Smoking in patients with mental disorders: Observations in a developing country
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Abstract
Tobacco smoking is a form of substance abuse. 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. Some studies indicated that smoking could have some positive effects on the clinical state in schizophrenia and depression through neurotransmitter mechanisms. Such observations could be misinterpreted if one does not consider the enormous morbidity and mortality associated with smoking. Studies on smoking by psychiatric patients are few from developing countries where social and cultural and familiar factors influence smoking behavior. This study in Bangladesh on an urban population of 510 male psychiatric patients (Schizophrenia = 286, Major affective disorders = 84, Non psychotic disorder = 140) showed that the prevalence of smoking in psychiatric patients is no greater, if not lesser, than a control group of medically ill patients with no psychiatric disorder (n=177) and the general population. More number of psychiatric patients had quit smoking than the medically ill. The reasons for absence of higher smoking rates in the psychiatric group could be purely socio-economic and cultural. The study suggests that smoking is not invariably high or purposive in psychiatric disorders. Caution should be exercised in understanding results emerging from nicotine research in psychiatric patients.

Key Words: Smoking-Psychiatric disorders-Developing country Prevention

Introduction
An association between substance abuse and major psychiatric illness, mainly schizophrenia and affective disorders, is increasingly recognized (Lawrie et al, 1995;Jeste et al, 1996). There is compelling evidence that tobacco-smoking represent a form of drug addiction to nicotine, now classified as a psychoactive substance (Nissel et al, 1995). Smoking tobacco has been found to be common among patients with major psychiatric disorders like schizophrenia and affective disorders (Diwan et al, 1998;Breslau et al, 1998) higher than that in the general population (Goff et al, 1992; De Leon et al, 1995; Forchuk et al, 1997). Smoking was highest (50% to as high as 93%) among those with schizophrenia (Hughes et al, 1986;Diwan et al, 1998).

Research indicated that nicotine directly regulates the dopaminergic transmission in the mesolimbic and nigrostriatal systems through nicotinic receptors (Lohr & Flynn, 1992). It has been suggested that nicotine could control psychiatric symptoms especially the negative ones and reduce extrapyramidal side effects of antipsychotic drugs in patients with schizophrenia (Adler et al, 1993;Glassman et al, 1993; Sandyk et al, 1993). In these patients smoking had been described as a form of self-medication by the patient to experience its beneficial effects on psychotic symptoms (Nissel et al, 1995). Smoking has been related to clinical status in major depression also by the observation of relapse following withdrawal from smoking (Covey et al, 1997).

The relationship between smoking and psychiatric status may not be as simple as it is made to appear. Education and social class are powerful predictors of the likelihood that a person will smoke (Desjarlais et al, 1995).
Several sociocultural and economic factors could influence smoking behaviour. Most reports on smoking in schizophrenia have come from the developed west where the general social attitude to smoking is different from cultures where smoking is not so permissible and affordable. In countries like India smoking is often prohibited by familial, cultural and religious practices. For example less than 3% of Sikh men living in urban Delhi were found to be smokers compared to 45% of men in general (Venkatanarayan et al, 1996). In a common Hindi family smoking is looked down upon and disliked. Smoking in women is low in India. Only 7% of women were found to be smokers in a survey in Delhi (Venkatanarayan et al, 1996) compared to the west, and it more common among illiterate. Usually smoking by a female in a common Hindi family is considered blasphemous. The mass media in India are restricted from depicting smoking by women. The cost factor is another important one that determines the frequency and severity of smoking, especially among the poor. A severely disabled psychiatric patient with little or no independent source of income may not be able to afford smoking when the family refuses to oblige him.

The significance of smoking in psychiatric disorders would be clearer if the phenomenon is studied under circumstances like in India where non-clinical factors influences smoking behaviour. This information would help to understand better the relationship between smoking and psychopathology smoking. This study on Indian male population was done with the aim to measure the prevalence of smoking behaviour in patients with psychiatric disorders compared with a control group medically ill patients who had no psychotic disorder. Diagnosis was made by clinical interview using DSM IV criteria (American Psychiatric Association, 1994). Medically ill patients (MI) seeking treatment with a general practitioner and who were evaluated not to have a psychiatric disorder formed the control group.

