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Relationship between Stress and Smoking among Psychiatric Patients

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Abstract

Smoking directly impacts disease burden via its toxic effects. Those diagnosed with psychiatric disorders are particularly affected. Patients with schizophrenia are more likely to smoke and have higher levels of nicotine dependence than the general population. Active psychiatric disorders predict an increased risk of the onset of daily smoking and nicotine dependence, with those with multiple disorders at even more risk. *The aim of study* was to explore the relationship between stress and smoking among psychiatric patients. Design: A descriptive correlation, cross – sectional research design was utilized to conduct the current study. *Setting:* The study was conducted at *Psychiatric* and Addiction Treatment Hospital in Mit-Khalf at Menoufyia, Governorate. Sample: A convince sample (97) was selected in the chosen setting inpatient department. Data were collected using the depression, anxiety and stress scale and Fagerström Test for nicotine dependence. The collected data were analyzed using SPSS version 16. Graphics were done using Excel program. Quantitative data were presented by mean (X) and standard deviation (SD). Friedman test p was performed to differentiate changes in different follow up results of different studied variables. Qualitative data were presented in the form of frequency distribution tables as number and percentage. It was analyzed by chi-square (χ^2) test. Level of significance was set as P value< 0.05 for all statistical tests. *Results:* The results revealed that, the mean age is 37.25±10.4, and onset of disease is 5.55±5.73. The majority of the sample has mild and moderate dependence (81.5%). Majority of the studied sample have mild and moderate level of stress (92.8%). there were significant positive correlation between smoking and stress. Conclusion: there were significant positive correlation between smoking and stress. Recommendation: Based on the results of this study we recommend Intervention measures, such as screening, treatment and tobacco smoking prevention programs should be urgently incorporated into mental health services on a routine basis.

1. Introduction

"The daily use of cigarettes is one of the most common fatal for long periods, but is often overlooked by the psychiatric profession. A smoking-related fatal disease is commoner among people with schizophrenia than among the general population. Cigarette smoking is viewed as avoidable mortality in patients with schizophrenia. Smoking decreases the helpful impacts of numerous psychoactive specialists and its

withdrawal prompts an intensifying of state of mind, tension, and discernment" [1]. As a rule, "the more extreme the psychiatric condition, the higher the smoking predominance. Smokers with emotional wellness issue likewise smoke all the more intensely" [2] " maladjustment's People have higher smoking rates, more elevated amounts of nicotine reliance, bring down end rates and a lopsided wellbeing and money related weight from smoking contrasted and the overall public. Smokers with emotional sickness are significantly more prone to pass on as an outcome of smoking than from their psychiatric condition" [3].

"Smoking cessation remains a neglected area in psychiatry, due to myths and misconceptions about smoking in the mentally ill. For example, many mental health workers believe smoking cessation will exacerbate mental illness" [4]. "Smoking cessation is associated with reduced depression, anxiety and stress and improved positive mood and quality of life. In addition to significantly improved mental health" [5].

"Reason which lead individuals with schizophrenia to smoke is to reduce the side effects of these medications, which may incorporate depression, blurred vision, and eagerness, tremors, and muscle contractions. In particular, anti-psychotic drugs block dopamine receptors in the brain and smoking overcomes this blockage by stimulating dopamine release" [6]. "Clinicians are in this manner urged to ask all patients about tobacco use, advice smokers to quit, assess their readiness to quit, tailor assistance accordingly, and arrange for follow-up. Key procedures for smokers who are not prepared to stop incorporate concentrating on the advantages of progress and the dangers related with tobacco use, and tending to key obstructions to end (e.g., stress, fear of weight gain, and nicotine withdrawal). Smokers who are ready to quit should be encouraged to set a quit date in the following two weeks, given a prescription for pharmacologic cessation treatment (unless it is contraindicated), and linked with advising support. Mood- management strategies may likewise be useful for smokers with present or past mental illness" [7].

