Anthropometric

1-Strengths and Limitations of BMI in the Diagnosis of Obesity: What is the Path Forward?

By Sweatt, K (Sweatt, Katherine) [1] ; Garvey, WT (Garvey, W. Timothy) [1] ; Martins, C (Martins, Catia) [1] (provided by Clarivate) **Source CURRENT OBESITY REPORTS Volume 13 Issue 3 Page 584-595 DOI 10.1007/s13679-024-00580-1 Published SEP 2024 Early Access JUL 2024 Indexed 2024-07-16 Document Type Review**

Abstract

Purpose of ReviewThis review aims to discuss strengths and limitations of body mass index (BMI) in diagnosing obesity, the use of alternative anthropometric measurements, and potential new technology that may change the future of obesity diagnosis and management.Recent FindingsThe diagnosis of obesity requires the anthropometric assessment of adiposity. In clinical settings, this should include BMI with confirmation that elevated BMI represents excess adiposity and a measure of fat distribution (i.e., waist circumference (WC), waist to height ratio (WHtR), or WC divided by height0.5 (WHR.5R). Digital anthropometry and bioelectric impedance (BIA) can estimate fat distribution and be feasibly employed in the clinic. In addition, the diagnosis should include a clinical component assessing the presence and severity of weight-related complications.SummaryAs anthropometric measures used in the diagnosis of obesity, BMI is generally sufficient if confirmed to represent excess adiposity, and there are advantages to the use of WHtR over WC to assess fat distribution. BIA and digital anthropometry have the potential to provide accurate measures of fat mass and distribution in clinical settings. There should also be a clinical evaluation for the presence and severity of obesity complications that can be used to stage the disease.

Keywords
Author Keywords
ObesityBMIDiagnosticScreeningAdiposityAnthropometrics

Keywords Plus
BODY-MASS INDEXBIOELECTRICAL-IMPEDANCE ANALYSISOBSTRUCTIVE SLEEP-APNEAALL-CAUSE MORTALITYTO-HEIGHT RATIOCARDIOVASCULAR-DISEASE RISKCORONARY-HEART-DISEASEWAIST CIRCUMFERENCEABDOMINAL OBESITYFAT DISTRIBUTION

Anthropometric

2-Elucidating the role of diet in maintaining gut health to reduce the risk of obesity, cardiovascular and other age-related inflammatory diseases: recent challenges and future recommendations

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By Aziz, T (Aziz, Tariq) [1] ; Hussain, N (Hussain, Nageen) [2] ; Hameed, Z (Hameed, Zunaira) [2] ; Lin, L (Lin, Lin) [1] , [3] (provided by Clarivate) **Source GUT MICROBES Volume 16 Issue 1 DOI 10.1080/19490976.2023.2297864 Article Number 2297864 Published DEC 31 2024 Indexed 2024-01-20 Document Type Review**

Abstract

A healthy balanced diet is crucial in protecting the immune system against infections and diseases. Poor diets, such as the Western diet, contribute to the development of metabolic diseases, hypertension, and obesity. Microbiota, primarily composed of different microorganisms and residing in the gastrointestinal tract (GIT), also play a significant role in maintaining gut health. Polyphenols and probiotics found in fruits, vegetables, whole grains, legumes, nuts, and seeds promote gut health and support the growth of beneficial bacteria. Different types of diets, their categories, and their impact on health are also mentioned. The relationship between diet, gut health, and the risk of developing obesity, cardiovascular diseases, and inflammatory diseases is discussed in this review article. The rationale behind the review concludes future recommendations for maintaining gut health and reducing the occurrence of obesity, cardiometabolic diseases, and other inflammatory diseases. There is also the need for standardized research methods, long-term studies, and translating scientific knowledge into practical dietary recommendations.

Keywords
Author Keywords
Inflammatory diseasesmicrobiotaobesityprobioticspolyphenols

Keywords Plus
IN-SILICO CHARACTERIZATIONSPINAL MUSCULAR-ATROPHYMEDITERRANEAN DIETRHEUMATOID-ARTHRITISMETABOLIC SYNDROMECROHNS-DISEASELINOLEIC-ACIDMICROBIOTAMARKERSOVERWEIGHT

Anthropometric

3-The Detrimental Impact of Ultra-Processed Foods on the Human Gut Microbiome and Gut Barrier