The outpatients were a consecutive sample taken over a period of 6 months. Patients with AD and NPD were consecutive sample during the same period from the consultation practice AHMF The medically ill patients were studied in the outpatient consultation facility of EK a general practitioner working in the same city. Diagnosis of the medical condition was made by EK. Exclusion of psychiatric disorder in them was done by AHMF through a semi-structured clinical interview. All the patients lived with their families in the city or its suburbs. All the patients and families were explained the nature of the study and included into the study with their consent.

Smoking behaviour
Information of smoking was elicited by interviewing the study subjects. One relative living with them was also interviewed. This was possible for all the psychiatric our patients and nearly 80% of the medical patients. The respondents were asked the following three questions.
1. Was the subject ever a smoker?
2. Is he currently smoking or smoked only in the past?
3. Number of cigarettes of bidis (a native form of tobacco leaves) smoked per day. The details of age, education, employment, economic status, marital status of the patient were also recorded. Smokers were divided into two groups-"Current smokers" who were smoking...
currently and "Past smokers" who smoked in the past but abstinent at the time of study. These two together formed the "Ever smoked" group. The "Quit rate" indicated the number of smokers who had given up smoking at the time of the study and calculated as the percentage of past smokers among ever smokers. Information from the patient and the family member on the exact number of cigarettes/bidis smoked per day and was taken for analysis. Current smokers smoking 20 cigarettes/bidis or more per day were labelled as 'Heavy' smokers.

Analysis
SPSS program version 5.0 (Norusis, 1992) was used for compilation and analysis of data. Analysis was done to compare the number of current and ever smokers in each study group. Chi-square test, odds ratio and t-test were performed for statistical comparison.

Results
Patient population
The total number of patients assessed were 687. The study group consisted of 510 patients with psychiatric disorders and the control group was made up of 177 medically ill with no psychiatric disorder. In the psychiatric group there were 286 with schizophrenia, 84 with major affective disorders and 140 with non psychotic disorders. The psychiatric patients were of the same age as the MI (mean age=37, standard deviation = 11 vs 38, sd = 14; t = 0.86, p = not significant).

The number of MI who had less than 5 years of schooling (n=50, 28%) was significantly more than the psychiatric group (n=68, 13%; x2=20.55, p<0.0001 ). More of the psychiatric patients (n=240, 47%) were unemployed than the MI (n=24, 14% ; x2=62.32, p<0.001 ). Unemployment was more in SCZ (n=190,66%) than AD (n=27, 32%; x2=31.48, p<0.0001) and CMD (n=23, 16%; x2=94.01, p<0.0001). Psychiatric patients were more often poor (n=104, 20%) than the MI (n=19, 11 %; x2 = 8.34, p<0.01 ). The marital status of the psychiatric patients (341/510, 67% were married) was similar to the MI (125/177, 71% were married).

Prevalence of Smoking
The comparison of the study and control groups is shown in table 1 and figure 1. Among the psychiatric patients 235 (46%) had ever smoked that was not significantly different from the non-psychiatric MI patients (n=77, 44%).

<table>
<thead>
<tr>
<th>Variable</th>
<th>Psychiatric patients N=510</th>
<th>Medical Patients Control Statistics N=177</th>
<th>Odds ratio (95% confidence interval)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current smoker (CS)</td>
<td>161 (32%)</td>
<td>73 (41%)</td>
<td>chi-squared=5.48 p&lt;0.02</td>
</tr>
<tr>
<td>Past smoker (PS)</td>
<td>74 (15%)</td>
<td>4 (2%)</td>
<td>chi-squared=18.39 p&lt;0.001</td>
</tr>
<tr>
<td>Ever smoker (ES)</td>
<td>235 (46%)</td>
<td>77 (44%)</td>
<td>chi-squared=0.35 p&lt;0.55</td>
</tr>
<tr>
<td>Never smoker (NS)</td>
<td>265 (54%)</td>
<td>97 (55%)</td>
<td>chi-squared=0.82 p&lt;0.36</td>
</tr>
<tr>
<td>Quit rate (ES/PS)</td>
<td>74/235 (31%)</td>
<td>4/97 (5%)</td>
<td>chi-squared=0.23 p&lt;0.63</td>
</tr>
<tr>
<td>Heavy smoker</td>
<td>33/161 (20%)</td>
<td>13/73 (18%)</td>
<td>chi-squared=1.2 (0.6-2.6)</td>
</tr>
</tbody>
</table>

The number of psychiatric patients who were currently smoking (161, 32%) was significantly less than the MI (73, 41%).

