



Respiratory health in serious mental illness

Fernando Sarramea^{a,b,c,d,*}, María José Jaén-Moreno^{a,b,c}

^a Maimonides Biomedical Research Institute of Córdoba (IMIBIC), Avenida Menéndez Pidal, 14004, Córdoba, Spain

^b Reina Sofía University Hospital, Avenida Menéndez Pidal 7, 14004, Córdoba, Spain

^c University of Córdoba, Department of Morphological and Sociosanitary Science, Córdoba, Spain

^d Centro de Investigación Biomédica en Red de Salud Mental (CIBERSAM), Instituto de Salud Carlos III, Madrid, Spain

Living with a serious mental illness (SMI) means a threat to one's physical health, with an increased risk of morbidity and a substantial reduction in life expectancy. Despite the high risk of suicide, most deaths and the life expectancy gap are attributable to natural causes. Poor physical health in SMI is a global and multidimensional issue, and the gap is not being reduced. Defining the causes and developing prevention initiatives remain a public health challenge (Fig. 1).

In people with SMI, the mortality risk due to respiratory causes, primarily chronic obstructive pulmonary disease (COPD), triples that of the general population and is even greater than cardiovascular mortality (Correll et al., 2022) and in the recent coronavirus disease 19 (COVID-19) pandemic, these patients were at an elevated risk for a severe course and outcome, including long COVID and mortality (Molero et al., 2023). However, respiratory diseases-associated mortality in SMI has received little attention. In this regard, two recent meta-analyses in bipolar disorder and schizophrenia described the prevalence and odds ratios (ORs) of the most common respiratory diseases in the general population. Notably, despite the high probability of underdiagnosis in these populations, the risks of asthma, COPD, and pneumonia were higher in schizophrenia (ORs: 1.70, 1.82, and 2.62, respectively) (Suetani et al., 2021) and bipolar disorder (ORs: 1.92, 1.73, and 2.82, respectively) (Laguna-Muñoz et al., 2024) than in the general population, regardless of sex, age range, and global setting. Furthermore, the risk of developing asthma or COPD was even higher among young people or women with bipolar disorder.

People with SMI are exposed to a lifetime context of physical health risk. Prenatal tobacco exposure, low birth weight, preterm birth, and early-life adversities are more frequent in people with SMI (Robinson et al., 2023) and are determinants of lung development and peak volume in early adulthood, a central factor in the current paradigm of respiratory health (Agustí and Faner, 2018). Tobacco smoking is the leading cause of COPD, and people with SMI have higher rates of smoking, start younger, and develop higher levels of dependence and heavier smoking,

with less likelihood of quitting. Unhealthy eating habits, metabolic syndrome, a sedentary lifestyle, and poorer living conditions decrease lung function. Antipsychotic treatments increase metabolic and sedentary lifestyle risks and are the principal risk factor for bronchial aspiration pneumonia.

In people with SMI, respiratory disease may start earlier and be diagnosed later. The evidence so far, based on population-based studies, does not allow us to date the onset, predict its evolution, and determine the link to the different risks. To shed light on this issue, we recently conducted the first study to examine the prevalence of COPD using spirometry in a representative sample of smokers with schizophrenia and bipolar disorder who were asymptomatic outpatients with no previous respiratory history. Among 112 smokers with an average age of 49 years, recruited from nine community care centers in southern Spain, one out of 4 patients had undiagnosed COPD, and 80 % had moderate or severe COPD (Jaén-Moreno et al., 2021). This is well above the 9 % observed in smokers in the Spanish population with equivalent tobacco consumption (packs/year >30). Moreover, 27 % of patients without COPD already had a forced expiratory volume in the first-second (FEV1) of below 80 %. The longitudinal follow-up of the sample, in the first study to evaluate the course of lung function in people with SMI, showed that up to 50 % of the subjects had a rapid FEV1 decline, and the mean annual rate loss (39.4 ml/year) was well above that reported in the general population (22.4 ml/year), including that observed in patients with COPD (33ml/year) (Ruiz-Rull et al., 2024a).

FEV1 and its development and evolution throughout life are vital elements in the current paradigm of COPD, which is no longer understood just as a disease that is self-inflicted by tobacco exposure. In the general population, it is also an independent predictor of mortality for any cause. In a population with such a high premature mortality, the study of pulmonary function and the early diagnosis of COPD should be a fundamental element in the early diagnosis of risk. Spirometry is the gold standard in the study of lung volume, is cheap and noninvasive, and

* Corresponding author.

E-mail address: fscferro69@gmail.com (F. Sarramea).

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Fig. 1. Premature respiratory morbidity and mortality in serious mental illness. There is no time to waste. FEV1, forced expiratory volume in 1 second, LLN, lower limit of normal.

is easily implemented in a community care setting. The recent literature shows a higher percentage of impaired spirometry—reduced FEV1, with or without an obstructive pattern—in schizophrenia (Filik et al., 2006; Ruiz-Rull et al., 2024b; Viejo Casas et al., 2024). For the first time, the finding is confirmed in bipolar disorder in a clinical sample compared with a general population group (Ruiz-Rull et al., 2024b). The reduction in FEV1 in the absence of obstruction (restrictive pattern) would be associated with an increased abdominal perimeter and, therefore, with the mechanical limiting factor of ventilation and the possible inflammatory influence of central obesity on lung volume. Chronic inflammation is also a potential link between lung function and the cardiovascular risk observed in the general population.

Tobacco smoking is the leading preventable mortality factor. A randomized controlled clinical trial has already demonstrated that informing smokers with schizophrenia and bipolar disorder of their respiratory function, studied by spirometry, and therefore of their individual health risks and prevention possibilities, generates mobilization towards change, promoting attempts to quit smoking and abstinence (Jaén-Moreno et al., 2021).

The literature on respiratory disease and mortality in people with SMI is robust. Nevertheless, clinical studies that could help to define the onset of respiratory disease, its link with the different risk factors, and the chances of prevention are still scarce. Such studies would be of paramount importance in populations under 40 years of age and those most vulnerable within the SMI population: multi-pathological patients, patients with cognitive impairment, those in medium- and long-stay hospitalization, with comorbid substance use disorders, or circumstances of adversity.

The unanimous evidence linking lung function to premature mortality risks has not been considered in attempts to develop diagnostic and prevention initiatives in SMI. Studying lung function in the same way as studying cardiovascular and metabolic diseases, with regular

monitoring and early interventions in risk factors, may be an opportunity to promote smoking cessation and respiratory health in people with SMI. Early diagnosis of respiratory disease and mobilization towards healthy habits for lung function would help prevent mortality in a population at special risk.

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Declaration of competing interest

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