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Smoking status affects men and women differently on schizotypal traits and cognitive failures

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Abstract

Men have a greater risk of schizophrenia than women, and are generally heavier smokers than women. Smoking has been viewed as a form of self-medication in both schizophrenia and schizotypy, to the degree that it helps control negative symptoms and enhance cognitive function. To identify how smoking affects men and women differently on schizotypal traits and cognitive failures, the effects of gender and smoking on schizotypy traits and cognitive failures were assessed in 613 undergraduate men and women (mean age = 19.0 years), using Schizotypal Personality Questionnaire (SPQ) and Cognitive Failures Questionnaire (CFQ). Participants were divided into non-smokers, daily smokers, and non-daily smokers. In general, men showed more Interpersonal and Disorganized Deficits (SPQ) and Names Lapses (CFQ; failure to recall a name), than women. Independent of gender, daily smoking was associated with greater Cognitive-Perceptual Deficits (SPQ) and more Names Lapses, and non-daily smoking was positively correlated with memory (CFQ). In addition, non-daily smoking was associated with increased Interpersonal Deficits in men but

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decreased scores on this scale in women. Support for the self-medication model of smoking was found among daily smoking, but the relationship among non-daily smoking, schizotypy, cognitive failures, and gender was complex, bearing closer scrutiny in future research.

Keywords: Schizotypal personality; Cognitive failures; Gender; Non-daily smoking

1. Introduction

Schizotypy describes a continuum of personality characteristics and experiences related to schizophrenia. Three common factors in schizotypy (psychotic-like cognitive and perceptual unreality experiences, negative interpersonal characteristics including social withdrawal and emotional constriction, and cognitive disorganization and activation) parallel the three recognized subgroups of schizophrenic symptoms (distortion of reality, psychomotor poverty, and disorganization) (Gruzelier, 1996; Liddle, 1987; Raine, 1991; Raine, Lencz, & Mednick, 1995). Schizotypy has been considered as a common phenotype for the genetic diathesis of schizophrenia spectrum psychopathology (Diwadkar, Montrose, Dworakowski, Sweeney, & Keshavan, 2006; Gottesman, 1991). Thus, schizotypy appears to underlie the predisposition toward schizophrenia.

Gender differences in schizotypy and schizophrenia have been reported before. Peak schizophrenia onset ages are 20–28 years for men and 26–32 years for women (Castle, Wessely, Der, & Murray, 1991). Men generally have a greater risk of schizophrenia than women, with male-to-female risk ratio 1.40:1 (Saha, Chant, Welham, & McGrath, 2005). Men showed signs of greater illness severity than women, such as earlier onset, poorer premorbid functioning and different premorbid behavioral predictors. Men also exhibited more negative symptoms, cognitive deficits, and neurophysiological abnormalities, and women were more likely to display affective symptoms, auditory hallucinations and persecutory delusions, smoke less, and show lower rates of substance abuse (for review, see Leung & Chue, 2000). Using Schizotypal Personality Questionnaire (SPQ; Raine, 1991), women have been found to score higher on Cognitive-Perceptual Deficit and men scored higher on Interpersonal Deficit (Langdon & Coltheart, 1999; Raine, 1992). In contrast, other studies found that women scored higher on both Cognitive-Perceptual and Interpersonal Deficits (Roth & Baribeau, 1997), and even the opposite gender effect has been observed (Kremen, Faraone, Toomey, Seidman, & Tsuang, 1998). Men have scored higher than women on Disorganization Deficits, irrespective of schizophrenic relative status (Kremen et al., 1998).

Other gender differences have been reported relative to cognitive aspects of schizotypy and schizophrenia. Schizophrenic men have been shown to be more vulnerable to verbal processing deficits than women with this disorder (Goldberg et al., 1990; Goldstein et al., 1998). Using the Cognitive Failure Questionnaire (CFQ; Broadbent, Cooper, FitzGerald, & Parkes, 1982), men with schizophrenia showed more negative symptoms and cognitive deficits, including a higher Names Lapses (failures to recall names) score than women (Leung & Chue, 2000). Gender differences have also been found relative to schizotypy and *latent inhibition*, the ability to reduce attention to previously presented irrelevant stimuli (Lubow & De la Casa, 2002; Lubow, Kaplan, & De la Casa, 2001). In sum, there is strong evidence of sexual dimorphism in the cognitive abnormalities associated with both schizophrenia and schizotypy (Gruzelier, 1994; Lubow & De la Casa, 2002).