Over the past decade, several studies from developed countries have reported that the prevalence of cigarette smoking among persons with severe mental illness is higher than that in the general population (1-3). Such group smokes more cigarettes per day and is less likely to stop smoking than smokers in the general population (4). There is considerable evidence that individuals with schizophrenia have higher mortality rates from cardiovascular diseases and cancer than the general population and the high prevalence and intensity of smoking may be one of the reasons for such higher mortality rates (5-8). Cigarette smoking is also a risk factor for dyskinesias, independently of exposure to anti psychotic medication (9). Data on prevalence of cigarette smoking among people with severe mental illness in developing countries are scarce. The aim of this study was to estimate the prevalence of cigarette smoking among people with severe mental illness in a large urban centre of a developing country.

METHOD

The study had a cross-sectional design and was carried out in Sao Paulo, the largest urban centre of South America, with a population of approximately 10 million inhabitants. Seven administrative districts, heterogeneous in socio-economic conditions, and totalling a population of 609.000 inhabitants, were chosen as the geographical area for the present study. In order to build a sampling frame that could most closely represent people suffering from severe mental illnesses living in the area defined for the study, medical records of all mental health services (hospitals, emergency, outpatient, day hospitals) that provided care for the public health sector, where people with severe mental illnesses

living in those areas were most likely to seek care, were screened. Selection criteria at this stage included having had at least one contact with any of those services in the period from 1st September to 30th November 1997, age between 18 and 65 years, a possible clinical diagnosis of functional psychosis, and a recorded address within the areas defined for the study. A sample was then randomly drawn from this list, for direct interview. Subjects had then to fulfil ICD-10 (10) criteria for a diagnosis of non-affective psychosis (codes F20 to F29), bipolar disorder (F30 or F31) or depressive disorder with psychotic symptoms (F32.4 or F33.4).

A standardised questionnaire was used to gather socio-demographic and socio-economic information. Data on psychiatric history was obtained with the Life Chart Rating Form (11). Psychiatric diagnoses were obtained with the ICD-10 checklist (12), and psychopathology was assessed with the PANSS (13). Patterns of use of substances, including tobacco, in the 12 months prior to the interview, and symptoms of abuse or dependence of substances in the same period of time were assessed with the sections 11 and 12 of the SCAN (14). Subjects and key informants were interviewed at their homes, whenever possible. The study had ethical approval from the ethical committee of the Faculdade de Medicina da Universidade de Sao Paulo, and from all institutions with such committees. All included subjects signed an informed consent form agreeing to participate in the study.

The main outcome measure was tobacco use in the 12 months previous to the interview. Prevalence of tobacco use was estimated, with corresponding 95% confidence interval.

Associations of tobacco use with characteristics of subjects were examined using χ^2 tests when the exposure variable was categorical, χ^2 tests for linear trend when the exposure variable was ordered, and analysis of variance when the exposure variable was continuous. Prevalence ratios and corresponding 95% confidence intervals were calculated. Stepwise forward logistic regression was used to build a model that best predicted tobacco use.

RESULTS

The list obtained from services had 620 names, of which 404 were drawn to be the sample of the present study. Of these, 206 (51.0%) subjects were interviewed. The main reasons for non-participation were not being found at given address (136; 33.7%) and refusals (59; 14.6%). Compared to subjects who were interviewed, non-respondents had higher proportions of women (56.1% vs. 47.6%; p=0.09), affective disorders (30.0% vs. 22.8%; p=0,15), and were slightly younger (38.2 years vs. 40.0 years; p=0,14).

Fourteen subjects were excluded from further analyses because they did not fulfil ICD-10 criteria for any psychotic condition. Of the remaining 192 subjects, 102 (52.3%) were men, 91 (16.1%) had not completed the 4 years of basic school, 110 (57.3%) were single, and 91 (47.2%) were born in the city of Sao Paulo (Table 1). Their mean age was 41.5 years (standard deviation: 11.4 years). The most frequent clinical diagnosis was schizophrenia, followed by bipolar disorder. Regarding PANSS scores, the mean for

positive symptoms was 11.5 (s.d.: 5.6), for negative symptoms it was 14.8 (s.d.: 8.6), and for general symptoms it was 25.9 (s.d.: 8.5).

One hundred and forty nine (78.8%) subjects referred having used any form of tobacco at least once in their lives, 131 (69.3%) referred to have used it on a regular basis, and 115 (59.9% -95% CI: 52.6 to 66.9%) referred regular use of tobacco in the previous 12 months. By far, the commonest form of tobacco use was cigarette smoking. Average consumption was 21.9 (sd: 13.5) cigarettes per day, with a more intense daily use of 30.1 (sd: 19.3). Among current smokers, 32 (27.8%) were light smokers (1 to 10 cigarettes per day), 43 (37.4%) were moderate smokers (11 to 20 per day), and 40 (34.8%) heavy smokers (more than 21 per day). Ninety-one (47.4%) subjects fulfilled criteria for nicotine dependence in the 12 months prior to the interview. Men were significantly more likely to be smokers. (Table 1) No other socio-demographic characteristic of subjects was associated with cigarette smoking. Number of psychiatric admissions, positive psychotic symptoms and anti psychotic medication use in previous two years, were statistically associated with tobacco use. Logistic regression showed that male gender (OR 3.34; p<0,001), marital status separated (OR 4.31; p = 0,003), and history of 10 or more psychiatric admissions (OR 2.55; p=0,02) were independently associated with higher risk of being a current smoker.

[Table 1]

DISCUSSION

The prevalence of cigarette smoking in the present sample was as high as those found in developed countries (1-4), and higher than that found for the general Brazilian population (15-16). There is often the perception that smokers with severe mental illness should not be targeted for smoking cessation intervention. Indeed, a substantial proportion of smokers with schizophrenia recognize that smoking is a problem, and a subset reports themselves to be interested in quitting (17), and some studies have reported promising results in helping individuals with schizophrenia stop smoking (18-20). Evidence about the acceptability of disease prevention in people with severe mental illness is inconclusive, but a recent study showed that many individuals with psychosis accepted the offer of a different physical health care management, providing a valuable opportunity for health education and promotion (21).

Selection bias is a concern in the present study. Although in the present study there was a high proportion of non-participation, it is unlikely that it biased the prevalence estimate for tobacco use, since non-respondents had a slightly higher proportion of women, and no association between age or diagnosis and tobacco use was observed. The present sample was constituted by individuals who seek care in the public health sector, which limits generalizability of findings. It is estimated that about 45% of the population of Sao Paulo has some kind of private health care plan (22). Nevertheless, at the time the present study was carried out, most of such plans did not cover mental illnesses, thus most people with these private health care plans would seek psychiatric care in the public sector.

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