EXTENDED ABSTRACT

Mapping the nexus of physical and mental illness: A study on physical multimorbidity, it's covariates and depression in Middle and Older Adults: Insights from Longitudinal Ageing Survey of India (LASI), 2017-2018

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Introduction

Physical multimorbidity (MM) and depression are growing concerns and future challenges for medical and social care systems worldwide, [1-4] particularly in low- and middle-income countries (LMICs) like India [5]. Depression may increase the risk of chronic illnesses such as heart disease, diabetes, stroke, and physical MM [4,6]. The presence of chronic conditions, including MM, and psychiatric conditions like depression, has been identified as a key driver of adverse health outcomes, threatening the attainment of Sustainable Development Goal 3 [7-10]. Furthermore, the relationship between depression and MM is bidirectional; however, most studies have primarily focused on depression associated with physical MM in India, rather than exploring the reverse.[5]. Consequently, the extent to which depression influences physical MM remains unclear. Therefore, it is necessary to conduct a study that contributes to a better understanding of the care needs of this group by examining the complex nexus between physical multimorbidity and depression, considering demographic, socioeconomic, and lifestyle factors.

Methods

The first wave of the Longitudinal Ageing Study in India (LASI), an extensive and nationally representative survey of Indians aged 45 and older conducted between 2017 and 2019, served as the primary data source for this study. LASI covers a wide range of health, economic, and social determinants and consequences of population aging in India. To ensure representativeness, LASI used a stratified multistage cluster sampling technique. This cross-sectional study involves 66,606 participants aged 45 and above. Physical MM was determined by assessing eight chronic illnesses covered in the LASI survey: high blood pressure, stroke, cancer or malignant tumors, diabetes, chronic lung disease, bone or joint conditions, neurological or psychiatric disorders, and high

cholesterol. Major depressive disorders were assessed using the Composite International Diagnostic Interview-Short Form (CIDI-SF). Socioeconomic variables included age, sex, marital status, living arrangement, education level, wealth index, place of residence, and physical activity. A multivariable regression model was used to analyze the relationships between depression and physical MM outcomes, controlling for confounders such as age, gender, and wealth.

Results

Overall, the weighted prevalence of physical MM was 17.9%. Highest prevalence (40%) was observed in Kerala [95% CI 36.9,43.2]. A significant regional (state) variation in the magnitude of physical MM was observed. Similarly, the weighted prevalence of physical MM among depressive participants was 24.6% [95% CI 21.5,29.8], which was significantly higher than non-depressive participants 17.5% [95% CI 16.3,18.1]. Preliminary regression analysis shows a strong association between depression and accelerated physical MM (aOR= 1.31, CI= 1.19, 1.41). Similarly, adjusted analysis revealed an elevated risk of having physical MM who resided in urban areas [aOR=1.74, CI=1.65,1.84], were females [aOR=1.21, CI=1.14, 1.28], were widowed/divorced/single [aOR=1.20, CI=0.97,1.50]. Likewise, compared to below 50 aged people, 50-59 years [aOR=1.76, CI= 1.64,1.90], 60-69 [aOR=2.76, CI=2.56,2.97], 70-79 [aOR=3.28, CI=3.01,3.58] and 80 years and above [aOR=2.37, CI=2.10,2.67] had a higher risk of acquiring depression. The risk of physical MM was increased proportionately with completed number of years of education. Furthermore, the result showed that higher odds of having physical MM [aOR= 2.27, CI= 2.09, 2.45] among those who fall under richest wealth quantile index compared to those who were richer [aOR= 1.75, CI= 1.62, 1.89], middle [aOR=1.52, CI=1.40, 1.63]], and poorer [aOR=1.25, CI= 1.15,1.35]. Similarly, elevated odds of having Physical MM trend were noticed among those who rated their health as fair [aOR=1.93, CI= 1.83,2.04] and poor [aOR=4.51, CI= 4.23,4.82] in contrast to those who rated their health as a good. The odds of having depression were high among those who hardly or never exercised [aOR=1.31, CI=1.23,1.39] than those who regularly worked out. Persons who were ever exposed to alcohol had lower risk of having physical MM [aOR=0.83, CI=0.78,0.88] a compared to those who were never.

Discussion

The findings underscore the substantial burden of physical multimorbidity and its strong association with depression among middle-aged and older adults in India. This highlights the need for integrated care approaches that address both physical and mental health conditions, particularly among women, those with higher economic and education status, and individuals with limited physical exercise. The observed disparities suggest that social determinants and health behaviors may play a critical role in the depression- multimorbidity nexus and warrant targeted interventions. Moreover, the results point to the importance of early identification and management of depression to prevent the onset or worsening of physical MM.

Conclusions: The burden of physical MM is high in India, particularly in more developed states like Kerala. Depression, education, physical activity, and urban residence are key risk factors associated with physical MM, along with other social and demographic factors. Findings from the LASI survey provide valuable insights into public health strategies that could promote healthy aging. Community-led interventions within primary care systems should focus on strengthening the management of physical MM associated with depression. Further research is needed to explore the long-term effects of depression on physical MM.

Keywords: Physical multimorbidity, Depression, Older adults, India, LASI

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