2. Significant of the Problem

Smoking is a major determinant of global health. In 2013, it occupied the second rank among the global risk factors, accounted for 6.1 million deaths and 143.5 million DALYs [8]. A research from Saudi Arabia reported a prevalence rate of 57.9% among the male outpatient population compared to 78% of psychiatric inpatient in Iran [9]. Little published work has focused on determining the prevalence of tobacco smoking among patients with mental illnesses in Arab and other Middle Eastern countries [10]. High rates of cigarette smoking are seen preceding the onset of psychosis and stay stable right on time in the disease. Cannabis use frequently co-happens with cigarette smoking and is freely connected with particular clinical results [11].

"Schizophrenic's patients or schizoaffective disorder may smoke for different reasons than those without serious mental illness. They smoke in order to ameliorate a variety of negative internal or aversive states, including negative affect, and nicotine withdrawal as compared to control smokers" [12].

"Psychosocial stressors include acute negative life events or chronic strains considered as risk factors for tobacco use and influence smoking behavior (e.g., initiation, maintenance, and relapse) through a number of mechanisms. Specifically, smoking may function as a coping behavior, whereby nicotine is used to self-medicate in response to stress. In addition to exposure to stress lead to diminished self-regulation to control the urge to smoke. Acute stressful event and greater exposure to chronic stressors (e.g., related to work, finances or relationships are associated with higher smoking prevalence compared to persons who did not experience these stressors" [13].

"Cigarette smoking is the main reason of preventable death in the United States bringing about more than 400,000 deaths per year or about one in every five deaths. The connections between psychiatric disorders and smoking have important implications for public health as well as the financial burden to both the individuals and our Fragile health care system The notable danger of smoking may synergistically exacerbate health risks among this group, making additional clinical and research programs essential in addressing this critical public health crisis. Past research endeavors concentrated on co relational connections between stress and mental illnesses and cigarette dependence and mental illnesses; in any case, there is a lack of research testing correlational and causality relationships between stress as the independent variable and smoking as the dependent variable in individuals diagnosed with schizophrenia, bipolar, and depressive disorders. Extant research has not explored the direct effect of perceived stress on smoking"[14]. So the intent of this research is to examine relationships between stress and Smoking among psychiatric patient.

3. Subjects and Methods

3.1. The Aim of the Study

The aim of the study is to explore the relationship between stress and smoking among psychiatric patients.

3.2. Research Question

What is the relationship between smoking and stress among psychiatric patients?

What is the relationship between smoking and mental illness among psychiatric patients?

3.3. Research Design

Descriptive co-relational design was utilized to conduct the current study.

3.4. Research Setting

The study was conducted at The Psychiatric Hospital in

Tanta and the Psychiatric Hospital in Mit-Khalf at Menoufyia, Egypt.

3.5. Subjects

A convince sample (97) was selected in the chosen setting inpatient department.

3.5.1. Inclusion Criteria Include

a. Hospitalized Patients who had psychotic disorders and oriented and accept to participate in the study
b. Patient aged from 19- 70 under treatment therapy
c. Male sex
d. Able to communicate verbally

3.5.2. Exclusion Criteria Include

Female patient

3.6. Instruments of the Study

Three tools were used in this study:

Tool (1): Semi-structured interviewing questionnaire:

It includes socio-demographic characteristics including: patient's age, diagnosis, education, occupation and the onset of the disease.

Tool (2) Fagerström Test for nicotine dependence.

It was developed by [15]. It contains six items that evaluate the quantity of cigarette consumption, the compulsion to use, and dependence. In scoring the Fagerstrom Test for Nicotine Dependence, yes/no items are scored from 0 to 1 and multiple-choice items are scored from 0 to 3. The items are summed to yield a total score of 0-10. The higher the total Fagerström score, the more intense is the patient's physical dependence on nicotine.

Scoring system

Low dependence: 1-2
Mild dependence: 3-4
Moderate dependence: 5-7
High dependence: 8-10

Tool (2): The depression, anxiety and stress scale (DASS) by [16]:

-The DASS is a 42- questionnaire which includes three self-report sub-scales designed to measure the negative emotional states of depression, anxiety and stress. Each of the three sub scales contains 14 items, depression (14 items), anxiety (14 items), stress (14 items) the researcher took only stress scale The stress scale assesses difficulty relaxing, nervous arousal, and being easily upset, irritable and impatient.