The number of current smokers in Schizophrenia (109/286) was significantly higher than Affective Disorder (20/84, x2=5.59, p<0.02) and NPD (32/140, x2=6.86, p<0.01 but same as the MI group (x2=0.45, NS) Smoking quit rate was significantly more among the psychiatric patients (74/235, 31%) than the MI (4/77,5%). NPD had the maximum quit rate of 45%. The number of heavy smokers among
psychiatric patients (33/161 current smokers, 20%) was not significantly higher than the MI patients (13/73, 18%).

Discussion
It was evident from this study in Bangladesh on a fairly large number of psychiatric patients that the prevalence of smoking by the male psychiatric patients was not significantly greater than non-psychiatric population or the general population of urban India. In fact the number of current smokers were significantly less in those with psychiatric disorders when compared to medically ill control group. Among psychiatric patients those with schizophrenia smoked more often that others but not more than the medically ill controls or the general population. The number of heavy smokers was also similar in the psychiatric and control groups. The significantly high 'quit rates' among the psychiatric patients indicated that they were able to give up smoking more readily than those without a psychiatric disorder. It seems the repeated observations of higher rates of smoking in patients with schizophrenia and other psychiatric disorders than others may not always be true. This raises the issue whether the observation that increased smoking in psychiatric patients has some 'therapeutic' relevance mediated by biochemical mechanisms needs a fresh look. The reasons why psychiatric patients we studied did not smoke more could be predominantly socioeconomic and cultural. More of them were unemployed and poor and had no independent source of income. The patients were dependent on the family to give money to buy cigarettes of bid is. As all the patients studied were living with their families that gave the family a better control over smoking by the patients. Moreover, in India the patients do not receive any disability assistance from the state that could be spent on smoking as it happens in the developed countries where such assistance is available. The economic factor along with the cultural restrictions mentioned earlier could have curbed smoking behaviour by the patients. The benefits of quitting as well as the hazards of continuing smoking are clearly demonstrated. Tobacco use causes far more deaths than all other psychoactive substances combined. About three million people die each year from smoking-related diseases and this is estimated to reach 10 million by the year 2025. Smoking has been increasing in the developing countries whereas it has been falling in the developed countries. In has been noted that a major obstacle faced in reversing this upward trend is the aggressive sales promotion of cigarette companies that have shifted their focus from the developed countries to the poorer ones. The success of propaganda is greater among those who have fewer independent sources of information and who are under greater social stress. A vulnerable group is the patients with severe psychiatric disorders like schizophrenia living in poor countries. The trend in nicotine research in psychiatry, especially schizophrenia, could have serious consequences to the overall health care of psychiatric patients if one fails to consider the entire picture. Reports mentioning 'relief of psychiatric symptoms' 'lessening of drug-induced side effects' attributed to smoking, even if true in some instances, could tempt one to propose that smoking might be therapeutic to people with serious mental disorders. These half-truths emerging from nicotine research could be exploited by vested interest towards prompting smoking by such patients.

Limitations of the study
Smoking leads to increased morbidity and higher utilisation of health services. Hence selection of medically ill patients comparison group may not be ideal as the prevalence, smoking could be higher in them. This study however found the prevalence of smoking in medically ill was comparable to the general population. Hi use of this group for comparison is acceptable. Chewin tobacco is a frequent alternative mode of tobacco use in Bangladesh and in India (Gajalakshmi et al, 1996). This p did not report on this through we found that chewing indulged in by only 3% of psychiatric patients, half of were also smokers. Hence it was not the case that psych patients indulged in other forms of tobacco.
use.

**Conclusion**

This study showed that smoking in schizophrenia and other psychiatric disorder is not necessarily high as depicted studies done in the west. Socioeconomic and cultural factors developing countries like India could influence the smoker person with psychiatric disorder. With information ava from nicotine research, the mental health professionals, public health personnel and, most importantly, the psych patients themselves should not be misled to believe smoking is inevitable and purposeful in psychiatric disc like schizophrenia. Social, cultural and family influence that curb smoking could be utilized to prevent and reduce smoking by psychiatric patients.

**References**