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Consumption of Ultra-Processed Foods and the Association with the Prevalence of Depression in Adolescents and Adults: A Literature Review

Consumo de alimentos ultraprocessados e a associação com a prevalência de depressão em adolescentes e adultos: uma revisão de literatura

Consumo de alimentos ultraprocesados y la asociación con la prevalencia de depresión en adolescentes y adultos: una revisión de la literatura

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Abstract:
Introduction: The increasing consumption of Ultra-Processed Foods (UPFs) in recent years has been linked to a higher risk of depression across different age groups. Therefore, the intake of foods high in sugars, sodium, saturated and trans fats is also associated with inflammation and alterations in neurotransmitters essential for mood regulation, as well as imbalances in the gut microbiota, an important mechanism in the balance of the gut-brain axis. Data from the World Health Organization (WHO) indicate that depression is among the leading causes of disease worldwide (4th place), accounting for 4.4% of the total global burden of disease throughout life. It ranks 1st when considering the time lived with disability throughout life (11.9%), which justifies this investigation, given the relevance of the topic in the context of public health. Objective: To analyze the relationship between the simultaneous consumption of UPFs and the prevalence of depression in adolescents and adults, and the importance of nutritional monitoring as complementary support in the prevention and management of depression. Methodology: This work is characterized as a descriptive and exploratory literature review. Studies published between 2022 and 2026 that addressed the chosen theme within the scope of public health were considered. The following databases were used to compose the sample: PubMed (U.S. National Library) and SciELO (Scientific Electronic Library Online). Results and Discussion: The analyzed studies observed that high consumption of ultra-processed foods (UPFs) has negative effects on mental health. Among the main mechanisms involved are inflammatory processes, oxidative stress, alterations in the gut microbiota, and metabolic imbalances. Despite the methodological limitations observed, the results reinforce the importance of a healthy diet and the role of nutritionists in the promotion, prevention, and care of mental health. Conclusion: The analysis demonstrated that several mechanisms are involved in the pathophysiology of depression, including inflammatory mediators, dysregulation in the hypothalamic-pituitary-adrenal (HPA) axis, and alterations in neurotransmitters involved in mood regulation. The importance of the nutritionist as a key player in the prevention and management of depression is highlighted.

Keywords:
Depression; Ultra-processed foods; Mental health; Nutrition.

Resumo:
Introdução: O consumo progressivo de Alimentos Ultraprocessados (AUPs) nos últimos anos tem sido relacionado a maior risco de depressão em diferentes faixas etárias. Dessa forma, a ingestão de alimentos ricos em açúcares, sódio, gorduras saturadas e trans também está relacionada a inflamação e alterações em neurotransmissores essenciais para a regulação do humor, além de desequilíbrio na microbiota intestinal, mecanismo importante no equilíbrio do eixo intestino-cérebro. Dados da Organização Mundial de Saúde (OMS), apontam que a depressão está entre as principais causas de doenças no mundo (4º lugar), respondendo a 4,4%

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do total da carga global de doenças durante a vida. Ocupando a 1ª posição considerando o tempo vivido com incapacitação ao longo da vida (11,9%) o que justifica esta investigação, dada a relevância do tema no contexto da saúde coletiva. Objetivo: Analisar a relação entre o consumo simultâneo de AUPs e a prevalência de depressão em adolescentes e adultos, e a importância do acompanhamento nutricional como suporte complementar na prevenção e no manejo da depressão. Metodologia: O presente trabalho caracteriza-se como uma revisão de literatura de caráter descritivo e exploratório. Foram considerados estudos publicados entre 2022 a 2026 que abordassem a temática escolhida no âmbito da saúde coletiva. Para composição da amostra foram utilizadas as bases de dados: PubMed (U.S National Library) e SciELO (Scientific Eletronic Library Online). Resultados e Discussão: Observou-se nos estudos analisados que o elevado consumo de AUPs apresenta efeitos negativos para a saúde mental. Entre os principais mecanismos envolvidos destacam-se processos inflamatórios, estresse oxidativo, alterações na microbiota intestinal e desequilíbrios metabólicos. Apesar das limitações metodológicas observadas, os resultados reforçam a importância da alimentação saudável e da atuação do nutricionista na promoção, prevenção e cuidado da saúde mental. Conclusão: A análise demonstrou que diversos mecanismos estão envolvidos na fisiopatologia da depressão incluindo mediadores inflamatórios, desregulação no eixo hipotálamo-hipófise-adrenal (HPA) e alteração em neurotransmissores envolvidos na regulação do humor. Ressalta-se a importância do nutricionista como peça fundamental na prevenção e manejo da depressão.

