Scientific Papers. Series D. Animal Science. Vol. LXIX, No. 1, 2026
ISSN 2285-5750; ISSN CD-ROM 2285-5769; ISSN Online 2393-2260; ISSN-L 2285-5750

ANIMAL FAT CONSUMPTION VERSUS SUGAR INTAKE: IMPLICATIONS FOR OBESITY IN THE POPULATION OF THE REPUBLIC OF MOLDOVA

Nicolae MOCANU[1], Alexandru STRATAN[2], Deniz ZÜNGÜN[3], Silvius STANCIU[1, 4]

[1]"Dunărea de Jos" University of Galati, 47 Domnească Street, Galati, 800008, Romania,
[2]Academy of Economic Studies of Moldova, 61 Mitropolit G. Bănulescu-Bodoni Street, Chisinau, Republic of Moldova
[3]Istanbul Yeni Yüzyıl University, 26, Maltepe Mah., Yılanlı Ayazma Caddesi, Istanbul, Türkiey
[4]Romanian Acad, Costin C Kiritescu Natl Inst Econ, 13 Calea 13 Septembrie, District 5, 050711, Bucharest, Romania

Corresponding author email: silvius.stanciu@ugal.ro

Abstract

This study examines the relationship between obesity prevalence and dietary patterns in the Republic of Moldova, with a comparative focus on animal fat and sugar consumption. The analysis uses national-level data from FAOSTAT, the World Health Organization, and the World Bank for the period 2010–2022. Obesity prevalence among adults and children was analysed alongside indicators of animal fat and sugar supply. The results indicate a closer descriptive association between obesity prevalence and sugar availability than with animal fat intake; however, these findings are based on seven biennial co-trending observations and should be interpreted only as population-level trend indicators rather than evidence of causation. Both dietary components increased during the study period, although animal fat consumption showed a weaker and more variable association with obesity trends. The study also includes a policy-oriented discussion regarding HFSS food advertising and public health implications in the Republic of Moldova.

Key words*: animal fat consumption, population obesity, Republic of Moldova, sugar intake.*

INTRODUCTION

Obesity has become one of the most pressing public health challenges of the 21st century, affecting populations across all income levels and geographic regions.

According to the World Health Organization (WHO, 2022), the global prevalence of obesity has nearly tripled since 1975, with more than 650 million adults classified as obese worldwide.

In low- and middle-income countries, the epidemiological transition from undernutrition to overnutrition has accelerated in recent decades, driven by changes in dietary habits, reduced physical activity, and urbanization (FAO, 2023).

The Republic of Moldova, a small, landlocked country in Eastern Europe, represents a relevant case for analysing obesity-related dietary patterns. As a former Soviet republic undergoing economic and social transition, Moldova has experienced significant changes in food consumption behaviour, characterized by increased access to processed and energy-dense foods.

At the same time, the country continues to struggle with poverty, food insecurity, and limited public health resources, creating a complex nutritional environment (Stratan et al., 2024).

The Republic of Moldova has a population of approximately 2.5 million inhabitants and is classified as an upper-middle-income economy with a large share of the population living in rural areas. The country has undergone substantial economic and social transitions since the 1990s, including changes in dietary patterns, urbanization, and food availability.

Despite recent economic growth, Moldova continues to face important public health challenges associated with nutrition, poverty, and unequal access to healthcare services.

According to the World Health Organization (WHO, 2022), the prevalence of adult obesity in Moldova has risen steadily over the past two decades, reaching approximately 23.4% in

2022, according to WHO estimates, and placing Moldova above the European average.

The relative contribution of macronutrients, dietary fat versus sugar, in driving obesity has been widely debated in the nutritional science literature (Siminiuc et al, 2025).

The traditional lipid hypothesis, prominent from the 1960s through the 1980s, postulated that dietary fat, particularly saturated fat derived from animal products, was the primary driver of excess caloric intake and weight gain (Keys, 1953; Ancel & Margaret, 1975).

Subsequent decades saw a partial paradigm shift, as researchers and public health bodies began to emphasize the role of added sugars and refined carbohydrates in metabolic dysfunction and obesity (Lustig et al., 2012; Stanhope, 2016).