Subjects are asked to use 4 –point severity /frequency responses range from: did not apply to me at all, to apply to me very much, or most of the time, in order to rate the extent to which they have experienced each state over the past two to three weeks. The modified Arabic tool was developed by [17]. Scores for stress are calculated by summing the scores for the relevant items. The total score ranges from 14-42. The higher score indicates negative emotional status.

Scoring system

No stress: 14-21
Mild stress: 22-35
Moderate stress: 36 49
Severe stress: 50-56

3.6.1. Reliability of the Tools

Reliability was applied by the researcher for testing the internal consistency of the tool, by administration of the same tools to the same subjects under similar conditions on one or more occasions. Answers from repeated testing were compared (Test-re-test reliability).

3.6.2. Validity of the Tools

They were tested for content validity by jury of five experts in the field of psychiatric Health Nursing and community nursing specialty to ascertain relevance and completeness. The tools proved to be valid.

3.6.3. Data Collection Methods

An administrative approval: was obtained from the dean of faculty of nursing and the director of The Psychiatric Hospital in Mit-Khalf and psychiatric hospital in Tanta. After explanation of the purpose of the study, the questionnaire used in the study was administered by the researcher. Ethical consideration: An oral consent was obtained from patients to participate in the study. During the initial interview the purpose of the study was explained. The subjects were assured that all information would be confidential and the data would be used for scientific purposes only and the patient have full right to withdraw from the study at any time. Pilot study was carried out 10 patients before starting data collection; this was done to estimate the time required for filling out the sheet and also to check the clarity of the tools. The sample of the pilot study was excluded from the study.

3.7. Procedure of Data Collection

a. Before starting any step in the study an official letter was addressed from the faculty of nursing, Menoufia University to the director of the General Secretariat of Mental Health, Meet Khalaf Psychiatric Hospital at Menoufia governorate and Tanta Psychiatric Hospital at Tanta Governorate, requesting their cooperation and permission to conduct the study
b. Once the official permissions were obtained from the principal person, and the other authorized personnel from the various settings, the researcher started the data collection.
c. All of the authorized personnel provided the needed information about the study from the researcher.
d. All patients who fit in the inclusion criteria were approached by the investigator to fill the questionnaires according to the following steps: - The investigator started data collection by introducing herself to the participant.
e. Oral informed consent was obtained from each participant. - Then a brief description of the purpose of the study and the type of questionnaire required to fill was given to each participant.
f. Data collected were done through interviewing with the patients in hospital in the period from june 2015 to September 2015.

g. The researcher started to collect the data from patients two days/ per week for each hospital.

3.8. Data Analysis

Data entry and statistical analysis were done using the statistical package for social sciences (SPSS version 16). Data were presented using descriptive statistics in the form of frequencies and percentages for qualitative variables, mean and standard deviation for quantitative variables. Qualitative variables were compared using the chi - square test and Kruskal Wallis and test correlation coefficient is used to measure the direction and strength of the correlation between variables. A significant level value was considered when P-value <0.05 and highly significant level value was considered when P value < 0.001 while P value of >0.05 indicated non-significant.

4. Results

Table 1 reveals that the mean age is 37.25±10.4, and onset of disease is 5.55±5.73, more than half of the samples were in Secondary educational level (53.6%) more than two third (79.4%) schizophrenia

Table 2 This table shows that more than one third of the sample has first cigarette after waking up within 5 minutes (39.2%) and more than half of the sample smoke more frequently during the first hours after waking than during the rest of the day (57.7%) and more than two third smoke when you are so ill that you are in bed most of the day (79.4%).

