



Viewpoint

Tobacco use disorder and other mental disorders: The neglected dual disorder[☆]

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Tobacco use disorder (TUD) is a global significant health problem, which particularly impacts vulnerable populations, as individuals with mental disorders, who have a threefold higher likelihood of developing addiction compared to the general population. Consequently, the prevalence of cigarette smoking is on the rise among adults with mental health disorders, while it continues to decline among those without these vulnerabilities. The excess in mortality related to severe mental disorders (resulting in a life expectancy reduction of 10–25 years) can be largely attributed to tobacco use.¹ Individuals with mental disorders tend to initiate smoking at an earlier age, often before the full development of the mental disorder, and smoke more cigarettes per day, extracting a higher amount of nicotine per cigarette, and developing a more intense nicotine dependence.

Nicotine is the main psychoactive substance absorbed during smoking, believed to be the driving force behind the primary reinforcement effects of tobacco that sustain smoking and addiction. However, research indicates that tobacco use disorder (TUD) is not solely attributable to nicotine; rather, the inhibition of monoamine oxidase (MAO), derived from unidentified components in tobacco, also contributes to TUD through its psychoactive effects.² Furthermore, many of the adverse health outcomes associated with smoking, including oncological, pulmonary, and cardiovascular effects, are linked to other tobacco components, particularly those resulting from the combustion of tobacco.

The robust connection between tobacco use disorder (TUD) and other mental disorders suggests a potential causal link driven by shared neurobiological factors, such as disruptions in the nicotinic

cholinergic system (e.g., gene variants associated with the Alpha5 nicotinic cholinergic receptor -CHRNA5-, highly predictive of individuals with heavier smoking habits), along with environmental factors, which play a significant role in facilitating initiation (e.g. having a smoking family member, tobacco-related content on media, and ease accessibility to tobacco products).³

The heightened prevalence of smoking among individuals with severe mental disorders might be partly attributed to the impact of tobacco and nicotine on cognition, emotion, and mood. Thus, effective treatment for mental disorders other than TUD could potentially reduce smoking rates.⁴

Perhaps mistakenly assuming that they will be unable to quit, mental health professionals and stakeholders commonly do not address TUD among individuals with other severe psychiatric disorders. Consequently, there exist significant disparities in access to smoking treatment between individuals with and without mental health disorders. Despite the recent implementation of smoking restrictions in inpatient psychiatric units, interventions for TUD typically extend only to nicotine replacement therapies during admission to manage abstinence syndrome. These interventions lack other therapeutic components, such as motivational or cognitive-behavioural approaches. Overall, comprehensive TUD treatment programmes within mental health settings remain uncommon, despite the similarity in the desire to quit and the efficacy of smoking cessation medications for individuals with or without psychiatric disorders.⁵

Another common assumption is that quitting smoking could worsen a patient's mental state. Nonetheless, this is a contentious subject, and the research reveals diverse outcomes. In fact, some results suggest the opposite, indicating that treating TUD is associated with improved mental health outcomes.⁶

Frequently, tobacco addiction is still framed and discussed as a matter of behaviour or lifestyle, hindering a neuroscientific

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approach, diminishing the chances for these individuals to receive appropriate treatment, or any treatment at all. The connection between language and stigma is intricate and powerful.⁷ The manner in which we employ language can either challenge or perpetuate stigmatizing attitudes and beliefs. For instance, labelling Tobacco Use Disorder (TUD) as a habit may perpetuate the notion that it is not a mental disorder. Moreover, centring the treatment plan and policies around the goal of ‘cessation’ might inadvertently overlook alternative treatment options that could be beneficial to specific users, such as harm reduction (or the less stigmatizing term ‘replacement therapy’). Reducing mental health and addiction stigma requires a multi-faceted approach that involves individuals, communities, healthcare professionals, policymakers, and the media. Reframing TUD in the language of neuroscience can contribute to a more effective approach to TUD.

Opting for a dimensional approach to diagnosis, as opposed to a categorical or dichotomous one, enables the creation of person-centred interventions. Additionally, a transdiagnostic model, rooted in clinical neuroscientific findings rather than rigid classifications, has been suggested for the assessment and treatment of addictions. This model acknowledges shared domains with other mental disorders. Consequently, there is a burgeoning necessity to dispel prior misconceptions that neglect individual characteristics, advocating for precision psychiatry.

Some pharmacological and psychological interventions have proven to be beneficial for patients with severe mental disorders, and their effectiveness could be heightened through administration within an integrative care model.⁸

So far, there are four drugs available that can regulate the endogenous nicotinic system, including full and partial agonists, as well as noncompetitive antagonists of nACh receptors. These medications have received approval from both the Food and Drug Administration (FDA) and the European Medicine Agency for treating TUD. The approved drugs consist of nicotine replacement therapies, varenicline, cytisine, and bupropion. Additionally, deep transcranial magnetic stimulation has more recently gained FDA approval for short-term smoking treatment, as it has been found to reduce cravings and enhance cognitive control.

Both nicotine replacement therapy and bupropion have demonstrated greater effectiveness than a placebo in aiding individuals with mental disorders in achieving abstinence. Although currently unavailable in Europe, varenicline has also demonstrated efficacy assisting people with severe mental disorders. Cytisine might exhibit comparable effects; however, as of now, there have been no controlled studies conducted within psychiatric populations. Treatments have also demonstrated utility in alleviating symptoms associated with withdrawal during admissions (although smoking during hospitalization is not yet banned in many institutions worldwide) and in reducing tobacco consumption after discharge. This underscores the importance of implementing treatment plans during admissions.

These drugs have not demonstrated a notable rise in neuropsychiatric adverse events across multiple clinical trials. This alleviates a significant concern that had previously impeded individuals with mental disorders from deriving benefits from pharmacological strategies.⁵ Combining different drugs or extending pharmacotherapy appears to enhance long-term tobacco abstinence rates.

Several psychological interventions, particularly motivational enhancement therapy, cognitive-behavioural or other behavioural therapies, and third generation therapies (e.g. mindfulness) are effective among people with dual disorders when treating TUD. These interventions enhance outcomes when combined with pharmacological treatments, and vice versa.⁹

While specialized literature on this topic is limited and potentially misleading, some findings indicate interesting results when individuals unable to quit smoking transition to smokeless tobacco

(SLT) products like snus, e-cigarettes, or heat-not-burn tobacco.¹⁰ Although SLT use still carries health risks, they could be significantly lower compared to traditional tobacco combustion. However, clinical guidelines do not endorse their use, with a few exceptions such as those in the United Kingdom. Stronger evidence, devoid of conflict of interest is required, as many studies are sponsored by tobacco industry.

Raising awareness of TUD should become a priority to facilitate people with other mental disorders (dual disorders) to access comprehensive, multidisciplinary integrative treatment, enabling them to reduce or quit smoking, as well as to prevent initiation among vulnerable populations. Treatment should be offered to every patient suffering from other mental disorders as early as possible. Specific training for younger professionals, as well as ongoing training and motivation for seasoned staff, is imperative.

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All authors had full access to the text and contributed to the drafting, critical review, and revision of the manuscript.

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