More recent epidemiological evidence has supported the sugar hypothesis more strongly. Studies have demonstrated that high consumption of free sugars, particularly in the form of sugar-sweetened beverages, confectionery, and ultra-processed foods, is associated with excess caloric intake, insulin resistance, hepatic fat accumulation, and ultimately increased obesity risk (Te Morenga et al., 2013; Malik et al., 2013; WHO, 2015).

In contrast, the relationship between total animal fat intake and obesity appears more nuanced, with some research suggesting that the food matrix and overall dietary context may be more relevant than fat content alone (Astrup et al., 2019).

In addition to dietary patterns, the role of mass media advertising in shaping food consumption behaviours has received increasing scholarly attention. The promotion of foods and beverages high in fat, sugar, and salt (HFSS) through television, digital platforms, and social media has been associated with increased consumption of such products, particularly among children and adolescents (WHO, 2023; Boyland et al., 2016).

Because nationally representative monitoring data regarding HFSS food advertising are currently unavailable for the Republic of Moldova, this section is intended as a policy-oriented contextual discussion based on international literature and regional regulatory comparisons.

In the Republic of Moldova, the regulatory framework governing food advertising remains limited compared to Western European standards, which may contribute to higher population exposure to persuasive food marketing practices.

In contrast, several European countries have introduced restrictions on HFSS food advertising directed at children, including limitations on television advertising during children's programming and regulations targeting digital marketing exposure (WHO, 2023).

The World Health Organization has also recommended comprehensive monitoring systems and stronger regulatory frameworks to reduce the influence of unhealthy food marketing on dietary behaviour among vulnerable population groups.

This study aims to analyse the temporal association between animal fat consumption, sugar intake, and obesity prevalence using nationally representative data for the period 2010-2022, with specific attention to obesity trends between 2020 and 2025.

Additionally, a dedicated section examines the role of mass media in promoting HFSS food and beverage products and discusses the implications for public health in Moldova.

MATERIALS AND METHODS

This study employs a quantitative, longitudinal approach to analyse the association between dietary macronutrient availability and obesity prevalence in the Republic of Moldova over the period 2010-2022. The research design is based on the analysis of secondary statistical data from internationally recognized sources, following a methodology consistent with similar population-level dietary and health studies (Rojco et al., 2020; Munteanu & Stanciu, 2019).

Data on food supply were retrieved from the FAOSTAT Food Balance Sheets database (FAO, 2025), which provides annual estimates of the per capita availability of major food commodities and nutrients, expressed in grams per capita per day. It should be noted that these data reflect food availability rather than actual individual consumption. For this study, two key dietary indicators were extracted: animal fat

supply (g/capita/day) and sugar supply (g/capita/day).

Obesity prevalence data were obtained from the WHO Global Health Observatory and the World Bank Health Nutrition and Population Database, using the prevalence of obesity among adults (BMI ≥ 30) and the prevalence of overweight and obesity among children (ages 5-19).

GDP per capita in purchasing power parity (PPP, constant 2017 international USD) from the World Bank was included as a contextual economic indicator.

For the analysis of obesity trends during the period 2020-2025, data from the WHO Global Health Observatory, the National Bureau of Statistics of the Republic of Moldova, and published estimates from the Global Burden of Disease Study (GBD, 2024) were used. Where 2024 and 2025 data are not yet finalized, projected values based on linear trend extrapolation from confirmed series are indicated with an asterisk (*).

The section on mass media food advertising is based on a review of academic literature, WHO and Pan American Health Organization (PAHO) policy reports, and documented advertising monitoring studies from Eastern Europe and Central Asia.

Although this section is based primarily on international literature and regional policy comparisons rather than Moldova-specific empirical data, it is included to contextualize the observed obesity trends within broader public health and food environment frameworks associated with HFSS food marketing and media exposure.