Figure 1 this figure shows that the majority of the sample has mild and moderate dependence (81.5%)

Figure 2 this figure shows that the majority of the studied sample has mild and moderate level of stress (92.8%)

Table 3 this table reveals that there was highly significant negative correlation between smoking and age while there were significant positive correlation between smoking and stress

Table 4 this table reveals that there were highly significant relation between level of smoking and occupation at 0.001

Table 5 this table reveals that there was highly significant relation between level of stress and educational level but there is no statistical significant relation between level of stress and Occupation and diagnosis.

Table 1. *Socio demographic characteristics of studied group (N=97). X refere to mean, SD refere to standered deviation).*

Socio demographic characteristics	No.	%
Age/years: (X±SD)	37.25±10.4	
Range	19-70	
Onset of disease/ years: (X ±SD)	5.55±5.73	
Range	1-25	
Educational level:		
Illiterate	13	13.4
Preparatory	8	8.2
Secondary	52	53.6
University and above	24	24.7
Occupation:		
Manual work	78	80.4
Office worker	13	13.4
Not work	6	6.2
Diagnosis:		
Schizophrenia	77	79.4
Depression	6	6.2
Mania	8	8.2
Addiction	6	6.2

Table 2. *Distribution of level of smoking among studied group (N=97).*

Level of smoking	No.	%
First cigarette after waking up		
More than one hour	24	24.7
31-60 min	12	12.4
6-30 min	23	23.7
5 min	38	39.2
Difficult to refrain from smoking in places where it is forbidden		
No	48	49.5
Yes	49	50.5
Which cigarette would you hate most to give up?		
Remaining cigarette	26	26.8
First cigarette	71	73.2
How many cigarettes per day do you smoke?		
0-10	38	39.2
11-20	40	41.2
21-30	14	14.4
>31	5	5.2
Do you smoke more frequently during the first hours after waking than during the rest of the day?		
No	56	57.7
Yes	41	42.3
Do you smoke when you are so ill that you are in bed most of the day?		
No	20	20.6
Yes	77	79.4

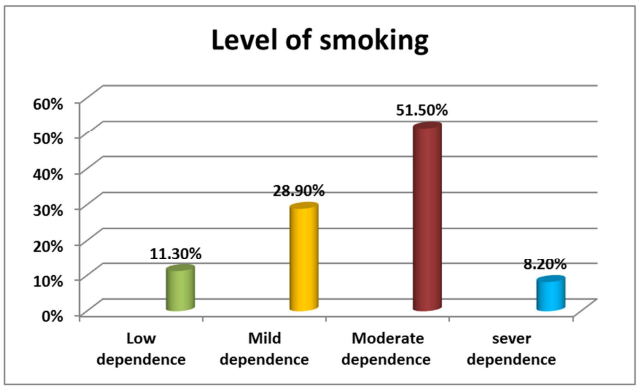

Figure 1. *Level of smoking among studied group (N=97).*

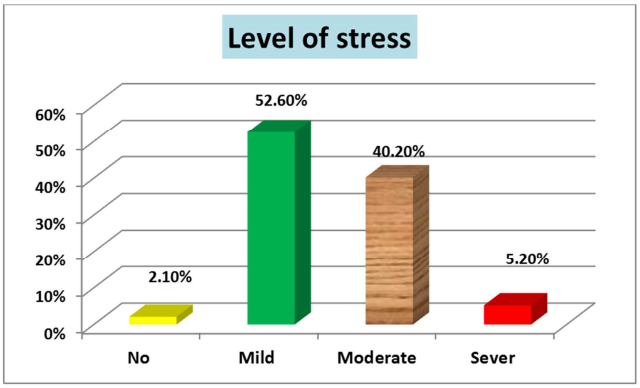

Figure 2. *Distribution of level of stress among studied group (N=97).*

Table 3. *Pearson Correlation between smoking and stress and age among studied group (N=97).*

	Smoking	
	r	P value
Stress	0.213	0.036 (S)
Age	-0.30	0.003 (HS)

r=correlation coefficient

Table 4. *Relation between level of smoking and socio demographic Characteristics studied group (N=97).*