By Rondinella, D (Rondinella, Debora) [1] , [2] , [3] ; Raoul, PC (Raoul, Pauline Celine) [4] , [5] ; Valeriani, E (Valeriani, Eleonora) [1] , [2] , [3] ; Venturini, I (Venturini, Irene) [1] , [2] , [3] ; Cintoni, M (Cintoni, Marco) [4] , [5] ; Severino, A (Severino, Andrea) [1] , [2] , [3] ; Galli, FS (Galli, Francesca Sofia) [1] , [2] ; Mora, V (Mora, Vincenzina) [1] , [2] ; Mele, MC (Mele, Maria Cristina) [1] , [2] , [4] ; Cammarota, G (Cammarota, Giovanni) [1] , [2] , [3] ; **(provided by Clarivate) Source NUTRIENTS Volume 17 Issue 5 DOI 10.3390/nu17050859 Article Number 859 Published MAR 2025 Indexed 2025-03-18 Document Type Review**

Abstract

Ultra-processed foods (UPFs) have become a widely consumed food category in modern diets. However, their impact on gut health is raising increasing concerns. This review investigates how UPFs impact the gut microbiome and gut barrier, emphasizing gut dysbiosis and increased gut permeability. UPFs, characterized by a high content of synthetic additives and emulsifiers, and low fiber content, are associated with a decrease in microbial diversity, lower levels of beneficial bacteria like Akkermansia muciniphila and Faecalibacterium prausnitzii, and an increase in pro-inflammatory microorganisms. These alterations in the microbial community contribute to persistent inflammation, which is associated with various chronic disorders including metabolic syndrome, irritable bowel syndrome, type 2 diabetes, and colorectal cancer. In addition, UPFs may alter the gut-brain axis, potentially affecting cognitive function and mental health. Dietary modifications incorporating fiber, fermented foods, and probiotics can help mitigate the effects of UPFs. Furthermore, the public needs stricter regulations for banning UPFs, along with well-defined food labels. Further studies are necessary to elucidate the mechanisms connecting UPFs to gut dysbiosis and systemic illnesses, thereby informing evidence-based dietary guidelines.

Keywords
Author Keywords
ultra-processed foods (UPFs)gut microbiomegut barrier

Keywords Plus
METABOLIC SYNDROMEHEALTHBOWELEMULSIFIERSADIPOSITYPHOSPHATIDYLCHOLINEINFLAMMATIONNUTRIENTSFEATURESDISEASES

Anthropometric

4-The Role of Quercetin, a Flavonoid in the Management of Pathogenesis Through Regulation of Oxidative Stress, Inflammation, and Biological Activities

By Alharbi, HOA (Alharbi, Hajed Obaid A.) [1] ; Alshebremi, M (Alshebremi, Mohammad) [1] ; Babiker, AY (Babiker, Ali Yousif) [1] ; Rahmani, AH (Rahmani, Arshad Husain) [1] (provided by Clarivate)
Source BIOMOLECULES Volume 15 Issue 1 DOI 10.3390/biom15010151 Article Number 151
Published JAN 2025 Indexed 2025-02-01 Document Type Review

Abstract

Quercetin, a flavonoid found in vegetables and fruits, has been extensively studied for its health benefits and disease management. Its role in the prevention of various pathogenesis has been well-documented, primarily through its ability to inhibit oxidative stress, inflammation, and enhance the endogenous antioxidant defense mechanisms. Electronic databases such as Google Scholar, Scopus, PubMed, Medline, and Web of Science were searched for information regarding quercetin and its role in various pathogeneses. The included literature comprised experimental studies, randomized controlled trials, and epidemiological studies related to quercetin, while editorials, case analyses, theses, and letters were excluded. It has been reported to have a wide range of health benefits including hepatoprotective, antidiabetic, anti-obesity, neuroprotective, cardioprotective, wound healing, antimicrobial, and immunomodulatory effects, achieved through the modulation of various biological activities. Additionally, numerous in vitro and in vivo studies have shown that quercetin's efficacies in cancer management involve inhibiting cell signaling pathways, such as inflammation, cell cycle, and angiogenesis, activating cell signaling pathways including tumor suppressor genes, and inducing apoptosis. This review aims to provide a comprehensive understanding of the health benefits of quercetin in various pathogeneses. Additionally, this review outlines the sources of quercetin, nanoformulations, and its applications in health management, along with key findings from important clinical trial studies. Limited clinical data regarding quercetin's safety and mechanism of action are available. It is important to conduct more clinical trials to gain a deeper understanding of the disease-preventive potential, mechanisms of action, safety, and optimal therapeutic dosages. Furthermore, more research based on nanoformulations should be performed to minimize/overcome the hindrance associated with bioavailability, rapid degradation, and toxicity.

