COMMENTARY

Accelerated aging and frailty in schizophrenia

Commentary on "Aging of Persons with Schizophrenia: Analysis of a national dataset" by Taube *et al.*

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In addition to being a debilitating psychiatric disorder that is likely to jeopardize the quality of life of the sufferer, schizophrenia is also responsible for causing a significant burden on the health care and social support services of the world (Akhondzadeh, 2006). Taube and colleagues (2023) have noted that the quantitative burden of this mental health condition is not just secondary to the number of patients inflicted with it but also the earlier presentation in terms of their age. More and more of these patients are getting added to the already populated pool of patients with schizophrenia.

Given the number of patients suffering from this disorder, there is a growing need in understanding the nature of health care provided to them (Johansen *et al.*, 2022). Although many medical and social care bodies are structured and in place to support these patients, very few studies have tracked down their contribution to the posed question. This lack of retrospective or prospective approach, to study the drain on the services provided by these institutions, is unfortunate since it poses two challenges. One is the lack of a feedback to enhance the quality of their service and second is to understand if accelerated aging and the subsequently arising medical reasons are the contributing factors to the increasing patient load.

In this regard, Taube and colleagues have aggregated data in this study by tracking down the New Zealand database on schizophrenia patients in community care and long-term care setting to essentially observe if at all schizophrenia as a condition is contributed by the effect of accelerated aging and to what extent is accountable as a social burden. They have primarily compared and analyzed the demographics, co-morbidities, and social care needs of patients with schizophrenia with patients free from schizophrenia in this population.

The first aspect that this study addresses is the effect of schizophrenia on aging. While Taube and colleagues have very succinctly compared and examined the age at presentation, mortality age, and the years of infliction with schizophrenia before their death, perhaps what the study lacks is the evaluation of objective biomarkers of accelerated aging. Schizophrenia is considered by many as a disorder of accelerated aging (Campeau *et al.*, 2022; Shivakumar *et al.*, 2014). Several physiological changes inherent to aging appear at an earlier age in individuals with schizophrenia. Some of these changes are increased pulse pressure changes. Some of the aging-related physiological changes that appear prematurely in schizophrenia are impaired glucose tolerance, insulin resistance, and metabolic syndrome, contributing to increased mortality. Several studies examining the accelerated aging in schizophrenia have demonstrated an early cognitive decline, electrophysiological, and visual motion discrimination abnormalities as seen in the elderly. Further, structural, and functional neuro-imaging studies in schizophrenia have reported structural and functional brain deficits similar to aging. Biomarkers studies have also demonstrated an increased inflammation as noted by the increased pro-inflammatory cytokines and increased oxidative stress markers in schizophrenia which are also noted changes in aging. Telomere length, one of the crucial markers of aging, is also found to be reduced in schizophrenia patients, and research has shown its association with outcome as well as on the brain volume (Ayora *et al.*, 2022; Shivakumar *et al.*, 2018).

It is no surprise that increasing health issues that surface with illnesses like schizophrenia have a direct impact on mortality statistics as well. Some of the known health concerns are diabetes mellitus (DM) and chronic obstructive pulmonary disease (COPD) among others that have independent impacts on the health and quality of life of the sufferer. But it is interesting to gauge if more such illnesses may

present as co-morbidities with schizophrenia and affect the morbidity statistics. All factors considered, it is also important to understand if these things have a direct impact on the age of the patient subsequently increasing the patient population exploring these health care needs.

While the study by Taube and colleagues has very aptly pointed out the lack of antipsychotic inclusion as a limitation of this study, perhaps accounting for it, after all, would have been an appropriate strategy given that antipsychotics have a distinct role in both aging as well collateral metabolic side effects resulting in illnesses like DM for instance.

As DM is noted to be considerably more in this patient population as compared to population free of schizophrenia, it becomes imperative to understand if the increased prevalence of co-morbid DM is a state factor of schizophrenia or an unfortunate after-effect of antipsychotics (Galling *et al.*, 2016). Hence, accounting for antipsychotic status would have added robustness to this study and further weightage to the inferences that are drawn.

The second aspect that Taube and Colleagues have rightly pointed out is the social burden of this illness. The study comments on the lack of improvement in mortality data despite advancements in technology, better outreach, more awareness, and patient-friendly approaches in the last thirty years. Also, given the nature of co-morbidities, more pressing health concerns assume greater priority in diagnosis than psychosis. The study neatly addresses the underreported statistics.

