

## Undernutrition, overweight and obesity among elderly living in communities in Africa: a systematic review

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**Introduction** Several studies in Africa and elsewhere have noted undernutrition, overweight and obesity among elderly people (1). African data were scattered and have not yet been subjected to a structured review. The objective of this study was to review studies on nutritional status (undernutrition, overweight, obesity) among elderly people living in communities in Africa, using Body Mass Index (BMI) and Mid-Upper Arm Circumference (MUAC) as tools.

**Methods** Literature was extracted from Web of Science, GoogleScholar, PubMed, Research4life, AJOL and Scopus database using the following search terms: Africa/each of its country, older adults, elderly, nutrition/undernutrition/overweight/obesity. Studies addressing nutritional status among the elderly (regardless of age) in Africa, irrespective of geographical area were included. Studies conducted in hospitals/nursing homes, using assessment tools other than BMI and MUAC, with insufficient information on methodology or with racial or gender discrimination were not included. The NEWCASTLE-OTTAWA QUALITY ASSESSMENT SCALE (NOQAS-adapted for cross sectional studies) was used to assess the quality of the articles. The four-stage review included 43 studies conducted in 17 countries covering almost all socio-geographical areas of the African continent. The systematic search was performed up to 25th November 2020. Two main types of studies (cross-sectional and prospective) were identified, conducted in rural and/or urban areas, with a sample between 62 and 2091, whose age was  $\geq 55$  years. For each country, the average prevalence (undernutrition/overweight/obesity) and correlation with Human Development Index (HDI) of study period/publication was calculated. This systematic review was registered to PROSPERO under number CRD42021216268(2).

**Results** All studies were of fairly good quality with scores ranging from 6 to 9/10. MUAC was exclusively used in two (4.7%) of 43 studies and its data made less usable when BMI was used by 100%. Using BMI, overall undernutrition was 19.9% in the continent, high in Central African Republic (33.4%) and low in South Africa (3.4%). Overweight (14.1%) was high in South Africa (27.6%) and low in Ethiopia (3.1%) when obesity (12.8%) was high in South Africa (50.4%) and low in Tanzania (0.7%). No correlation was found between undernutrition and the HDI ( $r = -0.326$ ,  $p = 0.235$ ). Overweight and obesity were respectively and positively correlated with HDI ( $r = 0.748$ ,  $p = 0.003$ ;  $r = 0.691$ ,  $p = 0.004$ ). The sampling techniques were diverse and not always appropriate.

**Conclusion** Nearly one in five people in Africa is undernourished and about 30% are overweight or obese. This should be a challenge to African authorities, especially since excess weight could be a problem in the future due to the nutritional transition. Nevertheless, there is an urgent need of complementary studies more accurate and robust.

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