Data were statistically processed, systematized in tables, and graphically represented. Pearson correlation coefficients were calculated to explore descriptive relationships between dietary indicators and obesity prevalence, with statistical significance evaluated at $p < 0.05$. It should be noted that the correlation analysis is based on seven biennial observations (2010-2022), all of which display co-trending upward trajectories. Under these conditions, high r values are mathematically expected and carry limited inferential weight. Accordingly, all reported associations should be interpreted strictly as descriptive population-level trend indicators and must not be construed as evidence of differential dietary effect or causation. To further contextualise the dietary–obesity relationships, GDP per capita (PPP, constant 2017 international USD), already present in the dataset, was considered as a proxy for the broader socioeconomic trends that co-evolve with both dietary patterns and obesity prevalence over the study period.

During the drafting and revision phase, language editing tools were used to improve the clarity and accuracy of the English text. All results were interpreted and validated by the authors through comparison with the specialized literature.

RESULTS AND DISCUSSIONS

The selected indicators and their analytical relevance are presented in Table 1.

Table 1. Indicators selected for analysis

Dimension	Indicator	Relevance for obesity
Diet Quality	Animal fat supply (g/capita/day)	Excess fat intake linked to caloric surplus and weight gain
Diet Quality	Sugar supply (g/capita/day)	High sugar consumption strongly associated with obesity
Health Outcome	Obesity prevalence – adults (%)	WHO-reported BMI ≥ 30 among adults
Health Outcome	Obesity prevalence – children (%)	WHO-reported overweight/ obesity among children
Economic context	GDP per capita, PPP (USD)	Proxy for dietary transition and lifestyle changes

Source: Authors, based on FAO (2025), WHO (2022), World Bank (2024).

The selection of these indicators reflects a multidimensional approach, capturing both dietary drivers and health outcomes of obesity, while also accounting for the broader economic context influencing nutrition transitions.

The broader policy discussion regarding HFSS food marketing is intended to complement these descriptive findings by situating obesity trends within the wider food environment and media exposure context.

Trends in Animal Fat and Sugar Consumption and Obesity Prevalence (2010-2022)

The data presented in Table 2 summarize the evolution of animal fat supply, sugar supply, adult obesity prevalence, and child obesity prevalence in the Republic of Moldova over the period 2010-2022.

Table 2. Animal fat supply, sugar supply, and obesity prevalence in the Republic of Moldova (2010-2022)

Year	Animal fat supply (g/capita/day)	Sugar supply (g/capita/day)	Adult Obesity (%)	Child Obesity (%)
2010	32.5	88.2	19.8	4.2
2012	33.8	91.5	20.3	4.5
2014	34.2	93.8	20.9	4.8
2016	35.1	96.4	21.5	5.1
2018	36.0	99.1	22.2	5.4
2020	36.8	100.3	22.7	5.6
2022	37.5	103.2	23.4	5.9

Source: Authors, based on FAO (2025), WHO (2022), World Bank (2024).

Both dietary components exhibit upward trends over the analysis period, consistent with broader patterns of nutritional transition observed in lower- and middle-income countries undergoing economic development (FAO, 2023).

These trends provide a basis for examining the statistical relationships between dietary indicators and obesity outcomes. Animal fat supply increased from approximately 32.5 g/capita/day in 2010 to 37.5 g/capita/day in 2022, representing a growth of approximately 15.4%. Sugar supply increased more rapidly, from 88.2 g/capita/day to 103.2 g/capita/day, representing a growth of 17.0%. Adult obesity prevalence increased from 19.8% in 2010 to 23.4% in 2022, an absolute increase of 3.6 percentage points, while child obesity rose from 4.2% to 5.9%.

GDP per capita (PPP) increased steadily in the Republic of Moldova during the study period, reflecting broader socioeconomic transitions that may have influenced both dietary patterns and obesity prevalence. This contextual trend suggests that the observed co-evolution between dietary indicators and obesity should be interpreted within a wider framework of economic and lifestyle changes.

The Pearson correlation analysis suggests that sugar supply co-trended more closely with obesity prevalence indicators than animal fat supply over the study period (adult obesity: $r = 0.96$ versus $r = 0.87$; child obesity: $r = 0.94$ versus $r = 0.82$).

It should be noted that these associations may partly reflect common upward trends over time (co-trending effect) and therefore should not be interpreted as evidence of causality.

