Understanding Schizophrenic Smokers: Effects on Cravings, Cues, and Withdrawal


Harvard South Shore Psychiatry Residency Training Program
VA Boston Healthcare System
Harvard Medical School and Boston University School of Medicine

Abstract

Background
We hypothesize that smokers with Schizophrenia (SWS) as compared to non-psychiatric smokers will demonstrate a heightened urge to smoke when exposed to tobacco cues, and this heightened tobacco cue reactivity is associated with increased smoking behavior.

Methods
Thirty SWS and thirty control group participants will complete an assessment both at baseline and in response to both the neutral and smoking cues presented during Tobacco Cue Reactivity Procedure (TCR). Five SWS had already been recruited and underwent the TCR in addition to the measures of urge, nicotine withdrawal symptoms, and mood ratings. Nicotine withdrawal is measured using the Minnesota Nicotine Withdrawal Scale (MNWS). Smoking urges are measured using the Questionnaire on Smoking Urges-Brief Form (QSU-Brief), and by two measures of craving (Urgo Now and Urgo Highest) with ratings scales. Mood ratings are current measures of sadness, anger, anxiety, and happiness. A 12-session period is followed by a neutral cue exposure trial and then the ratings. This is followed by cue exposure trials and then the ratings measured again. All within-subjects hypotheses in the SWS group use Pearson correlations and multiple regression analysis.

Results
Among the five SWS who underwent the TCR, the neutral versus smoking cues exposure showed no significant differences in withdrawal and mood within the subjects. Smoking cue exposure produced significantly heightened QSU-Brief, Urgo Now and Urgo Highest ratings in comparison to the neutral cues exposure among the five SWS.

Conclusions
In our pilot studies, SWS demonstrated heightened urge to smoke when exposed to tobacco cues versus neutral cues, but no significant withdrawal or mood changes.

Background
Tobacco dependence is overrepresented in schizophrenia.

• Few studies have examined differences in cue reactivity between SWS and normal smokers.
• This study is a part of a larger study that proposes an evaluation of potential etiological and maintaining factors underlying smoking behavior among SWS.
• The measure of smoking urge, withdrawal, and cue reactivity will be discussed here, while reward responsiveness, addiction, and emotional reactivity and regulation dysfunctions will be described elsewhere.

We hypothesize that:

• SWS will demonstrate heightened tobacco cue reactivity as compared to non-psychiatric smokers.
• Increased tobacco cue reactivity will be associated with increased smoking behavior and negativity to attempts to quit.

Methods
Thirty SWS and 30 control group participants will complete an assessment at:

• Baseline
• In response to neutral and smoking cues presented during TCR.

Five participants had already been recruited and

• Completed a review of available literature.
• Completed a self-report questionnaire packet which included measures of urge, nicotine withdrawal symptoms, and mood ratings.
• Positive and Negative Syndrome Scale (PANSS) at baseline to measure the three clusters of positive, negative, and general psychopathology symptoms.
• Brief Psychiatric Rating Scale (BPRS) as an outcome measure.

• Initial Packet of Self-Report Questionnaires:
  - Beck Depression Inventory-II (BDI-II) to assess baseline depression.
  - Fagerstrom Test for Nicotine Dependence (FTND) to assess nicotine dependence.
  - 6-item version of the Minnesota Nicotine Withdrawal Scale (MNWS) to assess the severity of seven nicotine withdrawal symptoms
    • The insomnia item will not be included.
  • 0 = “none” and 4 = “severe.”

Smoking urges will be measured using:

• Questionnaire on Smoking Urges-Brief Form (QSU-Brief)
• 10-item version of the 21-item BQ:
  • (1) Strongly Disagree to (7) Strongly Agree.
• Two Likert items: “How strong is your urge to smoke right now?” and “What was the highest urge to smoke that you felt within the last four minutes?”
• Based on an 11-point Likert scale
  • 0 = “no urge at all” and 10 = “strongest urge you’ve ever had.”

Mood Ratings

• How they are feeling “right now” in response to four emotions: sad, angry, anxious/nervous, and happy.
• Based on a 5-point Likert scale ranging from 1 to 5.

Conclusion
In our pilot studies, SWS demonstrated heightened urge to smoke when exposed to tobacco cues versus neutral cues, but no significant withdrawal or mood changes.

Data Analysis

• Differences between SWS and non-psychiatric control will utilize t-tests to investigate differences in the sample means.
• Within-subjects hypotheses in the SWS group will use Pearson correlations and multiple regression analysis.

Results of TCR

Among the five SWS who underwent the TCR, the neutral versus smoking cues exposure showed no significant differences in withdrawal measured by MNWS and mood (Sadness, Anger, Anxiety, Happiness) measured by the Likert Scales, within the subjects.

On the other hand, smoking cue exposure produced significantly heightened QSU-Brief, Urgo Now and Urgo Highest rating in comparison to the neutral cues exposure among the five SWS.

General Linear Models for All Data Across Time points During TCR:

• Time 1: Baseline
• Time 2: Following Neutral Cues
• Time 3: Baseline
• Time 4: Following Smoking Cues

Urgo Now Across TCR

Highest Urgo Across TCR

Mood Ratings and MNWS across TCR

The neutral versus smoking cues exposure showed no significant differences within the subjects in withdrawal symptoms measured by MNWS and the four mood states (Sadness, Anger, Anxiety, Happiness) as measured by the Likert Scales; hence the graph and tables were not shown here.

Conclusion

In our pilot studies, SWS demonstrated heightened urge to smoke when exposed to tobacco cues versus neutral cues, but no significant withdrawal or mood changes.

References