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Comments on 'Association Between Body Mass Index and Cognitive Function Among Older Adults in India: Findings from a Cross-Sectional Study

'Hindistan'daki Yaşlı Yetişkinlerde Beden Kitle İndeksi ile Bilişsel İşlev Arasındaki İlişki: Kesitsel Bir Çalışmadan Bulgular' Üzerine Yorumlar

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Dear Editor;

We read with great interest the article titled "Association Between Body Mass Index and Cognitive Function Among Older Adults in India: Findings from a Cross-Sectional Study," published in Experimental Aging Research (1). In this study, the authors hypothesized that older individuals with higher body mass index (BMI) have better cognitive functions. However, we have noticed some major problems with the study's design and interpretation. The study categorized patients' BMIs using the World Health Organization's definition as <18.5, 18.5-24.9, 25.0-29.9, and ≥30.0 kg/m^2, which were referred to as underweight (UW), normal weight (NW), overweight (OW), and obese. While these reference values are generally accepted in the young adult population, the optimal BMI values for mortality and malnutrition are reported differently in older adults. The suggested cut-off values in nutritional assessment scales are higher than ≥20.0 kg/m^2 (e.g., normal values in MNA are>23 kg/m^2, in MUST score>20 kg/m^2, or in NRS-2002 >20.5 kg/m^2) (2-4). Additionally, a large-scale meta-analysis reported that the geriatric population had the lowest mortality rate between a BMI of 23-30 kg/m^2(5).

The study has a major issue with how it treats Alzheimer's Disease (AD), which is the most common cause of dementia. It is considered a comorbidity alongside other diseases, which is problematic in studies that assess cognitive functions in diseases. We suggest a separate evaluation or exclusion from the study should be done for diseases like AD. While evaluating cognitive functions, it is not appropriate to pool all patients with dementia. Moreover, the study mentions that 51% of the population is uneducated and that the same cognitive assessment tests, such as counting backward from 100 by sevens, were applied uniformly to the entire

participants. However, we assert that applying the same cognitive assessment tests to educated and uneducated individuals might not be appropriate for evaluating cognitive functions.

Moreover, the current method of presenting comorbidities as simply present or absent, without any additional classification, and without using a comorbidity burden score like the Charlson Comorbidity Index (CCI), is insufficient. Different systemic diseases can affect cognitive functions in various ways, and evaluating the relationship between cognition and systemic disease using this approach is unsuitable. We suggest that a more comprehensive scoring system be used to better understand this relationship.

Table 3 presents a multiple linear regression analysis that examines the relationship between BMI and cognitive function. Model 2 adjusts for sociodemographic characteristics; however, it is unclear which variables were adjusted. Even after the adjustment, Model 2 shows the relationship with sex, age, marital and educational status.

I believe the strength of this study will increase if the authors consider these points.

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Conflict of interest

None.

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Authorship contributions

Idea: EAB Design: EAB Surveillance: EAB Analysis: EAB,DDG,ME Literature review:EAB, DDG, ME Article writing: EAB, DDG, ME Critical review: EAB, DDG, ME

None of the material in the letter is included in another manuscript, has been published previously, or is currently under consideration for publication elsewhere.

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