Keywords
Author Keywords
quercetinoxidative stressinflammationcancerapoptosissynergistic effectspathogenesis

Keywords Plus
STIMULATED PLATELET ACTIVATIONPOLYCYSTIC-OVARY-SYNDROMEPANCREATIC BETA-CELLSONION PEEL EXTRACTMAJOR FOOD SOURCESNF-KAPPA-BDOUBLE-BLINDNATURAL-PRODUCTSINDUCED HEPATOTOXICITYANTIOXIDANT ACTIVITY

Anthropometric

5-The relationship between body roundness index and depression: A cross-sectional study using data from the National Health and Nutrition Examination Survey (NHANES) 2011-2018

By Zhang, L (Zhang, Lu) [1] ; Yin, JH (Yin, Jiahui) [2] ; Sun, HY (Sun, Haiyang) [3] ; Dong, WL (Dong, Wenliang) [4] ; Liu, ZH (Liu, Zihui) [4] ; Yang, JG (Yang, Jiguo) [5] ; Liu, YX (Liu, Yuanxiang) [3]
(provided by Clarivate) Source JOURNAL OF AFFECTIVE DISORDERS Volume 361 Page 17-23 DOI 10.1016/j.jad.2024.05.153 Published SEP 15 2024 Early Access JUN 2024 Indexed 2024-06-29 Document Type Article

Abstract

Background: Depression is linked to obesity. The body roundness index (BRI) provides a more accurate assessment of body and visceral fat levels than the body mass index or waist circumference. However, the association between BRI and depression is unclear. Therefore, we investigated this relationship using the National Health and Nutrition Examination Survey (NHANES) database. Methods: In this population-based cross-sectional study, data from 18,654 adults aged >= 20 years from the NHANES 2011-2018 were analyzed. Covariates, including age, gender, race/ethnicity, education level, marital status, poverty-income ratio, alcohol status, smoking status, hypertension, diabetes mellitus, cardiovascular disease, energy intake, physical activity, total cholesterol, and triglycerides were adjusted in multivariable logistic regression models. In addition, smooth curve fitting, subgroup analysis, and interaction testing were conducted. Results: After adjusting for covariates, BRI was positively correlated with depression. For each one-unit increase in BRI, the prevalence of depression increased by 8 % (odds ratio = 1.08, 95 % confidence interval = 1.05-1.10, P < 0.001). Limitations: As this was a cross-sectional study, we could not determine a causal relationship between BRI and depression. Patients with depression in this study were not clinically diagnosed with major depressive disorder. Conclusion: BRI levels were positively related to an increased prevalence of depression in American adults. BRI may serve as a simple anthropometric index to predict depression.

Keywords
Author Keywords
NHANESBody roundness indexDepressionCross-sectional studyAdult

Keywords Plus
QUESTIONNAIRE-9 PHQ-9OXIDATIVE STRESSOBESITYINFLAMMATIONOVERWEIGHT

Anthropometric

6-The association between the visceral to subcutaneous abdominal fat ratio and the risk of cardiovascular diseases: a systematic review

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By Emamat, H (Emamat, Hadi) [1] , [2] ; Jamshidi, A (Jamshidi, Ali) [1] ; Farhadi, A (Farhadi, Akram) [1] ; Ghalandari, H (Ghalandari, Hamid) [3] ; Ghasemi, M (Ghasemi, Mohadeseh) [4] ; Tangestani, H (Tangestani, Hadith) [2] **(provided by Clarivate) Source BMC PUBLIC HEALTH Volume 24 Issue 1 DOI 10.1186/s12889-024-19358-0 Article Number 1827 Published JUL 9 2024 Indexed 2024-07-24 Document Type Review**

Abstract

BackgroundCardiovascular diseases (CVDs) are the primary cause of mortality globally. The prevalence of obesity is rising worldwide; there seems to be a significant positive association between obesity and CVDs. The distribution of fat in the abdominal area in the form of visceral (VAT) or subcutaneous adipose tissue (SAT) affects the risk of CVDs. The aim of the present study was to conduct a systematic review of the available literature regarding the association between the VAT-to-SAT ratio and CVDs.MethodsA comprehensive search strategy was used to retrieve all human observational studies indexed in PubMed, Scopus and Google Scholar databases/search engines (from Jan 2000 up to Oct 2023). The VAT-to-SAT or SAT-to-VAT ratio was an independent variable and various cardiovascular diseases, including hypertension, atherosclerosis, coronary heart disease, cerebrovascular disease and heart failure, were considered as outcomes of interest.ResultsOut of 1173 initial studies, 910 papers were screened. Based on the inclusion criteria, 883 papers were excluded. Finally, 27 papers (18 cross-sectional and 9 cohort studies) published between 2010 and 2023 which met the inclusion criteria were reviewed.ConclusionsThe distribution of abdominal fat seems to be associated with the risk of CVDs; the majority of the evidence suggests that a higher abdominal VAT-to-SAT ratio is associated with the development of CVDs. Therefore, this ratio can be used as a prognostic indicator for CVDs.Trial registrationNot applicable.

