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A CROSS SECTIONAL STUDY OF PREVALENCE OF TOBACCO USE AND ITS CORRELATES IN PSYCHIATRIC IN-PATIENTS

Psychiatry

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ABSTRACT

Tobacco use among psychiatric in-patients in developing countries has not been well-investigated. To address this issue, we screened consecutive admissions to a psychiatric ward of a major hospital in northern India, and assessed the prevalence and correlates of tobacco use. This cross-sectional study was conducted on Psychiatry in-patients, during a fixed period, with the aim to see the pattern of tobacco intake, in any form, in patients with psychiatric illness. Patients of ages <18 years or those not consenting were excluded from the study. Patients (n = 448) provided information about their use of tobacco products, and participated in an interview that included ICD-10 for tobacco Dependence as well as measures of other substance use 256(57%) patients reported current tobacco use, 146(57%) of the patients who reported current use were dependent on tobacco and 110(43%) used tobacco in harmful pattern. Conclusion drawn was, all the psychiatric disorders except OCD tobacco use is a highly prevalent and should be taken care of.

KEYWORDS

Tobacco use; psychiatric in- patients; prevalence.

Introduction

Tobacco is a plant product obtained from an important member of *Solanaceae* family of the plant kingdom. *Nicotiana tobaccum* is the main source of tobacco though most of tobacco in Northern India and Afghanistan comes from *Nicotiana rustica*[1]

Cigarette smoking is most common both in terms of prevalence and health consequences. In Indian context beedi smoking is more common because of economic reasons.[2] About 4000 chemicals have been detected in tobacco smoke while around 3000 in smokeless tobacco. Nicotine is the main chemically active constituent present in tobacco.[3]

In India, tobacco consumption is responsible for half of all the cancers in men and a quarter of all cancers in women.[4] in addition to being a risk factor for cardiovascular diseases and chronic obstructive pulmonary diseases.[5,6] India also has one of the highest rates of oral cancer in the world, partly attributed to high prevalence of tobacco chewing.[7]

The existing studies on prevalence of tobacco use are based on non-representative sample surveys or have been conducted in localised—mostly urban—geographical areas. WHO estimated a prevalence of tobacco consumption of all forms at 65% and 33%, respectively, among men and women, based on small scale studies conducted in the past.[7]

Prevalence and Correlates of Tobacco Use

Smoking is substantially high with life-time history of psychiatric illness, much higher than in general population. 45% of all cigarettes consumed in the USA are smoked by psychiatric patients (Lasser et al 2000).[8] Schizophrenics are markedly prone to smoking; of all psychiatric patients smoking is maximum in schizophrenia. High prevalence of nicotine addiction in schizophrenia is implicated for the underlying neurobiology of schizophrenia (Kelly and McCreadie 2000).[9]

The prevalence of smoking among persons with a mental illness living in developing countries has not been well-studied. In India, tobacco is consumed both through smoked and smokeless forms (Gupta & Hamner, 1992).[10]

The National Family Health Survey provided data from 301,984 adults in 26 Indian states during 1999 (Subramanian, Nandy, Kelly, Gordon, & Smith, 2004). In this impressive sample, the overall prevalence was 18.4% for tobacco smoking and 21% for tobacco chewing. Compared to men, Indian women were much less likely to smoke tobacco (3.4% vs. 33.3%), chew tobacco (13% vs. 29%), and use tobacco in both forms (15.5% vs. 50.2%).[11]

In the only published study that provides data on tobacco use among psychiatric patients in India, Srinivasan and Thara (2002) studied 510 male psychiatric patients. They reported that the prevalence of smoking was 38% among patients with schizophrenia, 24% among patients with mood disorders, and 23% among those with a non-psychotic disorder. Although valuable, this study sampled only men, assessed only smoking but no other forms of tobacco use, and did not assess the degree of dependence.[12]

The current study was designed to estimate the prevalence of tobacco use in both smoking and smokeless forms among male and female psychiatric patients in India.

Methods

Sample and Setting

The sample of 448 consecutive inpatients was recruited at a 40 bed general hospital psychiatric unit in New Delhi. Consecutive inpatient admissions over a twelve month period were screened and invited to participate if they were more than 18 years of age, and able to provide informed consent.

Procedures

Data collection—Data were obtained from a review of semi structured proforma. To assess tobacco use, interviewers assessed type and frequency of tobacco used and administered the ICD-10 criteria for tobacco Dependence and harmful use. We also assessed alcohol and other drug use problems, respectively, with ICD 10 criteria.