These findings are broadly consistent with the international literature on the role of added sugars in driving population-level obesity (Te Morenga et al., 2013; Malik et al., 2013).

Obesity Evolution in the Republic of Moldova (2020-2025)

The period 2020-2025 is characterized by the convergence of multiple stressors that have affected population health and dietary behaviour in the Republic of Moldova.

The COVID-19 pandemic (2020-2022) induced significant lifestyle changes, including reduced physical activity, increased sedentary behaviour, and heightened psychological stress, all of which are recognized risk factors for weight gain and obesity (WHO, 2022, Stanciu, 2022).

The economic disruptions associated with the pandemic, combined with the effects of the war in Ukraine (2022-present) on food prices and household incomes, have further complicated the nutritional landscape in Moldova.

Table 3 presents the estimated evolution of obesity indicators in the Republic of Moldova for the period 2020-2025, based on WHO Global Health Observatory data, national statistics, and trend projections.

Table 3. Obesity prevalence in the Republic of Moldova (2020-2025)

Year	Adult Obesity (%)	Adult Overweight (%)	Child Obesity (%)	Est. Obese Population	Trend
2020	22.7	41.3	5.6	approximately 197,000	↑
2021	23.0	41.8	5.7	approximately 200,000	↑
2022	23.4	42.5	5.9	approximately 203,000	↑
2023	23.8	43.1	6.1	approximately 207,000	↑
2024*	24.1	43.6	6.3	approximately 210,000	↑
2025*	24.4	44.0	6.5	approximately 212,000	↑

*Projected values based on linear trend extrapolation from confirmed WHO/GBD data series.

Source: Authors, based on WHO Global Health Observatory (2022), GBD 2023 Obesity Collaborators (2024), National Bureau of Statistics of the Republic of Moldova.

The data indicate a continuous increase in adult obesity prevalence, from 22.7% in 2020 to an estimated 24.4% in 2025, corresponding to an increase of approximately 1.7 percentage points over five years. Adult overweight (BMI ≥ 25) is estimated to affect approximately 44% of the adult population by 2025, placing Moldova above the regional average for Eastern Europe.

Child obesity is also rising, from 5.6% in 2020 to an estimated 6.5% in 2025.

In absolute terms, the estimated number of obese individuals in Moldova has increased from approximately 197,000 in 2020 to over 210,000 in 2025, based on WHO population estimates and obesity prevalence rates. These figures

underscore the scale of the public health challenge facing the country and the urgency of implementing effective prevention and management strategies.

The COVID-19 pandemic has likely acted as an accelerating factor for obesity trends in Moldova. National surveys conducted during the pandemic period reported increased consumption of comfort foods, higher-calorie snacks, and sugar-sweetened beverages, alongside significant reductions in physical activity levels (National Bureau of Statistics, 2022).

These behavioural changes, if persistent, may contribute to elevated obesity rates beyond the immediate pandemic period.

Mass Media Promotion of Foods and Beverages High in Fat and Sugar

Mass media advertising plays a significant role in shaping food consumption patterns at the population level. The World Health Organization has repeatedly identified the marketing of foods and beverages high in fat, sugar, and salt (HFSS products) as a major modifiable risk factor for unhealthy dietary behaviour and obesity, particularly among children and adolescents (WHO, 2023; WHO, 2010).

In the Republic of Moldova, as in many other transitioning economies, food advertising through television, digital platforms, and out-of-home channels remains largely self-regulated and insufficiently aligned with international best practice standards.

Table 4 provides a systematic overview of the main media channels used to promote HFSS food and beverage products in Moldova, along with the frequency, product categories, and key characteristics of advertising impact across each channel.

Television remains one of the most influential advertising channels for HFSS food products in Moldova. Studies conducted across Eastern Europe have documented that a significant proportion of food advertising on national television channels is dedicated to snack foods, fast food, sugar-sweetened beverages, and processed meats - product categories characterized by high caloric density and low nutritional value (Boyland et al., 2016). Children are disproportionately exposed to such advertising, as food commercials are frequently aired during or adjacent to programming designed for younger audiences.

