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Why do Patients with Severe Mental Illness Smoke Cigarettes?

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Abstract

The disparity in rates of cigarette smoking between patients with severe mental illnesses (SMIs) and the general population is a well-documented phenomenon. With over 30% of tobacco sales annually being accounted for by patients with SMIs, smoking is a significant modifiable risk factor within this population. Previous research has hypothesized that this increased rate of smoking may be linked to genetic predisposition, self-medication, and as a means of coping with the negative stigma towards those with SMI. This study focuses on the motivating factors that drive these patients to start smoking as well as the emotional changes that take place once smoking becomes routine. Qualifying patients included those who currently smoked cigarettes and had a previous diagnosis of an SMI. Two surveys were administered to patients, one of which gathered objective reasons for smoking (i.e. imitation, distraction, pleasure) while the other gathered subjective changes in their emotional states as they continued to smoke (i.e. changes in happiness, calmness, sociability, etc). Our study found that the two primary reasons these patients began smoking were imitation and feelings of calmness while the two primary reasons for continuing to smoke were addiction and habit. Our study also found that patients felt significantly less happy and less sociable now compared to when they first started smoking cigarettes. This data challenges the belief that using cigarettes provides positive emotional reinforcement and can be used by healthcare professionals to create effective cessation strategies that will likely be different than those used for the general population.

1. Introduction

Smoking is one significant modifiable risk factor that contributes to mortality among people with severe mental illness (SMI). The disparity in smoking rates among those with psychiatric diagnoses and/or SMIs when compared to the general population has been a well-documented phenomenon (1,2). A meta-analysis completed in 2005 demonstrated that 62% of those with schizophrenia were current smokers, which is 5-6 times higher than those in the general population (1,3). With less than 10% of the general population meeting the criteria for SMI (individuals who require long-term treatment for their illness resulting in some degree of impairment of function), this population accounts for more than 30% of tobacco sales annually (4). Several hypotheses have been put forth to explain this phenomenon such as self-medication, genetic predisposition, and differences in cognition in those with SMI (3,5). However, there is not as much research on the subjective reasons as to why those with SMI smoke cigarettes. Qualitative studies that have focused on the emotional motivators of smoking found that patients with SMI regularly smoked for reasons including habit and routine, relaxation, ease in socializing, and addiction (6). Those with schizophrenia primarily smoked for maintenance of habit and its relaxing effects (6). Our study aims to discern the individual perspectives and motivating factors for cigarette usage within this population. We propose that the initial motivating factors such as imitation, distraction, and pleasure that led patients with SMI to start smoking will be different from the motivating factors that drive them to continue to smoke such as addiction, habit, and relaxation. Furthermore, our study proposes that certain subjective emotional states such as happiness, sociability, and calmness will change, either increasing or decreasing in intensity, within the timeframe of initially smoking to currently smoking.

2. Materials and Methods

2.1. Study Design

Study participants included people who were at least 18 years of age and seen during outpatient visits at a Community Mental Health Center (CMHC) in Toledo, Ohio. Inclusion criteria included current smokers who have psychosis-related and/or affective disorders categorized as SMIs. Exclusion criteria included patients who were non-smokers and under 18 years of age. Prior to data collection, this study was approved by the social and behavioral sciences committee of the IRB. This survey-based qualitative study employed the use of SurveyMonkey to gather data on the subjective emotional effects of smoking cigarettes in patients with SMIs. Three different surveys were administered to patients at a Community Mental Health Center (CMHC) in Toledo, Ohio and took approximately 15 minutes to complete. Data collection took place between January and December of 2021. Patient identifiers, including name or MRN, were not collected. Patients were first asked to provide quantitative information regarding their smoking status and history of cigarette usage in survey 1 (Table 1). These questions were adapted from both the publicly available Fagerstrom Test for Nicotine Dependence (FND) and from a questionnaire shared with our team by Dr. Manuel Gurpegui, utilized in his 2007 study analyzing subjective reasons for smoking in schizophrenic patients (7).

	Questions for Obtaining Patient Smoking History
1	How soon after you wake up do you smoke your first cigarette?
2	Do you find it difficult to refrain from smoking in places where it is forbidden?
3	Which cigarette would you hate most to give up?
4	How many cigarettes per day do you smoke?
5	Do you smoke more frequently during the first hours after waking than during the rest of the day?
6	Do you smoke when you are so ill that you are in bed most of the day?

Table 1: A sample of questions provided on the patient survey adapted from the Fagerstrom Test for Nicotine Dependence.

