Nicotine dependence in patients with schizophrenia

We read with interest the important and clinically relevant study by Krishnadas et al. Patients with severe nicotine dependence had greater scores on the positive subscale of the Positive and Negative Syndrome Scale (PANSS) and patients with mild–moderate dependence had greater scores on the PANSS negative subscale compared with non-smokers. As rightly pointed out by the authors, this finding is in contrast to a previous study carried out in the same area and to other similar studies. The reason appears to be the use of the Fagerström Test for Nicotine Dependence (FTND), which has limited psychometric properties in patients with schizophrenia. The authors argue for the validity of the FTND in schizophrenia, by citing the article by Weiberger et al. Notwithstanding the methodological superiority of the study in terms of presence of a proper control group, the difficulty of using FTND in people with schizophrenia cannot be denied on a pragmatic basis. It has been widely accepted over the past few decades that dependence is a more holistic concept and cannot be attributed only to the amount or duration of smoking. However, Steinberg et al has questioned the relevance of the items of the FTND – such as time to first smoking, difficulty abstaining in forbidden places and frequency of smoking in the first hours after waking up – by means of a factor analysis study in patients with schizophrenia. In fact, modification of the FTND for the serious mentally ill population has been suggested in view of individuals’ frequent impairment in judgement and insight. Such a scale was also useful in Krishnadas et al’s study because all the patients were residents of supported accommodation and there was lack of any objective assessment of nicotine use. Moreover, the emphasis on the amount smoked even in a cross-sectional study like this would have better helped to verify the authors’ statement that ‘those with severe dependence have successfully overcome negative symptoms by increasing their level of nicotine dependence’ (pp. 309–310), although a longitudinal study is essential in settling this issue. We advocate the concept of pack-years in this regard.

The authors adjusted the results for many covariants but left out several important variables which may act as important confounders, such as use of smokeless nicotine, other substance use, presence of physical disorders, type of antipsychotics and other psychotropic medications. They have also not mentioned whether the consent from participants was taken or not. The fact that daily dose of medication was greater in the severely dependent group raises the possibility of a pharmacokinetic interaction or indicates the presence of a poor prognosis subtype with neurobiological underpinnings, which should be clarified in future studies. In Krishnadas et al’s study, the majority of patients were smoking to relax, to socialise better or to alleviate their loneliness, anxiety and depressive symptoms. This makes a strong case for a holistic treatment approach, rather than just prescribing anti-psychotic medication, as many of the mentioned attributing factors can be addressed with a multimodal treatment approach.

Declaration of interest

R.W. undertakes research and consultancy and receives fees for speaking from companies that develop and manufacture smoking cessation medications (Pfizer, Johnson & Johnson, McNeil, GlaxoSmithKline, Nabi, Novartis, and Sanofi-Aventis). He also has a share of a patent for a novel nicotine delivery device.

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the schizophrenia population. The closest we came was Patkar et al, who found a significant correlation (r = 0.89) between the FTND scores and DSM-IV diagnosis of nicotine dependence.5 Although it is possible that psychopathology may have affected the FTND scores, in our study, the scale administration was facilitated by two clinicians (S.S. and S.T.) thereby lending some objectivity to the measurement.

All participants gave written informed consent. We considered antipsychotic type as a covariate in the model. With regard to other potential confounding factors, our relatively small sample size meant that we did not have enough power to stratify the sample or to add more covariates into the model. It should, however, be noted that adding variables that may themselves significantly covary with nicotine dependence (independent variable) – such as smokeless nicotine/substrance use and physical comorbidity – would, in view of controlling for their effects, have decreased the variance explained by nicotine use itself and therefore have been deemed inappropriate in this setting.9

 Authors’ reply: We agree with Basu & Nebhinani that recent studies have questioned the psychometric properties of the FTND in this population. Indeed, as Steinberg et al suggest, we may have underestimated nicotine dependence by using the FTND.1 We acknowledged this shortcoming in the article. We conducted a principal components analysis on our data-set, in accordance with Steinberg et al. Our results revealed a two-factor structure similar to that of Radzius et al, explaining 53% of the total variance.2 The first factor reflected the degree of urgency to restore nicotine levels after night-time abstinence, and the second factor reflected the persistence with which nicotine levels are maintained during waking hours, thereby tapping into different domains of nicotine dependence itself. This is in contrast to Steinberg et al, who found two factors that were non-meaningful. In addition to other limitations acknowledged by Steinberg et al, exploratory factor analysis techniques have a number of methodological concerns. Most importantly, interpreting the results of any exploratory analyses like principal components analysis is heuristic and may not necessarily reflect the truth in the given data.3 This is probably one of the reasons why studies that have used such approaches have shown inconsistent factor structure for the FTND, even in non-psychiatric samples. Such studies should be interpreted with caution. In addition, as Basu & Nebhinani rightly point out, reducing a complex, overlapping and holistic concept such as dependence to a few simple meaningful factors may not be theoretically correct or possible.7 At a pragmatic level, a measure such as pack-years (which only measures amount and duration of smoking) may be a useful measure of lifetime nicotine consumption. We are, however, unaware of any studies that have validated the FTND (or its modifications) or pack-years using a gold standard diagnostic criterion for nicotine dependence in the schizophrenia population. The closest we came was Patkar et al, who found a significant correlation (r = 0.89) between the FTND scores and DSM-IV diagnosis of nicotine dependence.5 Although it is possible that psychopathology may have affected the FTND scores, in our study, the scale administration was facilitated by two clinicians (S.S. and S.T.) thereby lending some objectivity to the measurement.

Methodology and reporting of systematic reviews and meta-analyses

In their study, Brugha et al10 discussed the search strategies employed by the compilers of the systematic reviews and meta-analyses that they analysed. We wish that they had pursued this issue in more detail.

Brugha et al wrote that ‘Authors generally gave comprehensive details of search strategies employed, including details of electronic databases searched, exact search terms, dates covered by search and other methods used’ (p. 447). In examining many systematic reviews and meta-analyses of psychiatric literature in the course of our work with the PILOTS Database, an online index to the worldwide literature of post-traumatic stress disorder (PTSD) that we produce at the National Center for PTSD, we have often observed the inadequacy of the search strategies described by their authors. It is evident that few of these studies have made proper use of the controlled indexing vocabularies used by databases such as MEDLINE and PsycINFO or displayed evidence that the thesauri in which these controlled vocabularies are displayed evidence that the thesauri in which these controlled vocabularies are displayed evidence that the thesauri in which these controlled vocabularies are displayed evidence that the thesauri in which these controlled vocabularies are displayed evidence that the thesauri in which these controlled vocabularies are.

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