Socio demographic characteristics	Level of smoking								χ^2	P value
	Low (n=11)		Mild (n=28)		Moderate (n=50)		Sever (n=8)			
	No.	%	No.	%	No.	%	No.	%		
Educational level:										
Illiterate	0	0	4	14.3	9	18	0	0		
Preparatory	0	0	0	0	8	16	0	0	17.6	0.03
Secondary	9	81.8	13	46.4	25	50	5	62.5		
University and above	2	18.2	11	39.3	8	16	3	37.5		
Occupation:										
Manual work	5	6.4	23	29.5	44	56.4	6	7.7	23.3	0.001
Office worker	2	15.4	5	38.5	4	30.8	2	15.4		
Not work	4	66.7	0	0	2	33.3	0	0		
Diagnosis:										
Schizophrenia	5	6.5	21	27.3	43	55.8	8	10.4		
Depression	4	66.7	2	33.3	0	0	0	0	26.3	0.002
Mania	2	25	2	25	4	50	0	0		
Addiction	0	0	3	50	3	50	0	0		

Table 5. *Relation between level of stress and socio demographic Characteristics studied group (N=97).*

Socio demographic characteristics	Level of stress								χ^2	P value
	No (n=2)		Mild (n=51)		Moderate (n=39)		Sever (n=5)			
	No.	%	No.	%	No.	%	No.	%		
Educational level:										
Illiterate	2	15.4	6	46.2	5	38.5	0	0		
preparatory	0	0	0	0	7	87.5	1	12.5	27.3	0.001
Secondary	0	0	34	65.4	15	28.8	3	5.8		
University and above	0	0	11	45.8	12	50	1	4.2		
Occupation:										
Manual work	0	0	8	61.5	5	38.5	0	0	4.14	0.65
Office worker	2	2.6	4	66.7	1	16.7	1	16.7		
Not work	0	0	39	50	33	42.3	4	5.1		
Diagnosis:										
Schizophrenia	2	2.6	35	45.5	35	45.5	5	6.5		
Depression	0	0	4	66.7	2	33.3	0	0	9.5	0.38
Mania	0	0	6	75	2	25	0	0		
Addiction	0	0	6	100	0	0	0	0		

5. Discussion

The current study reveals that the mean age is 37.25±10.4, and onset of disease is 5.55±5.73, more than half of the sample was in Secondary educational level (53.6%) more than two third (79.4%) schizophrenia. This result was in the same line with the study done by [18] titled as" Cigarette smoking, nicotine dependence, and motivation to quit smoking in South African male psychiatric inpatients" they found that their study subject age ranged from 18 to 59 with a mean of 30.3 ± 9.5 years and the majority was single (n = 103; 88.8%), unemployed (n = 99; 85.3%) and educated to secondary level (n = 83; 71.6%). The most common primary diagnoses were schizophrenia (n = 54; 46.6%), substance induced psychotic disorder (SIPD) (n = 26; 22.4%) and bipolar disorder (n = 14; 12.1%) while psychotic disorder due to another medical condition (AMC) (n = 3; 2.6%) was the least encountered".

Also the current study was congruent with study done by [19], titled as " Cigarette smoking among psychiatric patients in Brazil" they found in their study that "smoking prevalence was significantly higher ($p < 0.05$) among nonwhite, unmarried male participants, aged 40 years or over, with a low education level, hospitalized participants with a more severe mental illness (psychoses and bipolar disorder) or substance use disorders, and among those individuals previously admitted to hospital for psychiatric treatment. They also found that most patients were had a low education level".

The present study revealed that more than half of the sample have moderate dependence (51.5%), This result was

in the same line with [3], "they mentioned that People with mental illness have higher smoking rates, higher levels of nicotine dependence, lower cessation rates and a disproportionate health and financial burden from smoking compared with the general population. Smokers with mental illness are far more likely to die as a consequence of smoking than from their psychiatric condition". Moreover, [20]. "mentioned that patients with mental illness have been smoking more years, and more cigarettes per day, than smokers in the general population. As a result, they may need more intensive treatment to help them quit".

