



ASSESSING NICOTINE CONSUMPTION AND DEPENDENCY AMONG PATIENTS WITH DEPRESSION: A SINGLE-CENTER STUDY

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ABSTRACT

Objective: To ascertain the frequency and patterns of nicotine use habits among individuals diagnosed with depression.

Materials and Methods: This descriptive cross-sectional study was carried out at Karachi Psychiatric hospital, Malir Branch Karachi, Pakistan, from October 2023 to March 2024. The hospital's ethical board approval was obtained. The study aimed to assess nicotine use and dependence among 130 depression-diagnosed patients. Data collection utilized semi-structured forms and standardized tools, including the WHO STEPS tool and the simple and modified Fagerstrom Test. IBM-SPSS version 23.0 was used to compute and analyze the data.

Results: The study included 130 participants with Major Depressive Disorder. 61.5% reported tobacco use, with 57.5% smoking only, 15% using nicotine vapes, 18.75% using nicotine douches, and 8.75% using both. Tobacco use was higher among men. 60.8% of tobacco smokers were heavily addicted, along with 83.33% of nicotine vapes users and 85.71% of nicotine douches users. Only 13.75% expressed a strong intention to quit, with a median Quit Smoking Score of 4, suggesting contemplation without concrete plans.

Conclusion: This study underlines the significant occurrence of nicotine use and dependence among individuals with depressive illnesses. Utilizing standardized screening tools in routine clinical practice can aid in timely identification and management of nicotine-use disorder. Integrating these tools into psychiatric patient diagnosis can enhance overall care and outcomes, particularly in countries like Pakistan.

Keywords: Addiction, Tobacco, Smoking, Nicotine, Dependence, Depression.

ORIGINAL ARTICLE

Introduction:

Tobacco use is a huge global health concern, affecting millions of people across many demographics [1]. With an estimated 9.42 billion males and 1.75 billion females aged 15 and above still engaging in smoking worldwide, the impact of tobacco consumption reverberates across communities and nations [2].

In Pakistan, however, a lack of systematic studies has left a gap in understanding the extent of tobacco usage and the burden of nicotine dependence. Despite accounting for approximately 30% of the total population, the prevalence of smoking and tobacco use in Pakistan remains inadequately assessed, particularly among different demographic groups. Notably, research indicates a higher incidence of tobacco use among men, with rates nearly three times that of women within the 15-69 age group [3]. The connotation between tobacco use and psychological health conditions, such as depression, underscores the complexity of this issue. Studies from various countries, including the USA, Australia, and Great Britain, highlight a heightened pervasiveness of smoking among those with mental health disorders compared to the overall population [4,5]. Particularly concerning is the twofold increase in depression among smokers compared to non-smokers, with heavy smokers experiencing even greater susceptibility [6].

Understanding the dynamics of nicotine dependence is paramount in addressing the persistence of smoking habits and their associated health risks [7]. The emergence of the nicotine hardening hypothesis posits that declines in overall nicotine use due to tobacco control measures may paradoxically result in a higher prevalence of entrenched nicotine dependence over time [8]. However, conflicting findings within existing literature challenge the validity of this hypothesis, necessitating further investigation.

Moreover, the detrimental impact of tobacco use on life expectancy, especially among individuals with severe mental illness, highlights the urgent need for comprehensive assessment and intervention strategies [9]. Despite the well-known relationship between depressive disorders and using tobacco products, few researches have looked into the incidence of tobacco use and nicotine dependency among depressed patients living in developing countries such as Pakistan. [3,10].

Against that background, the purpose of this study is to fill a knowledge vacuum by evaluating the rates of using tobacco products, nicotine addiction, and motives for smoking cessation among those suffering from serious depression. By identifying these trends, we want to influence specific strategies and public health programs aimed at reducing the negative consequences of tobacco consumption on the psychological state and overall well-being.

Objective:

To determine the frequency and patterns of nicotine use habits among individuals diagnosed with depression.

Study Materials and Methodology:

This descriptive cross-sectional study was carried out at Karachi Psychiatric hospital, Malir Branch Karachi, Pakistan, Pakistan from October 2023 to March 2024. The institutional research and ethics committee approved the study protocol, and all participants signed a written informed consent form before enrollment.

Participants Enrollment and Eligibility Criteria

A total of 130 patients diagnosed with depression rendering to the International Classification of Diseases-10 (ICD-10) criteria were included in this research study. Participants were chosen from the inpatient and outpatient divisions. People having a history of regular nicotine use who were between the ages of 18 and 70 met the inclusion criteria. The study's exclusion criteria included patients with psychiatric conditions other than depression and subjects who declined to participate or failed to give informed consent.

Sampling and Data Collection Procedure

The sequential sampling method was used to establish the sample size, which came out to 130 participants. Of these, 76 were men and 54 were women, which corresponds to the gender distribution in the study group.

Data collection was performed using semi-structured forms and standardized assessment tools. Nicotine use habits were assessed using the WHO STEPS tool. Nicotine dependence was evaluated using the Fagerstrom Test, with a modified version utilized for assessing smokeless tobacco use. Motivation to quit smoking was assessed using the Willingness to Quit Ladder, a Likert scale ranging from 0 to 10. Additionally, a self-designed questionnaire was utilized to collect socio-demographic information from the study participants.