Data Analysis

Prevalence estimates were computed for the sample as a whole and by gender. Sample was divided into two groups; tobacco users and non-tobacco users and compared. To determine the correlates of tobacco use pattern, the sample was divided into dependence and Harmful use. $\chi 2$ tests evaluated the associations among tobacco use, nicotine dependence, and the sociodemographic and clinical variables Statistical analysis was performed using SPSS version 16.

Results

Sample Characteristics

During the study interval, approximately 448 patients admitted to psychiatry unit were interviewed. Thus sample consisted of N=448 [n=272 (61%) male and n= 176 (39%) female] patients (Mean age = 33.63yrs.). Religious affiliation was 272(61%) Hindu, 168(37%) Muslim and 8 (2%) other. Most patients had some formal education with 184(41%) having completed primary level education, 40(9%) high school%, 128(29%) between 12 th and graduate, and 96(21%) graduate and above. 116(26%) were unmarried, 308(69%) were married and 24(5%) were in widow or separated or divorce category. Patients came from rural 120(27%) and urban 328 (73%).The most common primary diagnosis was a psychosis 200(45%); next most frequent was the mood disorder with bipolar disorders 72(16%); and

depressive disorder 72(16%); 8(2%)patient of obsessive compulsive disorder and 96(21%) patients with other disorder including anxiety somatoform dissociative disorder were also studied.

The total duration of illness was less than 6 months in 104(23%) cases, 6 to 12 months in 80(18%) cases, 1 to 5 years in 120 (27%) cases, and more than 5 years in 144(32%) cases.

Prevalence and Correlates of Tobacco Use

Table 1, displays prevalence estimates. As depicted there, out of 448 patients, 256(57%) patients (232males and 24 females) reported tobacco use in at least one form. Amongst them both men and women were more likely to chew tobacco rather than smoking tobacco. No statistical significance difference was found between male and female type of tobacco use; although, men (85%) were more likely to use tobacco the women (14%).

Table 2, Exploratory analyses investigating the relationship between tobacco use and socio-demographic characteristics revealed following profiles: Male, unmarried/separated or divorced, urban, Hindu less well- educated (< 12th class) and total duration of illness > 6 months were more likely to have tobacco use.

Prevalence and Correlates of tobacco use pattern (Dependence and harmful use)

Table 3, displays; in all the disorder groups except OCD more than 50% of patients were using tobacco. **Table 4,** displays; 146 out of the 256 tobacco users (57%) reported dependence on tobacco while 110(43%) reported harmful use and statistically significance difference was found (p value <0.05). In patients with psychotic disorders and depression dependence on tobacco was more than 50% while in other disorders harmful use was more common.

Discussion and conclusion

This cross-sectional study of consecutive admissions in a general hospital psychiatric unit in India provides important data regarding the tobacco use, arguably the leading behavioural cause of premature morbidity and mortality in the world (Murray & Lopez, 1997).

Several findings warrant discussion.

The rates of tobacco use across the entire sample indicate that at 57% of psychiatric in-patients use tobacco products. Given the association between tobacco use and lung cancer, cardiovascular disease, tuberculosis, and other chronic lung diseases, tobacco use has been projected to account for 13% of all deaths in India by 2020 (WHO, 1997). Thus, the health, human, and financial consequences of tobacco use for such a populous country are staggering, and tobacco control measures in this population warrant immediate attention.

Second, among male patients, rates of smoking was 19%. This rate is lower than that (31.6%) obtained by Srinivasan and Thara (2002) who used a convenience sample of 510 male outpatients, and also lower than that (33%) reported by Subramanian et al. (2004) for the general population of Indian men.[11,12] 74out of 256(29%) psychiatric patients were using chewing tobacco.

Third, study estimated tobacco use rates among female psychiatric patients in India. We found that 14% of female patients consumed tobacco in any form. We found that female patients used tobacco similar to women from the general population; 16.3%, reported by Subramanian et al., 2004.[11]

Fourth, within our psychiatric sample, there were marked gender differences in tobacco use patterns. As expected, men used tobacco products at a higher rate, and were dependent on nicotine to a greater degree, compared to women.

These gender differences are larger than what have been found in studies of psychiatric patients from the west (Vanable et al., 2003).[13] These cross-cultural differences may reflect an indirect 'benefit' of the social, cultural, and economic constraints faced by Indian women relative to women in more western countries.

Fifth, comparison of tobacco use rates among psychiatric patients in India to those reported for psychiatric patients in the west suggests that the tobacco smoking problem in India has not yet reached the same level. In our study 20% patients were smokers while in some of the studies in the west, one-half to two-thirds of all psychiatric patients smoke.(Vanable et al., 2003).[13]

Sixth, we found that 57% of the patients who reported current use were dependent on tobacco and 20 out of 43% used tobacco in harmful pattern. To our knowledge, there is paucity of such studies on psychiatric patients in India, and reveals that the use of tobacco products among psychiatric patients is frequently associated with dependence. Given the lack of data on nicotine dependence in India, we cannot compare our results with general population.