Keywords

Author Keywords

ObesityAbdominal fatVisceral fatSubcutaneous fatVisceral to subcutaneous fat ratioCardiovascular diseases

Keywords Plus

ADIPOSE-TISSUEBODY-FATSUBCLINICAL ATHEROSCLEROSISCOMPUTED-TOMOGRAPHYGLOBAL BURDENOBESITYDEPOTSPREDICTORSEVERITYIMPACT

Anthropometric

7-Body Roundness Index and All-Cause Mortality Among US Adults

By Zhang, XQ (Zhang, Xiaoqian) [1] , [2] ; Ma, N (Ma, Ning) [1] , [3] ; Lin, QS (Lin, Qiushi) [4] ; Chen, KN (Chen, Kening) [5] , [6] ; Zheng, FJY (Zheng, Fangjieyi) [7] ; Wu, J (Wu, Jing) [7] ; Dong, XQ (Dong, Xiaoqun) [8] ; Niu, WQ (Niu, Wenquan) [7] **(provided by Clarivate) Source JAMA NETWORK OPEN Volume 7 Issue 6 DOI 10.1001/jamanetworkopen.2024.15051 Article Number e2415051 Published JUN 5 2024 Indexed 2024-07-26 Document Type Article**

Abstract

Importance Obesity, especially visceral obesity, is an established risk factor associated with all-cause mortality. However, the inadequacy of conventional anthropometric measures in assessing fat distribution necessitates a more comprehensive indicator, body roundness index (BRI), to decipher its population-based characteristics and potential association with mortality risk. Objective To evaluate the temporal trends of BRI among US noninstitutionalized civilian residents and explore its association with all-cause mortality. Design, Setting, and ParticipantsFor this cohort study, information on a nationally representative cohort of 32 995 US adults (age >= 20 years) was extracted from the National Health and Nutrition Examination Survey (NHANES) from 1999 to 2018 and NHANES Linked Mortality File, with mortality ascertained through December 31, 2019. Data were analyzed between April 1 and September 30, 2023. Exposures Biennial weighted percentage changes in BRI were calculated. Restricted cubic spline curve was used to determine optimal cutoff points for BRI. Main Outcome and MeasuresThe survival outcome was all-cause mortality. Mortality data were obtained from the Centers for Disease Control and Prevention website and linked to the NHANES database using the unique subject identifier. Weibull regression model was adopted to quantify the association between BRI and all-cause mortality. Results Among 32 995 US adults, the mean (SD) age was 46.74 (16.92) years, and 16 529 (50.10%) were women. Mean BRI increased gradually from 4.80 (95% CI, 4.62-4.97) to 5.62 (95% CI, 5.37-5.86) from 1999 through 2018, with a biennial change of 0.95% (95% CI, 0.80%-1.09%; P < .001), and this increasing trend was more obvious among women, elderly individuals, and individuals who identified as Mexican American. After a median (IQR) follow-up of 9.98 (5.33-14.33) years, 3452 deaths (10.46% of participants) from all causes occurred. There was a U-shaped association between BRI and all-cause mortality, with the risk increased by 25% (hazard ratio, 1.25; 95% CI, 1.05-1.47) for adults with BRI less than 3.4 and by 49% (hazard ratio, 1.49; 95% CI, 1.31-1.70) for those with BRI of 6.9 or greater compared with the middle quintile of BRI of 4.5 to 5.5 after full adjustment. Conclusions and Relevance This national cohort study found an increasing trend of BRI during nearly 20-year period among US adults, and importantly, a U-shaped association between BRI and all-cause mortality. These findings provide evidence for proposing BRI as a noninvasive screening tool for mortality risk estimation, an innovative concept that could be incorporated into public health practice pending consistent validation in other independent cohorts.

Keywords

Keywords Plus

ADIPOSE-TISSUEOBESITYFAT

Anthropometric

8-Burden of disease attributable to high body mass index: an analysis of data from the Global Burden of Disease Study 2021

By Zhou, XD (Zhou, Xiao-Dong) [1] ; Chen, QF (Chen, Qin-Fen) [2] ; Yang, W (Yang, Wah) [3] ; Zuluaga, M (Zuluaga, Mauricio) [4] ; Targher, G (Targher, Giovanni) [5] , [6] ; Byrne, CD (Byrne, Christopher D.) [7] , [8] ; Valenti, L (Valenti, Luca) [9] , [10] ; Luo, F (Luo, Fei) [11] ; Katsouras, CS (Katsouras, Christos S.) [12] , [13] ; Thaher, O (Thaher, Omar) [14] ; **(provided by Clarivate) Source ECLINICALMEDICINE Volume 76 DOI 10.1016/j.eclinm.2024.102848 Article Number 102848 Published OCT 2024 Indexed 2024-11-12 Document Type Article**

