

## Comparison of Patterns and Perception of Tobacco Use in Psychotic and Non- Psychotic Mentally Ill Patients

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### Abstract

**Background:** Tobacco abuse is leading cause of morbidity and mortality in India and worldwide, accounting for millions of death every year. The trend has been increasing globally. Smoking has been a major form of tobacco abuse, though recent trend of alternative ways is seen globally. India has both smoking and chewing of tobacco as popular methods. The abuse of tobacco by psychiatric patients has been noticed worldwide, with studies linking nicotine and symptom changes. Majority of the studies have been on smoking and psychiatric illness.

**Aim:** To study the pattern of tobacco use in psychiatric patients.

**Methodology:** Tobacco use was studied in 500 outpatient psychiatric patients keeping in mind significant non-smoking use in India. Fagerstrom scale was used for assessing dependence in smoking use of tobacco and modified scale for smokeless use of tobacco. Subjects were divided on the basis of diagnosis into Psychotic and Non-psychotic groups.

**Results:** 55.2% of cases had history of use of tobacco, with majority using smokeless form in both psychotic and non-psychotic groups. Among the results in smokeless category a significantly higher dependence in psychotic group was found.

**Conclusion:** A pattern of use in relation to symptoms was noted in Psychotic group of subjects. The information could be applied in understanding and clinical management of psychosis as well as tobacco abuse in patients.

**Keywords:** Tobacco, Smoking, Smokeless, Mental illness.

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### I. Introduction

Tobacco use is world's leading cause of death, accounting for 5 million deaths per year. Over the years tobacco use has seen a global increase.<sup>[1]</sup> There are 1.1 billion smokers worldwide and 182 million (16.6%) of them live in India.<sup>[2]</sup> Center for Disease Control and Prevention (CDC), USA 2004 showed that prevalence of smokeless tobacco among adults aged 18 years and above was 3% (6% men and less than 1% were women).<sup>[3]</sup>

There has been a marked decline in cigarette use, though been accompanied by a relatively recent increase in adolescent and young adult (18–25-years) use of new and emerging alternative tobacco products.<sup>[4]</sup>

In India according to new statistics there are about 120 million smokers, with one third of adults (32%) using some form of tobacco.<sup>[5,6]</sup> More than half of adult men (57%) and 11% of adult women (age 15-49) consume some form of tobacco.<sup>[7]</sup> In India Beedi smoking (40%) is as prevalent as smokeless tobacco (40%) whilst cigarette smoking was the least (20%).<sup>[8]</sup> In India smokeless tobacco is socially more acceptable than smoking, and is available in forms like gutkha, mashiri and snuff. The legal ban on smoking in public places has made smokeless tobacco more acceptable; also new smokeless tobacco products are being advertised as alternatives to cigarettes in places where smoking is not allowed as a result smokers use these products as substitutes instead of trying to quit.

Studies on smoking mainly from the developed countries noted higher rates of smoking by psychiatric patients especially those with schizophrenia, when compared to the general population.<sup>[9,10]</sup> Studies have found high smoking rates among selected populations of persons with mental illness, such as psychiatric outpatients<sup>[11]</sup> and patients in a state mental hospital in USA.<sup>[12]</sup> Others have found elevated smoking rates among patients with specific diagnoses, such as bipolar illness, depression, schizophrenia, and panic disorder.<sup>[13-18]</sup> Persons with mental illness may encounter greater difficulty with tobacco cessation.<sup>[11,19,20]</sup> Previous studies<sup>[11,13,21,22]</sup> have found that persons with mental illness are about twice as likely to smoke as other persons.

Studies have also found increased tobacco consumption particularly smokeless along with alcohol consumption.<sup>[23]</sup>In mentally ill patients the focus being on psychopathology comorbid substance use tends to be ignored, leading to higher health, social and economic burden.

Studies on smoking by psychiatric patients are few from developing countries where social and cultural and familial factors influence smoking behavior.<sup>[24]</sup>Smokers exhibit higher rates of depression than do nonsmokers.<sup>[25-27]</sup> Depressed smokers as compared to non-depressed smokers experience greater difficulty in quitting.<sup>[28,29]</sup>

Most of the studies focus on smoking and its association. Smokeless form is always underestimated. There are very few studies on smoking and its association 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 mentally ill patients. This will lead to the appropriate corrective measures being taken to fight the problem. The current study is designed to throw light in this direction.