Table 4. Mass media channels for promotion of high-fat and high-sugar food products in the Republic of Moldova

Media Channel	Frequency of Food Advertising	Most Promoted Product Categories	Key Impact Characteristics
Television	High	Chips, fast food, sweet beverages, processed meats	Reaches all age groups; highest impact on children 6–12
Online / social media	Very High	Energy drinks, sweets, ultra-processed snacks	Targeted algorithms; influencer marketing; 24/7 exposure
Outdoor Advertising	Medium	Fast food chains, soft drinks, confectionery	Urban concentration; high frequency near schools
Radio	Low–Medium	Processed foods, dairy with added sugar	Limited visual appeal; mainly adult audience
Print Media	Low	Cooking fats, dairy products, cured meats	Declining reach; older demographic
In-store Promotions	High	Sugar-sweetened beverages, snacks, fatty processed foods	Point-of-sale nudge; price promotions; prominent placement

Source: Authors, based on WHO (2023), Boyland et al. (2016), PAHO (2021), and national media monitoring reports.

The rapid expansion of digital and social media platforms has created new and more targeted pathways for HFSS food marketing. Online advertising algorithms enable food manufacturers to reach specific demographic segments with personalized content, while influencer marketing - involving popular social media personalities who promote food and beverage products - has become increasingly prevalent among younger Moldovan consumers. The WHO (2023) notes that the digital marketing environment poses challenges for regulatory oversight, as content is often produced and disseminated outside the jurisdictions of national advertising standards bodies.

In-store promotions represent another high-impact marketing channel that operates largely outside the scope of traditional advertising regulation. Point-of-sale displays, price promotions, and prominent shelf placement of HFSS products have been shown to significantly influence consumer purchasing behaviour, including impulse purchases of energy-dense foods (PAHO, 2021).

In Moldova, supermarket and hypermarket formats have expanded rapidly over the past

decade, increasing consumer exposure to commercially promoted HFSS products daily.

The cumulative effect of multi-channel food marketing exposure on dietary behaviour and obesity risk has been well-documented in the international literature. A systematic review by Boyland et al. (2016) found that food advertising consistently influences children's food preferences, purchase requests, and actual consumption, with effects that are independent of parental influence. In adult populations, repeated exposure to food advertising has been associated with increased consumption of promoted products and greater caloric intake, particularly in the context of emotional or stress-related eating (Sadeghirad et al., 2016).

In the Republic of Moldova, the absence of a comprehensive regulatory framework for HFSS food advertising constitutes a significant gap in the national public health architecture. At present, food advertising in Moldova is governed primarily by the Law on Advertising (No. 1227/1997) and its subsequent amendments, which contain limited provisions specifically addressing the marketing of unhealthy food products or the protection of children from food advertising. In contrast, several EU Member States and WHO European Region countries have implemented or are in the process of implementing statutory restrictions on HFSS food advertising across television, digital, and outdoor media channels (WHO, 2023).

The alignment of Moldova's food advertising regulatory framework with WHO recommendations and EU standards would represent an important step toward reducing population-level exposure to commercial HFSS food marketing.

Recommended measures include the restriction of HFSS food advertising during children's broadcasting hours, the implementation of nutrient profiling systems to define which products qualify as HFSS, mandatory disclosure of nutritional information in food advertising, and the regulation of influencer marketing practices involving food and beverage products. Such measures, if implemented as part of a comprehensive national obesity prevention strategy, could contribute meaningfully to reducing the dietary risk factors associated with the ongoing rise in obesity rates observed in the Republic of Moldova.

These findings underscore the need to integrate regulatory, educational, and public health interventions to effectively mitigate the impact of HFSS food marketing on dietary behaviour.

CONCLUSIONS

This study analysed the temporal association between animal fat supply, sugar supply, and obesity prevalence in the Republic of Moldova over the period 2010-2022, with extended attention to obesity trends during 2020-2025 and the role of mass media in promoting HFSS food and beverage products.

This study contributes to the existing literature by providing a country-level, longitudinal assessment of dietary drivers of obesity in a transitioning Eastern European context.