Abstract

Background Obesity represents a major global health challenge with important clinical implications. Despite its recognized importance, the global disease burden attributable to high body mass index (BMI) remains less well understood. Methods We systematically analyzed global deaths and disability-adjusted life years (DALYs) attributable to high BMI using the methodology and analytical approaches of the Global Burden of Disease Study (GBD) 2021. High BMI was defined as a BMI over 25 kg/m2 for individuals aged >= 20 years. The Socio-Demographic Index (SDI) was used as a composite measure to assess the level of socio-economic development across different regions. Subgroup analyses considered age, sex, year, geographical location, and SDI. Findings From 1990 to 2021, the global deaths and DALYs attributable to high BMI increased more than 2.5-fold for females and males. However, the age-standardized death rates remained stable for females and increased by 15.0% for males. Similarly, the age-standardized DALY rates increased by 21.7% for females and 31.2% for males. In 2021, the six leading causes of high BMI-attributable DALYs were diabetes mellitus, ischemic heart disease, hypertensive heart disease, chronic kidney disease, low back pain and stroke. From 1990 to 2021, low-middle SDI countries exhibited the highest annual percentage changes in age-standardized DALY rates, whereas high SDI countries showed the lowest. Interpretation The worldwide health burden attributable to high BMI has grown significantly between 1990 and 2021. The increasing global rates of high BMI and the associated disease burden highlight the urgent need for regular surveillance and monitoring of BMI. Funding National Natural Science Foundation of China and National Key R&D Program of China.

Keywords
Author Keywords
ObesityBody mass indexGlobal Burden of Disease StudyMetabolic risk

Keywords Plus
CHILDHOOD OBESITYCONSUMPTIONOUTCOMESTIME

Anthropometric

9-Joint association of the inflammatory marker and cardiovascular-kidney-metabolic syndrome stages with all-cause and cardiovascular disease mortality: a national prospective study

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By Cao, YF (Cao, Yifei) [1] ; Wang, WF (Wang, Wenfeng) [1] , [2] , [3] , [4] ; Xie, SD (Xie, Shidong) [1] , [2] , [3] , [4] ; Xu, YF (Xu, Yanfang) [1] , [2] , [3] , [4] , [5] ; Lin, ZS (Lin, Zishan) [1] , [2] , [3] , [4] , [5] **(provided by Clarivate) Source BMC PUBLIC HEALTH Volume 25 Issue 1 DOI 10.1186/s12889-024-21131-2 Article Number 10 Published JAN 2 2025 Indexed 2025-01-11 Document Type Article**

Abstract

Background Cardiovascular-kidney-metabolic (CKM) syndrome and systemic inflammation significantly contribute to mortality. However, the joint associations of CKM stages and systemic inflammation with all-cause and cardiovascular disease (CVD) mortality remain unclear. This study aimed to evaluate the independent and joint associations of CKM stages and systemic inflammation with all-cause and CVD mortality in a representative cohort of United States adults. Methods We analyzed data from 29,459 adults aged >= 20 years from the National Health and Nutrition Examination Survey (1999-2018). CKM stages were classified based on metabolic risk factors, CVD, and chronic kidney disease. Systemic inflammation was assessed using multiple indicators, and time-dependent ROC analysis identified the systemic inflammatory response index (SIRI) as the most effective inflammatory marker. The associations of CKM stages and SIRI with mortality were evaluated. Results Over a median follow-up of 109 months, 5,583 all-cause deaths and 1,843 CVD-specific deaths occurred. Both advanced CKM stages and elevated SIRI were associated with higher risks of all-cause and CVD mortality. Individuals with advanced CKM stages (Stages 3-4) and elevated SIRI (> 0.81) had the highest risks of all-cause (HR: 1.84, 95% CI: 1.65-2.05) and CVD mortality (HR: 2.50, 95% CI: 2.00-3.12). These associations were particularly pronounced in adults aged < 60 years (P for interaction < 0.001). Conclusions Advanced CKM stages and elevated SIRI are associated with increased risks of all-cause and CVD mortality, particularly in younger adults. These findings highlight the significance of targeted interventions to address systemic inflammation and CKM progression, potentially improving long-term outcomes in high-risk populations.