## **II. Materials and methods**

The study was conducted in an outpatient psychiatry department of a tertiary care public hospital in the city of Mumbai. Cross sectional study involving 500 patients. All consecutive consenting patients diagnosed to be suffering from mental illness attending the outpatient department for follow up were enrolled in study. Acutely ill and those having mental retardation were excluded from the study. The group using tobacco was divided into those having either a psychotic or a non-psychotic disorder.

A Semi Structured Performa was formulated for collection of socio demographic data and information regarding tobacco use pattern and perception, effect on mental illness and abstinence details.

Two scales were used for assessment of Nicotine dependence. One for smoking and other for smokeless tobacco use. Fagerstrom Scale for Nicotine Dependence for Smoking is a 6 item Scale assessing dependence. Four items having score of 0 to 1 and two items have a score ranging from 0 to 3. The total score ranges from 0-10 (Very Low Dependence to Very High Dependence). Fagerstrom Scale for Nicotine Dependence For Smokeless Tobacco this scale was described in a study on smokeless tobacco.<sup>[26]</sup> This scale was modified from Fagerstrom scale for nicotine Dependence for Smoking. It includes 7 item containing questions asking about number quantity, time of consumption and concomitant smoking. Two items have a score of 0 to 2. Five items have a score of 0 or 1. Final scores range from 0-9 (Very Low Dependence to Very High Dependence).

Data collected was analyzed using Chi-square test and Fisher Exact test. Mann-Whitney Test and Wilcoxon's test were also used for non-parametric data wherever applicable. Probability (p) value of  $\leq 0.05$  was considered statistically significant.

## **III. Results**

### **Demographic Data:**

277 were male and 223 were female. Age of subjects varied from 12 to 79 years, with an average age of 40.81 years. Average monthly income was 5547.58 rupees per month. Majority (77.2%) were married, 17.8% were unmarried, 3.4% divorced.

### **Tobacco use pattern and Mental illness:**

276 (55.2%) patients had used tobacco in their lifetime, out of which 61 (22.10%) were currently abstinent. Out of those who had used tobacco, males were 66.30% and females 33.70%. Further from those who had used tobacco, there were nearly equal number of patients with 143 (51.82%) and without psychotic disorders 133 (48.18%). Subjects were categorized into two groups. Psychotic illness (n=276) including schizophrenia and other psychotic disorders. Non Psychotic illness (n=224) including mood disorder, anxiety disorder, phobia other substance dependence. In the psychotic group 51.8% had ever used tobacco in their lifetime, while 59.4% of non-psychotic group had ever used tobacco in their lifetime.

Form of tobacco use in Table 1. Dependence statistics for smokeless tobacco in Table 2 and smoking tobacco in Table 3.

In our study 'curiosity' was found to be the most common cause to start tobacco use. Though when we compare, the Psychotic patients show significantly higher usage of tobacco to manage symptoms. 85.5 % of patients who had ever consumed tobacco had started it before mental illness.

### **Tobacco use during mental illness:**

A significant increase in tobacco consumption after starting of mental illness in psychotic group as compared to non-psychotic group was reported ( $p=0.002$ ). Similarly significantly higher number of psychotic patients reported a decrease in tobacco use when the symptoms decreased ( $p=0.0005$ ). As the psychotic patient relapsed with psychotic symptoms the tobacco use also increased with it, which was significantly higher than

the non-psychotic group( $p=0.00023$ ). Interestingly the tobacco use in non-psychotic group was significantly stayed same throughout the course of mental illness, as compared to psychotic group( $p=0.00209$ ).

#### **Patient's perception about their tobacco consumption:**

The perception of tobacco affecting their mental illness was seen in 44.2% of psychotic patients while comparatively 31.4% of non-psychotic patients felt so, this finding was statistically significant ( $p=0.05$ ). It was observed in our study that 46.9% of Psychotic and 34.3% of Non-psychotics agreed that treatment of mental illness decreases their desire to consume nicotine. The relief from symptoms of mental illness after consuming tobacco was perceived in 30.1% of psychotic patients while in only 17.6 % of non psychotics. This difference is noteworthy though not statistically significant.

