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Prevalence of sarcopenic obesity in the older non-hospitalized population: A systematic review and meta-analysis

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ADMINISTRATIVE INFORMATION

Support - Capital clinical diagnosis and treatment technology research and transformation application project.

Review Stage at time of this submission - Formal screening of search results against eligibility criteria.

Conflicts of interest - None declared.

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Amendments - This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 07 March 2024 and was last updated on 07 March 2024.

INTRODUCTION

Review question / Objective This systematic review and meta-analysis investigated the overall prevalence of SO in non-hospitalized adults aged ≥ 65 years and assessed the sociodemographic, clinicobiological, and lifestyle factors related to SO.

Condition being studied Studies on the prevalence of sarcopenic obesity (SO) in non-hospitalized older adults are limited.

METHODS

Participant or population Aged 65 years and older in nursing homes or communities, without sex, race, or regional restrictions.

Intervention Not applicable.

Comparator Not applicable.

Study designs to be included Cohort studies and cross-sectional studies.

Eligibility criteria The study exclusion criteria were as follows: (1) studies that did not provide a clear diagnostic criterion of SO; (2) studies including participants with specific diseases; (3) reviews, lectures, case reports, or articles in which the data were evidently abnormal or missing (and the author could not be contacted).

Information sources Literature searches were conducted using the EMBASE, PubMed, Web of Science, and Cochrane Library databases; the search period was from database inception through October 2023.

Main outcome(s) We extracted the first author's name, year of publication, study name, country in which the study was conducted, sample size, diagnostic criteria of sarcopenia and obesity, body mass index (BMI) and other study parameters, and the prevalence of SO.

Quality assessment / Risk of bias analysis Two researchers independently evaluated the risk of bias in the included studies using the Joanna Briggs Institute's Critical Appraisal Checklist for Prevalence Studies[8]. This checklist consists of nine items, and for each item, the study received a "yes," "no," "unclear," or "not applicable." remark. The total number of "yes" answers was counted per study: the more the number of "yes" answers, the higher the quality of the study. Studies were eligible if more than five of the items were achieved. Any disagreements were resolved by discussion or through consultation with a third senior researcher. Publication bias was tested using Egger's funnel plots.

Strategy of data synthesis We used R software (version 4.3.2, R Foundation for Statistical Computing, Vienna, Austria) for all statistical analyses. The combined prevalence and 95% confidence interval (95% CI) of SO in adults aged 65 years or older were calculated. Heterogeneity among the studies was assessed using Q and I² statistic indices. A significant Q value ($P < 0.1$) indicated a lack of homogeneity among the studies; $I^2 = 0$ indicated that an inconsistency among the results makes no statistical difference ($I^2 > 0.1$ and $I^2 < 50\%$, the homogeneity of the study was considered to be good, and a fixed-effects model was adopted; otherwise, the random-effects model was adopted).

Subgroup analysis Subgroup analyses were performed based on the study design, diagnostic criteria of SO, geographical region, age, sex, race, education level, physical activity, fall history, number of chronic diseases, comorbidities, high fasting glucose, and drug use.

Sensitivity analysis To assess the stability of the results, we performed a sensitivity analysis on the included studies by sequentially excluding individual studies.

Country(ies) involved China.

Keywords Older Adults; Sarcopenic Obesity; Prevalence; Meta-analysis; Systematic review.

Contributions of each author

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