After obtaining the history of smoking, patients filled out two separate copies of survey 2 (Table 2); one for when they initially started smoking and one for their current state of emotions as they smoked. For example, did patients initially feel an increase in sociability while and immediately after they smoked a cigarette, and do they still have that same increase in sociability now that they have transitioned into a habitual smoker?

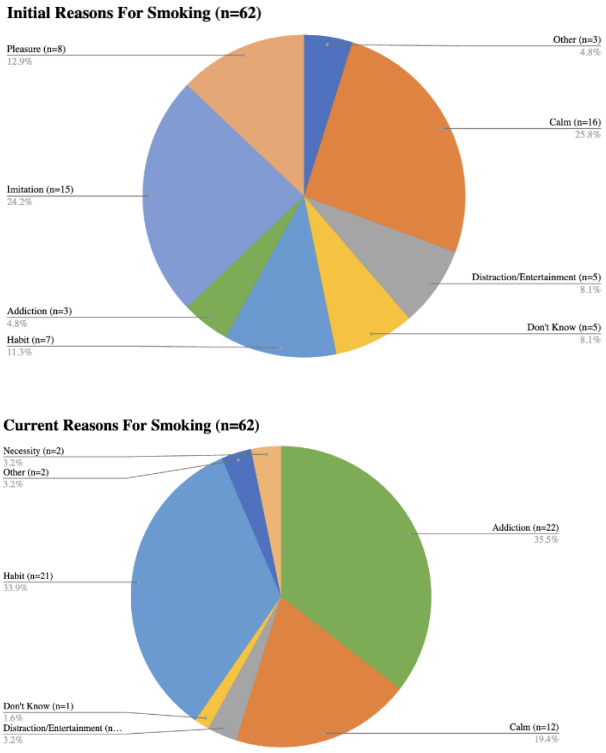
HAPPY	(1) HAPPY	(2) NO CHANGE	(3) SAD
CALM	(1) CALM	(2) NO CHANGE	(3) ANXIOUS
ALERT	(1) ALERT	(2) NO CHANGE	(3) DROWSY
CONCENTRATION	(1) MORE CONCENTRATED	(2) NO CHANGE	(3) LESS CONCENTRATED
ACTIVE	(1) MORE ACTIVE	(2) NO CHANGE	(3) LESS ACTIVE
SOCIABLE	(1) SOCIABLE	(2) NO CHANGE	(3) LESS SOCIABLE

Table 2: Questionnaire for patients to rate the changes in emotions between when they began smoking to how they feel currently while they smoke.

Finally, patients indicated the reason(s) they began smoking versus why they are current smokers in survey 3. Options included: pleasure, calming, necessity, addiction, habit, distraction/entertainment, imitation, and other. The terms 'habit' and 'addiction' were derived from the initial survey utilized by Gurpergui et al., translated from Spanish. 'Habit' was used to designate a patient's need to smoke (necesidad) but are able to quit if they so choose. 'Addiction' (vicio) was used to designate a patient's desire to quit but is unable to (7).

3. Results

3.1.



Figures 1 and 2: Pie charts categorizing participants' initial reasons for smoking and current reasons for smoking.

The most common initial reasons for smoking were imitation (24%, n=15) and calming effects (26%, n=16). The most common reasons for currently smoking were addiction (36%, n=22) and habit (34%, n=21).

3.2.

The results were analyzed using two different methods to assess reasons for the changes in emotions patients felt when initially while smoking and immediately after, compared to their current emotional states while and immediately

after smoking. In Table 3, a Fisher exact test compares the proportions of subjects in the categories of "more", "less", and "no change" as it pertains to a specific emotion (i.e. more happy or less calm). The categorical emotion of feeling 'happy' showed a statistically significant relationship with patients being more likely to rate "less happy" currently as they smoke cigarettes in comparison to the number of patients who rated "less happy" when they first began smoking cigarettes.

Count Changes in Initial and Current Responses to Emotions

	Initial (n=62)			Current (n=62)			
	More	Less	No Change	More	Less	No Change	p-value
Happy	19	1	42	19	10	33	0.0114*
Calm	37	4	21	45	5	12	0.2019
Alert	14	6	42	11	9	42	0.6260
Concentration	13	14	35	12	9	41	0.4200
Active	14	20	28	9	20	33	0.4961
Sociable	28	5	29	17	11	34	0.0706

Table 3: Table comparing the number of subjects who selected that they were more, less, or had no difference in the emotional states listed in the left-hand column when in their initial smoking state vs. their current smoking state. The right-hand column shows the p-value, calculated using Fisher's exact test. A significant p value (p<.05) was calculated for the category of "Happy".