Seventh, analyses investigating the relationship between tobacco use and psychiatric characteristics indicated that in all the disorder groups except OCD more than 50% of patients were using tobacco. And in psychotic disorders and depression dependence was more than other disorders i.e. 73% and 60% respectively. Studies in the U. S. general population have documented a strong link between smoking and major depression (Breslau, 1995; Glassman & Covey, 1996). Studies using psychiatric samples tend to find the highest prevalence of smoking among patients with schizophrenia (e.g., Vanable et al., 2003).[12,14] Within patient samples, smoking has been suggested to be related to the presence of psychotic symptoms in both bipolar disorder (Corvin et al., 2001)[15] and schizophrenia (Beratis, Katrivanou, & Gourzis, 2001).[16] Some have even suggested that increased smoking in the mentally ill may have a biological etiology, citing findings that genetic linkage related to nicotinic receptor were common in both schizophrenia and bipolar disorders (e.g., Leonard et al., 2001).[17] Continued research is necessary to understand further the diagnostic correlates of smoking among psychiatric patients.

Strengths of our study include the screening of consecutive admissions, thereby minimizing any self-selection bias; the use of measures with established reliability and validity for assessment of tobacco use and other substance use; the assessment of tobacco use in multiple forms; and the assessment of nicotine dependence as well as use.

One limitation of our study was the absence of a control group (i.e., general population comparison condition) within our study; this required that we use a reference sample, provided by Subramanian et al. (2004), to permit comparisons with the general Indian population.[11]

Future research might continue our assessment of tobacco use in both smoking and smokeless

forms, and further our efforts to assess dependence among users of smokeless tobacco and

beedis. Exploration of tobacco use and dependence among different diagnostic groups is

warranted to understand both the possible mechanisms of dependence, especially as these may relate to the neurobiology of the mental disorder. Research on smoking cessation and prevention strategies is also warranted.

Conflict of interest: None

Table 1: Tobacco use; forms and prevalence

Type of Tobacco Use	(N =448)	Men (n=272)	Women (n=176)	P value
Any form of tobacco	256(57%)	232(85%)	24(14%)	0.25
Smoking tobacco only	52(20%)	44(19%)	8(33%)	
Chewing tobacco only	74(29%)	63(27%)	11(46%)	

Table 2: Comparison between tobacco use with sociodemographic profile and duration of illness

	All (n =448)		(n=256)		(n=192)		p value
	% of Psychiatric patients		% of Psychiatric patients taking tobacco		% of Psychiatric patients not taking tobacco		
Sex							
Male	272	61%	232	91%	40	21%	< 0.001
Female	176	39%	24	9%	152	79%	
Marital status							

Married	308	69%	160	63%	148	77%	< 0.001
unmarried	116	26%	88	34%	28	15%	
Others	24	5%	8	3%	16	8%	
Background							
Urban	328	73%	232	91%	96	50%	< 0.001
Rural	120	27%	24	9%	96	50%	
Religion							
Hindu	272	61%	168	66%	104	54%	< 0.05
Muslim	168	37%	88	34%	80	42%	
Others	8	2%	0	0%	8	4%	
Education							
Primary school	184	41%	144	56%	40	21%	< 0.001
6th to 12th class	40	9%	32	13%	8	4%	
12th to undergraduate	128	29%	64	25%	64	33%	
Graduate & Above	96	21%	16	6%	80	42%	
Total duration of illness							
< 6 months	104	23%	32	13%	72	37%	< 0.001
6 to 12 months	80	18%	56	22%	24	13%	
1 to 5 years	120	27%	80	31%	40	21%	
> 5 years	144	32%	88	34%	56	29%	

Table:3 Comparison between tobacco use and psychiatric illnesses

Psychiatric illness	Tobacco intake Present		Tobacco intake Absent		Total psychiatric patients		P value
Psychosis	112	56%	88	44%	200	45%	<0.05
Bipolar Disorder	48	67%	24	33%	72	16%	
Depression	40	56%	32	44%	72	16%	
OCD	0	0%	8	100%	8	2%	
Others	56	58%	40	42%	96	21%	
Total	256	57%	192	43%	448	100%	

Table:4 Comparison between pattern of tobacco use and psychiatric illnesses

Psychiatric illness	Dependence		Harmful use		total psychiatric patients	P value
Psychosis	82	73%	30	27%	112	<0.001
Bipolar Disorder	16	33%	32	67%	48	
Depression	24	60%	16	40%	40	
OCD	0		0		0	
Others	24	43%	32	57%	56	
Total	146	57%	110	43%	256	

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