Statistical Analysis

IBM-SPSS version 23.0 was used to analyse the data. The distinctive features of the study cohort were compiled using descriptive statistics. Regularly distributed variables were shown as mean ± standard deviation (SD), while abnormally distributed variables were given as range and median. Unpaired t-tests were utilised for group mean comparisons, while chi-square tests were employed to evaluate frequency differences and correlations between variables. At p-value < 0.05, the level of statistical significance was established.

Results:

The study enrolled 130 participants diagnosed with Major Depressive Disorder, with a mean age of 39.6 years (±7.30), including 76 males and 54 females. The average duration of the disease was 2.33±1.51 years. Of the total participants, 61.5% (n=80) reported using one or multiple forms of tobacco. Specifically, 57.5% (n=46) reported smoking only tobacco, 15% (n=12) used nicotine vapes, 18.75% (n=15) used nicotine douches, and 8.75% (n=7) reported using both cigarette smoking and nicotine douches. Men were far more likely than women to smoke, regardless of the type of tobacco used (p=0.03). [Table-I]

Table-I: Patterns of nicotine consumption in study population

| Characteristic | Males (n=76) | Females (n=54) | p-value* |
|------------------------------------|--------------|----------------|----------|
| Tobacco smoking | 38 (50%) | 8 (14.81%) | 0.03 |
| Nicotine vapes | 10 (13.15%) | 2 (3.70%) | |
| Nicotine douches | 14 (18.42%) | 1 (1.85%) | |
| Tobacco smoking + nicotine douches | 7 (9.21%) | 0 (0%) | |

Among the participants who reported tobacco smoking (n = 46), more than half were categorized as heavily addicted (60.8%), with the remaining individuals classified as moderately addicted (39.2%). In the nicotine vapes category (n = 12), a significant majority (83.33%) were identified as highly addicted. Similarly, in the nicotine douches group (n = 14), a substantial proportion (85.71%) exhibited signs of addiction. Notably, among those who used both cigarette smoking and nicotine douches, every participant (100%) was classified as heavily addicted to nicotine. [Table-II]

Table-II: Nicotine dependence across different subgroups

| Category | Tobacco smokers (n=46) | Vape users (n=12) | Nicotine douches (n=14) | Combination of both (n=8) |
|-----------------------------|------------------------|-------------------|-------------------------|---------------------------|
| Mild to Moderate dependence | 18 (39.2%) | 2 (16.67%) | 2 (14.29%) | 0 (0%) |
| Severe dependence | 28 (60.2%) | 10 (83.33%) | 12 (85.71%) | 8 (100%) |

A relatively small fraction (13.75%) of nicotine users strongly indicated their intention to cease using any form of tobacco. The median Quit Smoking Score, corresponding to the highest frequency (37.5%), was found to be 4. This suggests that nicotine users often contemplate quitting smoking but may not have concrete plans to consider it. [Table-III]

Table-III: Distribution of Scores in Willingness to Quit Ladder Assessment

| Willingness score | Frequency(n) | Percentage(%) |
|-------------------|--------------|---------------|
| 1 | 7 | 8.75 |
| 2 | 9 | 11.25 |
| 3 | 6 | 7.5 |
| 4 | 30 | 37.5 |
| 5 | 8 | 10 |
| 6 | 4 | 5 |
| 7 | 5 | 6.25 |
| 8 | 11 | 13.75 |
| Total | 80 | 100 |

Discussion:

Our study observed a prevalence of nicotine use among tobacco users (n=80, 61.5%) similar to findings reported by Aggarwal et al., where 57% of tobacco users reported dependence. Notably, whereas hazardous use was more common among people with various diseases, nicotine dependency was more common among people who have psychotic and depressive illnesses [11]. Whereas, 58 of the 130 depressed patients in our study had nicotine dependence.

Similarly, research by Vanable et al. [12] among psychiatric outpatients, revealed higher degrees of daily smoking (61%) and chain smoking (18%), particularly among patients with schizoaffective disorder (67%), schizophrenia (63%), and depression (60%). In contrast, 57.5% of patients with depression in our study smoked tobacco, suggesting potential variations in tobacco use influenced by cultural, income, and availability factors.

Milani et al. explored smoking patterns and nicotine dependence among psychiatric patients in Razi Hospital, Iran, finding a high prevalence of smokers (70%), with 64.4% exhibiting high nicotine dependence. The study identified associations between smoking, male gender, hookah consumption, and depressive illness [13]. Although the prevalence of tobacco dependence in our study (n=46, 57.5%) was somewhat comparable, differences in cut-off points for defining dependence may contribute to variations in findings.

Heidi et al. reported a significant prevalence of nicotine dependence (45.2%) among current cigarette smokers, particularly in substance use and psychotic disorders groups [14]. Despite this, a large proportion of patients demonstrated low motivation to quit smoking, mirroring findings from our study indicating a lack of readiness to quit among individuals with depression. There has been a negative link found between nicotine dependency and depression-related readiness to quit among users who absorb nicotine through douches or vapes.

These findings underscore the importance of understanding and addressing tobacco use patterns and motivations among individuals with psychiatric disorders, particularly depression, to develop targeted interventions aimed at reducing nicotine dependence and promoting smoking cessation.

Conclusion:

This study underlines the significant occurrence of nicotine use and dependence among individuals with depressive illnesses. Utilizing standardized screening tools in routine clinical practice can aid in timely identification and management of nicotine-use disorder. Integrating these tools into psychiatric patient diagnosis can enhance overall care and outcomes, particularly in countries like Pakistan.

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