documented that counseling from health care professional helps smoker to quit smoking more successfully. However research has indicated the presence of obstacles hindering the promotion of smoking cessation among mental health workers and health professionals. These barriers include a lack of confidence and practical knowledge necessary to engage in cessation interventions, the perception that patients are unwilling to quit, and the belief that cigarettes serve as a one of the few enjoyable aspects in their lives.[19] The prevalence of chronic diseases directly associated to smoking is higher in patient with psychiatric illness. Thus health services targeting this patient group to aid smoking cessation is essential.

In our study, the degree of nicotine dependence is lower than the studies conducted in other countries like Singapore.[8] Similarly, our study participants have a relatively higher rate of intention to quit and quit attempt. Recent studies have concluded that readiness to quit, quit attempt, and duration of abstinence is less in patients with a higher degree of nicotine dependence and vice versa.[15,16]

There were few limitations to our study. Most of our data's validity depends upon the accuracy of the recall of the study participants. Our study was conducted in a hospital setting; thus, the true prevalence of smoking among psychiatric patients might differ in the community setting. Similarly, study participants, usually female, showed reluctance to admit to smoking, which might underestimate the prevalence of smoking among females.

CONCLUSION

It is essential to integrate the preventive health services for the patient suffering from the mental illness. Our study found that smoking prevalence is relatively higher among psychiatric patients, and those patients might benefit from the active smoking cessation advice. Smoking prevalence is increasing among women; however, there was a discrepancy regarding the inquiry about smoking status between males and females. Hence comprehensive smoking history of all patients visiting the psychiatric OPD, and routine preventive and cessation counselling should be ensured.

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References

1. Reitsma MB, Kendrick PJ, Ababneh E, Abbafati C, Abbasi-Kangevari M, Abdoli A, et al. Spatial, temporal, and demographic patterns in prevalence of smoking tobacco use and attributable disease burden in 204 countries and territories, 1990–2019: a systematic analysis from the Global Burden of Disease Study 2019. The Lancet. 2021 Jun 19;397(10292):2337–60.
2. Dhimal M, Karki KB, Sharma SK, Aryal KK, Shrestha N, Poudyal A, et al. Prevalence of Selected Chronic Non-Communicable Diseases in Nepal. Journal of Nepal Health Research Council. 2019 Nov 14;17(3):394–401.
3. The Relationship between Mental Health, Mental Illness and Chronic Physical Conditions [Internet]. [cited 2022 Jan 30]. Available from: https://ontario.cmha.ca/documents/the-relationship-between-mental-health-mental-illness-and-chronic-physical-conditions/
4. Wang P, Abdin E, Asharani PV, Seet V, Devi F, Roystonn K, et al. Nicotine Dependence in Patients with Major Depressive Disorder and Psychotic Disorders and Its Relationship with Quality of Life. Int J Environ Res Public Health. 2021 Dec 10;18(24):13035.
5. Limbu S, Shakya DR, Sapkota N, Joshi RG. Tobacco Use and Dependence among Psychiatry Out-Patients of a Health Institute in Eastern Nepal. Journal of BP Koirala Institute of Health Sciences. 2019 Jul 24;2(1):68–76.
6. Dhungel B, Chapagai M, Pant S, Tulachan P, Dhungana S. Prevalence Of Nicotine Use and Dependence in Depression. Journal of Psychiatrists' Association of Nepal. 2020 Sep 18;9(1):29–33.
7. Instrument: Fagerstrom Test for Nicotine Dependence (FTND) | NIDA CTN Common Data Elements [Internet]. [cited 2023 May 4]. Available from: https://cde.nida.nih.gov/instrument/d7c0b0f5-b865-e4de-e040-bb89ad43202b
8. Asharani PV, Ling Seet VA, Abdin E, Siva Kumar FD, Wang P, Roystonn K, et al. Smoking and Mental Illness: Prevalence, Patterns and Correlates of Smoking and Smoking Cessation among Psychiatric Patients. Int J Environ Res Public Health. 2020 Aug;17(15):5571.
9. Cruvinel E, Liebman E, Leite I, Hu J, Richter KP. Prevalence of smoking, quit attempts and access to cessation treatment among adults with mental illness in Brazil: a cross-sectional analysis of a National Health Survey. BMJ Open. 2020 May 26;10(5):e033959.
10. Greenhalgh EM, Brennan E, Segan C, Scollo M. Monitoring changes in smoking and quitting behaviours among Australians with and without mental illness over 15 years. Aust N Z J Public Health. 2022 Apr;46(2):223–9.
11. Besson M, Forget B. Cognitive Dysfunction, Affective States, and Vulnerability to Nicotine Addiction: A Multifactorial Perspective. Front Psychiatry. 2016 Sep 21;7:160.
12. Lombardo LE, Bearden CE, Barrett J, Brumbaugh MS, Pittman B, Frangou S, et al. Trait impulsivity as an endophenotype for bipolar I disorder. Bipolar Disord. 2012 Aug;14(5):565–70.
13. Dhimal, Meghnath, Bista, Bihungam, Bhattarai, Saroj, Dixit, Lonim Prasai, Hyder, Md Khursid Alam, Agrawal, Naveen, et al. Report of Noncommunicable Disease Risk Factors: STEPS Survey Nepal 2019. Nepal Health Research Council, Kathmandu Nepal [Internet]. 2020; Available from: https://www.who.int/docs/default-source/nepal-documents/ncds/ncd-steps-survey-2019-compressed.pdf?sfvrsn=807bc4c6_2
14. Sieminska A, Jassem E. The many faces of tobacco use among women. Med Sci Monit. 2014 Jan 30;20:153–62.
15. Mantler T. A systematic review of smoking Youths' perceptions of addiction and health risks associated with smoking: Utilizing the framework of the health belief model. Addiction Research & Theory. 2013 Aug 1;21(4):306–17.
16. Roychowdhury S, Roychowdhury G, Sen U. Assessment of awareness level on tobacco and smoking habits as risk factors for cancer among lung and laryngeal cancer patients in Kolkata--a case control study. Asian Pac J Cancer Prev. 2005;6(3):332–6.
17. Chen Q, Dai JN, Chen XD, Qin T, Lai WY, Wang Y. Awareness of hazards due to tobacco among people aged 15 years and older in Chongqing, China, in 2020: A cross-sectional analysis. Tob Induc Dis. 2022 Dec 12;20:112.
18. Garg A, Singh MM, Gupta VK, Garg S, Daga MK, Saha R. Prevalence and correlates of tobacco smoking, awareness of hazards, and quitting behavior among persons aged 30 years or above in a resettlement colony of Delhi, India. Lung India. 2012 Oct;29(4):336–40.
19. Bowden JA, Miller CL, Hiller JE. Smoking and mental illness: a population study in South Australia. Aust N Z J Psychiatry. 2011 Apr;45(4):325–31.