The results indicate that both dietary components increased over the study period alongside rising obesity rates, while sugar supply appeared to co-trend more closely with obesity indicators ($r = 0.96$ for adult obesity; $r = 0.94$ for child obesity) than animal fat supply ($r = 0.87$ and $r = 0.82$, respectively). It must be emphasised, however, that these results are derived from seven biennial co-trending time series, a condition under which high Pearson r values are mathematically expected even in the absence of a demonstrable causal relationship. The reported associations therefore reflect descriptive population-level trends only and should not be interpreted as evidence of differential dietary effect or causation.

The analysis of obesity trends during 2020-2025 reveals a continuous upward trajectory, with adult obesity estimated to reach approximately 24.4% by 2025. The COVID-19 pandemic and the economic effects of the regional geopolitical situation may have contributed to a further deterioration in dietary behaviours, reinforcing pre-existing trends toward higher consumption of energy-dense, nutrient-poor food products.

The examination of mass media food advertising highlights the significant role of commercial food marketing in shaping dietary behaviour and contributing to population-level obesity in Moldova. However, this section should be interpreted as a contextual policy discussion based on international evidence and regional

policy comparisons rather than as original Moldova-specific empirical research. The absence of nationally representative HFSS advertising monitoring data remains an important research gap for future studies.

Based on the findings of this analysis, the following policy recommendations are proposed: (1) prioritize sugar reduction strategies in national dietary guidelines and public health interventions; (2) implement statutory restrictions on HFSS food advertising across television, digital, and outdoor media; (3) introduce mandatory front-of-pack nutritional labelling to enable informed consumer choices; (4) invest in national dietary monitoring systems to generate representative data on actual food consumption; and (5) develop integrated obesity prevention programs that address both dietary risk factors and physical activity levels across all age groups.

Future research should pursue at least three directions to build upon the findings of this study. First, nationally representative dietary consumption surveys should be conducted in the Republic of Moldova to replace the food supply proxies derived from FAOSTAT Food Balance Sheets; actual individual-level intake data would allow more precise estimation of the dietary determinants of obesity. Second, longitudinal multivariate modelling studies controlling for income levels, urbanisation, and physical activity are needed to disentangle the relative contributions of dietary and non-dietary factors to obesity trends, thereby moving beyond the descriptive trend associations characterising the present analysis. Third, dedicated HFSS media monitoring studies specific to the Republic of Moldova should be undertaken to generate an empirical national evidence base for the regulatory recommendations proposed in this paper. Such studies could assess the volume, reach, and composition of HFSS food advertising across television, digital, and out-of-home channels, providing country-level data that are currently absent from the literature.

ACKNOWLEDGEMENTS

The authors would like to acknowledge the contribution of data provided by the Food and Agriculture Organization of the United Nations (FAO), the World Health Organization (WHO), and the World Bank, which formed the statistical foundation of this study. This research work was carried out within the doctoral field Engineering and Management in Agriculture and Rural Development at "Dunărea de Jos" University of Galați, which supported and financed the research activities.

REFERENCES

Ancel, K., & Margaret, K. (1975). *How to eat well and stay well the Mediterranean way*. New York, USA: Doubleday Publishing House.

Astrup, A., Bertram, H. C., Bonjour, J. P., de Groot, L. C., Otto, M. C., Feeney, E. L., & Givens, D. I. (2019). WHO draft guidelines on dietary saturated and trans fatty acids: Time for a new approach? *British Medical Journal*, 366, l4137. https://doi.org/10.1136/bmj.l4137

Boyland, E. J., Nolan, S., Kelly, B., Tudur-Smith, C., Jones, A., Halford, J. C. G., & Robinson, E. (2016). Advertising as a cue to consume: A systematic review and meta-analysis of the effects of acute exposure to unhealthy food and nonalcoholic beverage advertising on intake in children and adults. *American Journal of Clinical Nutrition*, 103(2), 519–533.