Keywords
Author Keywords
Cardiovascular-kidney-metabolic syndromeSystemic inflammatory response indexCardiovascular diseaseObesityChronic kidney disease

Keywords Plus
RESPONSE INDEXRISKONSET

Anthropometric

10-Global, regional, and national progress towards the 2030 global nutrition targets and forecasts to 2050: a systematic analysis for the Global Burden of Disease Study 2021

By Arndt, MB (Arndt, Michael Benjamin) ; Abate, YH (Abate, Yohannes Habtegiorgis) ; Abbasi-Kangevari, M (Abbasi-Kangevari, Mohsen) ; ElHafeez, SA (ElHafeez, Samar Abd) ; Abdelmasseh, M (Abdelmasseh, Michael) ; Abd-Elsalam, S (Abd-Elsalam, Sherief) ; Abdulah, DM (Abdulah, Deldar Morad) ; Abdulkader, RS (Abdulkader, Rizwan Suliankatchi) ; Abidi, H (Abidi, Hassan) ; Abiodun, O (Abiodun, Olumide) ; Group Author Global Nutr Target Collaborators (Global Nutr Target Collaborators) (provided by Clarivate) **Source LANCET Volume 404 Issue 10471 Page 2543-2583 DOI 10.1016/S0140-6736(24)01821-X Published DEC 21 2024 Early Access DEC 2024 Indexed 2025-02-09 Document Type Article**

Abstract

Background The six global nutrition targets (GNTs) related to low birthweight, exclusive breastfeeding, child growth (ie, wasting, stunting, and overweight), and anaemia among females of reproductive age were chosen by the World Health Assembly in 2012 as key indicators of maternal and child health, but there has yet to be a comprehensive report on progress for the period 2012 to 2021. We aimed to evaluate levels, trends, and observed-to-expected progress in prevalence and attributable burden from 2012 to 2021, with prevalence projections to 2050, in 204 countries and territories.

Methods The prevalence and attributable burden of each target indicator were estimated by age group, sex, and year in 204 countries and territories from 2012 to 2021 in the Global Burden of Diseases, Injuries, and Risk Factors Study (GBD) 2021, the most comprehensive assessment of causes of death, disability, and risk factors to date. Country-specific relative performance to date was evaluated with a Bayesian meta-regression model that compares prevalence to expected values based on Socio-demographic Index (SDI), a composite indicator of societal development status. Target progress was forecasted from 2021 up to 2050 by modelling past trends with meta-regression using a combination of key quantities and then extrapolating future projections of those quantities.

Findings In 2021, a few countries had already met some of the GNTs: five for exclusive breastfeeding, four for stunting, 96 for child wasting, and three for child overweight, and none met the target for low birthweight or anaemia in females of reproductive age. Since 2012, the annualised rates of change (ARC) in the prevalence of child overweight increased in 201 countries and territories and ARC in the prevalence of anaemia in females of reproductive age decreased considerably in 26 countries. Between 2012 and 2021, SDI was strongly associated with indicator prevalence, apart from exclusive breastfeeding (vertical bar r-vertical bar=0.46-0.86). Many countries in sub-Saharan Africa had a decrease in the prevalence of multiple indicators that was more rapid than expected on the basis of SDI (the differences between observed and expected ARCs for child stunting and wasting were -0.5% and -1.3%, respectively). The ARC in the attributable burden of low birthweight, child stunting, and child wasting decreased faster than the ARC of the prevalence for each in most low-income and middle-income countries. In 2030, we project that 94 countries will meet one of the six targets, 21 countries will meet two targets, and 89 countries will not meet any targets. We project that seven countries will meet the target for exclusive breastfeeding, 28 for

child stunting, and 101 for child wasting, and no countries will meet the targets for low birthweight, child overweight, and anaemia. In 2050, we project that seven additional countries will meet the target for exclusive breastfeeding, five for low birthweight, 96 for child stunting, nine for child wasting, and one for child overweight, and no countries are projected to meet the anaemia target.
Interpretation Based on current levels and past trends, few GNTs will be met by 2030. Major reductions in attributable burden for exclusive breastfeeding and anthropometric indicators should be recognised as huge scientific and policy successes, but the comparative lack of progress in reducing the prevalence of each, along with stagnant anaemia in women of reproductive age and widespread increases in child overweight, suggests a tenuous status quo. Continued investment in preventive and treatment efforts for acute childhood illness is crucial to prevent backsliding. Parallel development of effective treatments, along with commitment to multisectoral, long-term policies to address the determinants and causes of suboptimal nutrition, are sorely needed to gain ground.