Regarding smoking, the present study revealed that there were a relationship between smoking and occupation. This finding is consistent with [21] they found that "25% of those whose current or most recent occupation is “manual” smoke, compared with 16% of non-manual groups" also [22] found that "individuals employed in the agriculture, forest, farming, and fishing industries (31.7%) had the highest prevalence of current smoking while those employed in professional and related services (15.6%) had the lowest prevalence of current smoking. Moreover, the result of the present study indicated that there were highly significant negative correlation between smoking and age i.e. persons have high rate of smoking in early age than late age this may be due to in early age the person have many problems and overloaded so, cope with this problems through smoking.

The present finding reveals that there were significant relation between smoking and education. This result in the same line with [23], they found that "Those with the lowest level of education were most frequently heavy smokers, heavy drinkers, physically inactive, and obese". Also [24] found that "low education is significantly correlated with daily smoking and lifetime nicotine dependence". Add to that [25]), who indicate that "educated individuals are less likely to smoke, and among those who initiated smoking, they are more likely to have stopped". Moreover [26], revealed that "Among adults 25 and older, 22.9 percent who do not graduate from high school and 43 percent with a GED smoke, compared to just 7.9 percent of those with a college education and 5.4 percent of those with a graduate degree"

The current study reveals that there were significant relation between stress and education. This result is consistent with [27] who showed that "Education creates differences between people in terms of access to information and the level of proficiency in benefiting from new knowledge". [28] Demonstrated that "there is a consistent association between lower education and higher levels of work stress". Accordingly [29] they indicated that "a lower education placed people at a disadvantaged position for majority of the stressors (i.e., financial stress, worse perceived health status, and psychological distress) and resources (i.e., perceived life control, social support, and social cohesion) ".

The present study reveals that there were significant relation between smoking and mental illness. This is may be due to patients with mental illness self-medicate with nicotine to alleviate symptoms as well as to improve cognition this result is consistent with [30]; they reported that "people with DSM-III-R mental illnesses in the month prior to the survey had a smoking rate twice as high as people with no mental illness". Also, [26] found that "nearly 1 in 5 adults (or 45.7 million adults) have some form of mental health condition, and 36% of these people smoke cigarettes. In comparison, 21% of adults without mental health conditions smoke cigarettes". Also [31] stated that "patients with schizophrenia not only have higher prevalence of cigarette smoking than healthy people but than people with other mental disorders as well. Cigarette smoking prevalence has been reported to be as high as 85-90% in cases with schizophrenia and national mental health survey". Moreover, [32] Bureau of Statistics, (2007) found that "32% of Australians with a current mental illness smoked compared with 16% of those without mental illness"

[33] reported that "patients with schizophrenia had a higher level of emotional distress this result is on the same line with the result of the present study which revealed that more than three quarter of the studied sample have mild and moderate level of stress where the majority of the studied sample were schizophrenic patient". Also the present study revealed that there were significant positive correlation between smoking and stress i.e. when level of stress increased rate of smoking increased". This result supported by [14] who found that "stronger relationship between perceived stress and cigarette dependence". So, it can be concluded from this study that patients with mental illness especially schizophrenic patients had a higher level of emotional distress, high prevalence of nicotine dependency and there were significant positive correlation between smoking and stress.

6. Conclusion

It was concluded that: There was highly significant negative correlation between smoking and age while there were significant positive correlation between smoking and stress; there were highly significant relation between level of smoking and occupation at 0.001 and there was highly significant relation between level of stress and educational level

Recommendation

Based on the result of the present study it was recommended that:-

a. Intervention measures, such as screening, treatment and tobacco smoking aversion projects ought to urgently incorporate into mental health services on a standard premise.
b. It is additionally basic to develop actions that focus on the training and education of mental health professionals involved with direct care and implement comprehensive smoke-free policies in care facilities.
c. More research, including qualitative studies, is expected to better comprehend the determinants of smoking and

explore possible interventions to facilitate and maintain smoking discontinuance among psychiatric patients attended in care facilities in Egypt.

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