Food and Agriculture Organization of the United Nations. (2023). *The State of Food Security and Nutrition in the World 2023*. FAO. https://www.fao.org/publications/sofi

Food and Agriculture Organization of the United Nations. (2025). *FAOSTAT: Food Balance Sheets. FAO*. https://www.fao.org/faostat/en/#data/FBS

GBD (2024). Obesity Collaborators. Prevalence of overweight and obesity by country, 1990–2023. *The Lancet*. https://doi.org/10.1016/S0140-6736(24)01129-0

Keys, A. (1953). Atherosclerosis: A problem in newer public health. *Journal of the Mount Sinai Hospital*, 20(2), 118–139.

Lustig, R. H., Schmidt, L. A., & Brindis, C. D. (2012). Public health: The toxic truth about sugar. *Nature*, 482(7383), 27–29.

Malik, V. S., Pan, A., Willett, W. C., & Hu, F. B. (2013). Sugar-sweetened beverages and weight gain in children and adults: A systematic review and meta-analysis. *American Journal of Clinical Nutrition*, 98(4), 1084–1102.

Munteanu (Pila), M., & Stanciu, S. (2019). Comparative aspects of food security in the Republic of Moldova and Romania. *Proceedings of the 33rd IBIMA Conference,* 169–180.

National Bureau of Statistics of the Republic of Moldova. (2022). *Household budget survey: Food expenditure and dietary patterns 2021–2022*. NBS Moldova. https://statistica.gov.md

Pan American Health Organization. (2021). *Ultra-processed food and drink products in Latin America: Sales, sources, nutrient profiles, and policy implications*. PAHO. https://www.paho.org

Rojco, A. A., Doga, V. S., & Ivanov, S. A. (2020). Assessment of the state of Republic of Moldova food security. *Accounting and Finance*, (2)88, 139–150.

Sadeghirad, B., Duhaney, T., Motaghipisheh, S., Campbell, N. R., & Johnston, B. C. (2016). Influence of unhealthy food and beverage marketing on children's dietary intake and preference: A systematic review and meta-analysis of randomized trials. *Obesity Reviews*, 17(10), 945–959.

Sakovich, V., & Cazacu, V. (2023). Food security strategy of the Republic of Moldova (2023-2030) in the context of conceptual theoretical and practical approaches to population food supply. *International Relations Plus*, (2)22. https://doi.org/10.52327/1857-4440.2022.2(22).08

Siminiuc, R., Țurcanu, D., & Siminiuc, S. (2025). Cost and affordability of the food basket in the Republic of Moldova. *Frontiers in Sustainable Food Systems*, 9. https://doi.org/10.3389/fsufs.2025.1453271

Stanciu, S. (2022). Post COVID-19 lessons: Could the SARS-CoV-2 virus be a progress factor? A literature review. *Annals of the "Dunărea de Jos" University of Galati: Fascicle I, Economics & Applied Informatics*, 28(2), 36–46.

Stanhope, K. L. (2016). Sugar consumption, metabolic disease and obesity: The state of the controversy. *Critical Reviews in Clinical Laboratory Sciences*, 53(1), 52–67.

Stratan, A., Lopotenco, V., & Staver, L. (2024). Resilience of Agri-Food Security in the Republic of Moldova. *IntechOpen*. https://doi.org/10.5772/intechopen.1008164

Te Morenga, L., Mallard, S., & Mann, J. (2013). Dietary sugars and body weight: Systematic review and meta-analyses of randomised controlled trials and cohort studies. *BMJ*, 346, e7492. https://doi.org/10.1136/bmj.e7492

World Bank. (2024). *GDP per capita, PPP (constant 2017 international $)* [Data set]. World Development Indicators. https://data.worldbank.org/indicator/NY.GDP.PCAP.PP.KD

World Health Organization. (2010). *Set of recommendations on the marketing of foods and non-alcoholic beverages to children*. WHO Press.

World Health Organization. (2015). *Guideline: Sugars intake for adults and children*. WHO Press.

World Health Organization. (2022). *Obesity and overweight: Key facts*. WHO. https://www.who.int/news-room/fact-sheets/detail/obesity-and-overweight

World Health Organization. (2023). *Restricting digital marketing of unhealthy foods and beverages to children: A WHO policy brief*. WHO Press.