Keywords

Keywords Plus

MIDDLE-INCOME COUNTRIESBREAST-FEEDING PRACTICESBIRTH-WEIGHT INFANTSFOR-GESTATIONAL-AGECHILDHOOD OBESITYSTUNTING REDUCTIONREPRODUCTIVE AGERISKOVERWEIGHTANEMIA

Anthropometric

11-Association between serum vitamin D level and cardiovascular disease in Chinese patients with type 2 diabetes mellitus: a cross-sectional study

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By Zhang, NJ (Zhang, Ningjie) [1] ; Wang, Y (Wang, Yan) [2] ; Li, W (Li, Wei) [3] ; Wang, YJ (Wang, Yongjun) [1] ; Zhang, H (Zhang, Hui) [4] ; Xu, DN (Xu, Danning) [5] ; Chen, RH (Chen, Ruohong) [5] ; Tang, LL (Tang, Lingli) [5] ; Tang, HN (Tang, Haoneng) [5] (provided by Clarivate) **Source SCIENTIFIC REPORTS Volume 15 Issue 1 DOI 10.1038/s41598-025-90785-8 Article Number 6454 Published FEB 22 2025 Indexed 2025-03-05 Document Type Article**

Abstract

The relationship between 25-hydroxyvitamin D (25(OH)D) status and cardiovascular disease (CVD) in the diabetes population still needs to be clarified. This study aimed to explore the association of 25(OH)D with CVD and cardiometabolic risk factors in Chinese population with type 2 diabetes mellitus (T2DM). This cross-sectional study was performed with 1378 hospitalized patients with T2DM. Participants were classified into three groups according to the serum 25(OH)D levels: vitamin D adequate, vitamin D insufficiency and vitamin D deficient. Multivariate logistic regression analysis, stratified analysis and interaction analysis were performed to determine the relationship between serum 25(OH)D levels and CVD outcome. After adjusting for confounders, serum 25(OH)D levels were significantly negatively associated with cardiovascular disease in type 2 diabetic patients [OR: 0.97 (0.94, 0.99), p = 0.0131]. Taking the vitamin D-sufficient group (>= 20 ng/mL) as a reference, the vitamin D-deficiency group (< 12 ng/mL) was associated with a significantly higher risk of cardiovascular disease, with a 1.25-fold increased risk after adjusting for all potential confounders [OR: 2.25 (1.33, 3.79), p = 0.0023]. Stratification analysis showed that the association between vitamin D deficiency and increased risk of cardiovascular disease was particularly significant in women [OR: 4.32 (1.54, 12.12), p = 0.0055], older adults [OR: 4.14 (1.10, 15.56), p = 0.0355], normal-weight [OR: 4.09 (1.51, 11.10), p = 0.0056] and obese subjects [OR: 3.66 (1.03, 13.05), p = 0.0453]. Vitamin D deficiency was significantly associated with an increased risk of overweight/obesity [OR: 1.57 (1.10, 2.24), p = 0.0134], hypertension [OR: 1.81 (1.30, 2.51), p = 0.0004], hypertriglyceridemia [OR: 1.56 (1.12, 2.16), p = 0.0078] and reduced HDL-C [OR: 1.67 (1.19, 2.35), p = 0.0033]. Serum 25(OH)D levels were significantly negatively associated with CVD in T2DM patients and vitamin D deficiency was significantly associated with an increased risk of overweight/obesity, hypertension and dyslipidemia.

Keywords

Author Keywords

25-hydroxyvitamin DCardiovascular diseaseType 2 diabetes mellitusCardiometabolic risks

Keywords Plus

DOSE-RESPONSE METAANALYSISCAUSE-SPECIFIC MORTALITYALL-CAUSE MORTALITY25-HYDROXYVITAMIN DRISKINDIVIDUALSPOPULATIONGLUCOSEOBESITYADULTS

Anthropometric

12-National-level and state-level prevalence of overweight and obesity among children, adolescents, and adults in the USA, 1990-2021, and forecasts up to 2050

By Ng, M (Ng, Marie) ; Dai, XC (Dai, Xiaochen) ; Cogen, RM (Cogen, Rebecca M.) ; Abdelmasseh, M (Abdelmasseh, Michael) ; Abdollahi, A (Abdollahi, Arash) ; Abdullahi, A (Abdullahi, Auwal) ; Aboagye, RG (Aboagye, Richard Gyan) ; Abukhadijah, HJ (Abukhadijah, Hana J.) ; Adeyeoluwa, TE (Adeyeoluwa, Temitayo Esther) ; Afolabi, AA (Afolabi, Aanuoluwapo Adeyimika) ; Group Author GBD 2021 US Obesity Forecasting Collaborators (GBD 2021 US Obesity Forecasting Collaborators)
(provided by Clarivate) Source LANCET Volume 404 Issue 10469 Page 2278-2298 DOI 10.1016/S0140-6736(24)01548-4 Published DEC 7 2024 Early Access DEC 2024 Indexed 2025-01-25 Document Type Article

Abstract

Background Over the past several decades, the overweight and obesity epidemic in the USA has resulted in a significant health and economic burden. Understanding current trends and future trajectories at both national and state levels is crucial for assessing the success of existing interventions and informing future health policy changes. We estimated the prevalence of overweight and obesity from 1990 to 2021 with forecasts to 2050 for children and adolescents (aged 5-24 years) and adults (aged >= 25 years) at the national level. Additionally, we derived state-specific estimates and projections for older adolescents (aged 15-24 years) and adults for all 50 states and Washington, DC.