#### **Tobacco consumption and other substance use:**

26.6% of psychotic and 37.3 % of non psychotic patients were consuming substance other than nicotine and the most common other substance was alcohol.

#### **Currently abstinent patients:**

31.5% of patient's ever taking nicotine had tried abstinence. Doctor's advice was leading cause of abstinence for both groups. Both Psychotic and Non-Psychotic groups the most common duration of abstinence was more than one year for both during time of interview, though 43.3% of psychotic and 71% of non-psychotic abstained for a year or more. Though difference was statistically not significant, it appears patients with psychotic disorder found it difficult to abstain.

#### **Relapse of tobacco use:**

The most common reasons found for restart of tobacco after abstinence were craving and for symptom relief. 31.9 % of psychotic and 25.5% of non psychotic patients reported that they restart with nicotine consumption on feeling uncomfortable on stopping it. Out of patients who have tried abstinence 55.7% have restarted again with tobacco consumption.

#### **Abstinence with other substance:**

80% of psychotic and 56.5% of non psychotic patients who were consuming other substance with nicotine tried abstaining from the other substance. In study it was found that subjects with concurrent use of other substances, they first preferred to abstain from other substance, rather than nicotine, and while abstaining from both substances, they would prefer to restart with nicotine.

### **IV. Discussion**

Our findings indicate a high prevalence of tobacco use in psychiatric patients especially in males. These findings are similar to those reported by Mackay et al<sup>[6]</sup> and IIPS & NFHS-3.<sup>[7]</sup> Other studies<sup>[9,30-32,33-36]</sup> also indicate higher prevalence of tobacco abuse in patients suffering from various mental illnesses. A study by Prabha S et al<sup>[37]</sup> also reported higher frequency of tobacco use in males. A study by Srinivasan et al<sup>[24]</sup> states no more prevalence than general population but that were related to smoking form only. We found increased incidence may be because we have considered smokeless form too.

Our results show higher use of smokeless forms by psychiatric patients, 79.7% in Psychotic and 77.4% in Non-Psychotic group, as compared to previous study by De Leon J et al<sup>[12]</sup> which showed higher use of smoking than smokeless tobacco by psychiatric patients. Other studies also showed similar findings.<sup>[11,38]</sup> 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 and also socio cultural differences.

Though the proportion of Non-psychotic group consuming tobacco is higher in study, the dependence level in Smokeless category is significantly higher in Psychotic group than Non-psychotic group, whereas Smoking category of tobacco did not show any significant difference between Psychotic and Non-psychotic groups. This difference in patterns of tobacco consumption by Psychotic and Non psychotic is important in terms of clinical management of patients with psychotic disorder we have to emphasize repeatedly for tobacco de-addiction as they are more dependent on smokeless form than patients with Non-psychotic disorder. This is consistent with studies done by Leon et al<sup>[39]</sup> and study by Bejerot and Humble.<sup>[40]</sup>

With psychotic patients using tobacco to manage symptoms more than Non-psychotic ones, this finding can be important in clinical management of tobacco abuse in psychotic patients. Though contrarily, in a study by Piazza and Moal<sup>[41]</sup> showed that most of psychiatric patients especially with psychotic disorder start tobacco consumption as a reaction to stress, with many other studies supported similar finding.<sup>[33,42-45]</sup> Both groups stated Doctors advice as major reason to try abstinence, we couldn't find any study with similar findings. It's important in Indian perspective, with the doctor being considered as authority figure. Consistent advice to patients regarding abstinence during each follow up to motivate for de-addiction could help.