3.3.

Data was converted into a binary system (more = +1, no change = 0, less = -1) for a paired t-test analysis. As seen in Figure 3, individuals felt significantly (p.=0069) less sociable in their current state of smoking compared to when they began smoking. While not statistically significant, a trend was seen in patients feeling less happy and less sociable, however more calm when comparing how they initially felt while and immediately after smoking to how they feel currently while and immediately after smoking.

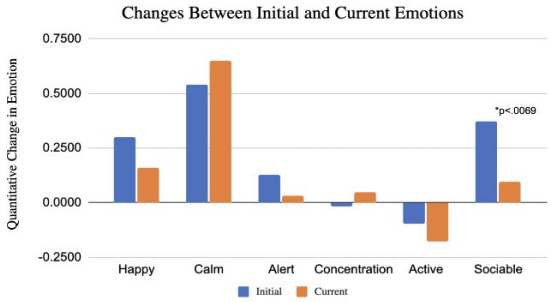


Figure 3: Changes in each response (i.e., more, less, no change) when comparing emotions initially felt when smoking to emotions currently felt when smoking. paired t-test was applied to the data and a statistically significant (p<.05) value was found for a decrease in sociability as seen in the far-right column.

4. Discussion

With this study, we sought to understand the motivating factors as to why patients with SMI smoke cigarettes, how those factors change over time, and if there are correlations between smoking cigarettes and changes in certain emotional states such as happiness, alertness, sociability, and calmness. Our study found that patients with SMI did not have any significant increase over time in feeling calm, alert, or active while smoking cigarettes. This begs the question if motivating factors such as increased feelings of relaxation and calmness suggested by earlier studies may not apply to patients with SMI and their motivations for smoking. The overall decrease in feeling calm observed in this study (although not found to have obtained a significant p-value) does bring into question the hypothesis that smoking cigarettes may serve as a means to manage stress and even promote relaxation, both of which reinforce and promote addiction (6,8,9). Further studies need to be conducted in order to effectively understand if patients are motivated to smoke by feelings of calmness and relaxation, or by other factors such as addiction and dependence. Our study demonstrated that patients with SMI feel significantly less happy and sociable with continued smoking compared to when they first began smoking. A similar

observation was found in a 2016 randomized controlled trial where patients with psychosis self-reported that smoking did not increase their feelings of sociability, even though it remained one of their motivations for habitually smoking (10). The negative social stigma towards those with SMI, specifically against those with schizophrenia, can create a heightened sense of anxiety for these patients when engaging in social interactions (9). In addition to understanding the motivations behind smoking in patients with SMI, it is important to understand the unique barriers that these patients face when attempting to quit. While habit, relaxation, and addiction serve as primary themes of motivation for cigarette consumption within this patient population, prior research has found that these same patients are interested in quitting (6). It is important to consider patients' perspectives for initially smoking, such as symptom mitigation and control, and reasons for continuing to smoke, to create effective smoking cessation strategies that will likely be different than those used for the general population. Limitations to this project include a small sample population (n=62) due to the voluntary nature of participation and inclusion criterion. This study did not control for confounders such as age, sex, psychiatric medications, polysubstance abuse, education level, or specific type of severe mental illness. Additionally, data collection was limited to one location in Toledo, Ohio. To address this limitation, it would be beneficial to replicate the study with a larger sample population and expand data collection locations for greater geographic diversity. It may also be beneficial to repeat this study with a population limited to those with a diagnosis of schizophrenia to better measure the degree of correlation between smoking and severity of negative and positive symptoms. Future directions may also include analysis to determine if confounding variables e.g., age, gender, or psychiatric medications, influence these findings. Finally, it would be beneficial to expand the study to include patients with SMI that have successfully quit smoking to assess their motivating factors. In conclusion, our study did not detect a significant increase in feeling calm, alert, or active while smoking cigarettes among patients with SMI, which leads us to consider that patients with SMI may continue to smoke for reasons different than those within the general population. Furthermore, while patients with SMI may begin and continually smoke to combat social anxiety and negative perceived stigma, our study found a significant decrease in feelings of sociability with continued smoking. More research is needed to investigate how the motivators of smoking may be unique to patients with SMI and the unique barriers that physicians need to consider when formulating smoking cessation strategies. The findings from this study regarding the changes in emotions tied to smoking could allow psychiatrists and other clinicians to better understand their patients' motivations for smoking. This will also enable the creation of more effective and motivating smoking cessation strategies for their patients and/or allow for an earlier intervention in smoking before habit and addiction ensues (10,11).

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