Methods In this analysis, self-reported and measured anthropometric data were extracted from 134 unique sources, which included all major national surveillance survey data. Adjustments were made to correct for self-reporting bias. For individuals older than 18 years, overweight was defined as having a BMI of 25 kg/m(2) to less than 30 kg/m(2) and obesity was defined as a BMI of 30 kg/m(2) or higher, and for individuals younger than 18 years definitions were based on International Obesity Task Force criteria. Historical trends of overweight and obesity prevalence from 1990 to 2021 were estimated using spatiotemporal Gaussian process regression models. A generalised ensemble modelling approach was then used to derive projected estimates up to 2050, assuming continuation of past trends and patterns. All estimates were calculated by age and sex at the national level, with estimates for older adolescents (aged 15-24 years) and adults aged (>= 25 years) also calculated for 50 states and Washington, DC. 95% uncertainty intervals (UIs) were derived from the 2 center dot 5th and 97 center dot 5th percentiles of the posterior distributions of the respective estimates.

Findings In 2021, an estimated 15 center dot 1 million (95% UI 13 center dot 5-16 center dot 8) children and young adolescents (aged 5-14 years), 21 center dot 4 million (20 center dot 2-22 center dot 6) older adolescents (aged 15-24 years), and 172 million (169-174) adults (aged >= 25 years) had overweight or obesity in the USA. Texas had the highest age-standardised prevalence of overweight or obesity for male adolescents (aged 15-24 years), at 52 center dot 4% (47 center dot 4-57 center dot 6), whereas Mississippi had the highest for female adolescents (aged 15-24 years), at 63 center dot 0% (57 center dot 0-68 center dot 5). Among adults, the prevalence of overweight or obesity was highest in North Dakota for males, estimated at 80 center dot 6% (78 center dot 5-82 center dot 6), and in Mississippi for females at 79 center dot 9% (77 center dot 8-81 center dot 8). The prevalence of obesity has outpaced the increase in

overweight over time, especially among adolescents. Between 1990 and 2021, the percentage change in the age-standardised prevalence of obesity increased by 158 center dot 4% (123 center dot 9-197 center dot 4) among male adolescents and 185 center dot 9% (139 center dot 4-237 center dot 1) among female adolescents (15-24 years). For adults, the percentage change in prevalence of obesity was 123 center dot 6% (112 center dot 4-136 center dot 4) in males and 99 center dot 9% (88 center dot 8-111 center dot 1) in females. Forecast results suggest that if past trends and patterns continue, an additional 3 center dot 33 million children and young adolescents (aged 5-14 years), 3 center dot 41 million older adolescents (aged 15-24 years), and 41 center dot 4 million adults (aged >= 25 years) will have overweight or obesity by 2050. By 2050, the total number of children and adolescents with overweight and obesity will reach 43 center dot 1 million (37 center dot 2-47 center dot 4) and the total number of adults with overweight and obesity will reach 213 million (202-221). In 2050, in most states, a projected one in three adolescents (aged 15-24 years) and two in three adults (>= 25 years) will have obesity. Although southern states, such as Oklahoma, Mississippi, Alabama, Arkansas, West Virginia, and Kentucky, are forecast to continue to have a high prevalence of obesity, the highest percentage changes from 2021 are projected in states such as Utah for adolescents and Colorado for adults.
Interpretation Existing policies have failed to address overweight and obesity. Without major reform, the forecasted trends will be devastating at the individual and population level, and the associated disease burden and economic costs will continue to escalate. Stronger governance is needed to support and implement a multifaceted whole-system approach to disrupt the structural drivers of overweight and obesity at both national and local levels. Although clinical innovations should be leveraged to treat and manage existing obesity equitably, population-level prevention remains central to any intervention strategies, particularly for children and adolescents.

Keywords

Keywords Plus

BODY-MASS INDEXUNITED-STATESCHILDHOOD OBESITYWAIST CIRCUMFERENCEMATERNAL OBESITYYOUNG ADULTHOODRISK-FACTORSFOOD POLICYTRENDSHEALTH