Consistent to our study previous study by Kelly and McCreadie et al [34] in schizophrenia and study by Wu and Anthony<sup>[46]</sup> in adolescent depression, majority of patients had started tobacco use before initiation of mental illness. Also various studies reported similar findings in case of depression.<sup>[25-27]</sup>

The pattern of tobacco use in Psychotic group during waxing and waning of symptoms is in keeping with the hypothesis that nicotine is used for self-medication. This is reported in study by Nissel et al<sup>[43]</sup>, a study by Kumari and Postma.<sup>[47]</sup> Various other studies reported similar findings.<sup>[31,33,41,42,44,45]</sup> This is clinically significant as more of patients with psychotic disorder have reported this finding significantly compared to those with Non-psychotic disorder. So we have to be vigilant during routine follow up of psychotic patients and ask about any change in addiction pattern so that it will help to take appropriate measures at an early stage. Those with psychotic disorder perceived that tobacco affects their mental illness, so clinically being watchful for self-medication behavior could help in management. Also some of patients reported relief from symptoms after consumption of tobacco again keeping with hypothesis of self-medication as reported in previous studies.<sup>[31,33,41-45,47]</sup>

In our study most common substance use along tobacco was alcohol. We couldn't find similar study finding, but according to results of a National Institute of Health (NIH) study nicotine dependence is most prevalent among persons with current drug and alcohol use disorders.<sup>[36]</sup> Also various studies reported increased consumption of tobacco with other substance especially alcohol.<sup>[27,48-51]</sup>

Our study found that more than half of patients relapse, which can be reduced keeping in mind the pattern of tobacco use associated with symptom variations in psychotic patients, with effective use of medicine for symptom control.

### V. Conclusion

Tobacco use by chewing, being representative of local use in India, is highly popular even among psychiatric patients. Dependence pattern has specific importance to psychotic patients. The tobacco use pattern in relation to symptoms in Psychotic disorders could be of significance for early recognition and management of Psychotic symptoms. Self-medication aspect of tobacco use also been highlighted, suggesting interaction between disease management and tobacco use. Advice by physician appears more important than earlier thought, especially considering Indian context of doctor patient relationship.

### VI. Limitations

Study is cross-sectional in design, no long term follow up of patients. Answers were based on their recall for abstinent subjects. Variation in size of different pudis (sachets) of tobacco available in India. No comparison between those who consumed and who had never consumed tobacco.

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	Pages	Figures	Tables	Words
Abstract	01	00	00	225
Text	13	00	05	2267

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**Tables**

**Table 1:** Form of tobacco used

Form of Tobacco	Psychotic Disorder ( n=143)	Non-Psychotic Disorder (n=133)
Chewing	114 (79.7%)	103 (77.4%)
Smoking	12 (8.4%)	19 (14.3%)
Both-Smoking & Chewing	17 (11.9%)	11 (8.3%)

**Table 2:** Dependence on Smokeless Tobacco by Fagerstrom Test

Dependence level	Ever used tobacco in smokeless form (n=248)	
	Psychotic disorder ( n=132)	Non-psychotic disorder (n=116)
Very Low	5 (3.8%)	8 (6.9%)
Low	21 (15.9%)	36 (31.0%)
Medium	20 (15.2%)	18 (15.5%)
High	54 (40.9%)	41 (35.3%)
Very High	32 (24.2%)*	13 (11.2%)*

\* Statistically significant, Chi-squared test: p=0.009, Mann Whitney U & Wilcoxon's tests: p=0.00026

**Table 3:** Dependence on Smoking Tobacco by Fagerstrom Test

Dependence level	Ever using tobacco in smoking form ( n=56)	
	Psychotic disorder(n=27)	Non-psychotic disorder(n=29)
Very Low	8 (29.6%)	10 (34.5%)
Low	2 (7.4%)	5 (17.2%)
Medium	6 (22.2%)	4 (13.8%)
High	9 (33.3%)	6 (20.7%)
Very High	2 (7.4%)	4 (13.8%)

**Table 4:** Most common reasons to start tobacco consumption

Reasons	Psychotic disorder (n = 113)	Nonpsychotic disorder (n = 102)
Curiosity	42.5%	47%
Peer pressure	38.9%	44.1%
Relief from stress	35.4%	25.5%
Manage symptoms	22.1% *	4.9%*

\* Statistically significant on Chi-square test (p=0.00027)

**Table 5:** Most common reasons for abstinence of tobacco

	Reasons for abstinence in Psychotic group	Reasons for abstinence in Non-Psychotic group
1	Doctor's advice (53.2%)	Doctor's advice (22.5%)
2	Self-motivation (17%)	Physical symptoms of addiction (20%)
3	Family pressure (10.6%)	Self-motivation (12%)