The study looked at patients aged more than 65 years old and categorically compared those diagnosed with schizophrenia to others. They applied interRAI scale, a 236-item scale that examined the physical, psychological cognitive, and social well-being of all those who were absorbed as a part of this study. As the inclusion of subjects was entirely based on the information documented by health care professionals with regard to the diagnosis of schizophrenia, and the analysis dependent on the scores of the interRAI scale, it perhaps would have been interesting to learn if any inter-rater reliability tests (Vecchio, 2021) were done to ascertain the quality of the collected data.

The results with the demographic data were found to be quite interesting. When looking at the first assessment data points, people suffering from schizophrenia were found to be much younger at presentation as compared to the other group but with fewer co-morbidities than their schizophrenia-free peers. While Taube and colleagues have attributed this to the early frailty induced by the illness, it is still interesting to understand why the non-schizophrenia-free population is likely to have more co-morbidities. Perhaps the contention

that schizophrenia patients without too many co-morbidities enter dependency earlier than others, alone, cannot justify this finding. Accounting for therapeutic side effects of medications in this study for patients with schizophrenia predisposing them to illnesses like DM would have added further emphasis on this observation.

Another interesting significant finding is the presence of co-morbid COPD in these patients. While Taube and colleagues have explicitly mentioned this finding in their study, there is no specific mention of the association between schizophrenia, smoking, and COPD. Patients with schizophrenia are likely to smoke more than their peers. There is overwhelming evidence implicating the act of smoking with the development of COPD (Thomson, 2022). So, perhaps commenting on the data of smokers versus non-smokers among schizophrenia-inflicted population within this data, there would have been a better understanding of the presence of COPD as a co-morbidity.

This study has provided several insights into the aging aspect of schizophrenia. One important observation was that regardless of the confounding factors, the age of presentation to the supportive care facilities was significantly earlier as compared to those without schizophrenia. It was found that there were three times increased probability of patients with schizophrenia being enrolled in such care facilities as compared to the other group. This, therefore, comes as no surprise that the health costs secondary to schizophrenia are significantly higher. Also, the earlier presentation of patients to these centers is suggestive of the fact that there is increased infirmity warranting earlier care as compared to those without schizophrenia. This irony may affect this group from being evaluated adequately for other co-morbidities which would warrant supportive care in addition to what they are already receiving for their diagnosis of schizophrenia.

One of the biggest strengths of this study is its sufficiently large sample size. Additionally, the authors were able to track down most of the observations without having to deal with a lot of missing data. This study has been able to comment on some important aspects of schizophrenia. First and foremost, it has given evidence suggesting that schizophrenia is likely to prepone the time for availing of supportive care for health and social well-being in patients and is likely to accelerate the biological age of patients against their chronological age.

While Taube and colleagues have accounted for the limitation of the lack of antipsychotic data, a few other limitations can be acknowledged, for instance, the lack of details on the reliability of the collected data. Studying the available neurobiological and neurophysiological components in this population

would have further enhanced the examination of the proposed objectives. Additionally, a wider spectrum for studying co-morbidity would have helped to understand their association with schizophrenia. Also, there is an apparent lack of mention of the fact that some of the inferences drawn for this population may be specific to the country, culture, and domestic life of the patients in this data.

The quality of health care services of any center depends not just on the infrastructure of the organization but also on the demand of the caretaking population (Nagem, 2022). And it is imperative to mention that without adequate feedback about the demographics and other medical care aspects of any population, it is nearly impossible to have a good healthcare service. This study, through its observations, has been able to state the effect of schizophrenia on the aging of its population and the subsequent need to tend to it more specifically. The comparisons drawn between this group of patients with other aged population with and without co-morbidities has been able to comment on the frailty inflicted by schizophrenia on this population. Although aging biomarkers have not been assessed in this study, it does stress the frailty aspect of schizophrenia and early social support as proxy features of accelerated aging in the disorder. This study gives an impetus across the globe to understand the social needs of schizophrenia, hopefully facilitating a strategic approach to diagnosing, treating, caring, and even improving the life experience for these patients.

Conflict of interest

None.

Acknowledgements

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