Palavras-chave:
Depressão; Alimentos ultraprocessados; Saúde mental; Alimentação.

Resumen:
Introducción: El consumo creciente de alimentos ultraprocesados (AUP) en los últimos años se ha relacionado con un mayor riesgo de depresión en diferentes grupos de edad. Asimismo, la ingesta de alimentos ricos en azúcares, sodio, grasas saturadas y grasas trans también se asocia con inflamación y alteraciones en neurotransmisores esenciales para la regulación del estado de ánimo, además de desequilibrios en la microbiota intestinal, un mecanismo importante en el equilibrio del eje intestino-cerebro. Datos de la Organización Mundial de la Salud (OMS) indican que la depresión se encuentra entre las principales causas de enfermedad en el mundo (4.º lugar), representando el 4,4 % de la carga mundial de enfermedad a lo largo de la vida. Además, ocupa el 1.er lugar en cuanto a los años vividos con discapacidad (11,9 %), lo que justifica esta investigación dada la relevancia del tema en el contexto de la salud pública. Objetivo: Analizar la relación entre el consumo simultáneo de alimentos ultraprocesados y la prevalencia de depresión en adolescentes y adultos, así como la importancia del seguimiento nutricional como apoyo complementario en la prevención y el manejo de la depresión. Metodología: El presente trabajo se caracteriza como una revisión de la literatura de carácter descriptivo y exploratorio. Se consideraron estudios publicados entre 2022 y 2026 que abordaran la temática en el ámbito de la salud pública. Para la composición de la muestra se utilizaron las bases de datos PubMed (U.S. National Library) y SciELO (Scientific Electronic Library Online). Resultados y discusión: Los estudios analizados mostraron que el elevado consumo de alimentos ultraprocesados presenta efectos negativos sobre la salud mental. Entre los principales mecanismos implicados destacan los procesos inflamatorios, el estrés oxidativo, las alteraciones de la microbiota intestinal y los desequilibrios metabólicos. A pesar de las limitaciones metodológicas observadas, los resultados refuerzan la importancia de una alimentación saludable y del papel del nutricionista en la promoción, prevención y atención de la salud mental. Conclusión: El análisis demostró que diversos mecanismos participan en la fisiopatología de la depresión, incluidos mediadores inflamatorios, la desregulación del eje hipotálamo-hipófisis-adrenal (HPA) y alteraciones en neurotransmisores implicados en la

regulación del estado de ánimo. Se destaca la importancia del nutricionista como pieza fundamental en la prevención y el manejo de la depresión.

Palabras clave:
Depresión; Alimentos ultraprocesados; Salud mental; Alimentación.

INTRODUCTION

The increase in the consumption of Ultra-Processed Foods (UPFs) in recent years has coincided with a worsening of mental health indicators in the adolescent and adult population (Mesas, A. *et al.;* 2022), with a positive association observed between UPF consumption and depression (Wang, L. *et al.;* 2020). Adolescence, understood as the ages between 12 and 18 years, is a complex phase of life in which the individual undergoes physical, psychological, and social transformations, being more vulnerable to the school and social context, and directly impacting their behavior and their own food choices (Mesas, A. et al.; 2022). On the other hand, adulthood is characterized by total food autonomy and is understood as the ages from 20 to 65 years (Mesas, A. et al.; 2022).

In general, ultra-processed foods (UPFs) are obtained through industrial formulations, produced on a large scale, with little or no *whole foods* in their composition, in addition to containing chemical additives such as colorings, preservatives, and flavor enhancers (Yuan, S. *et al.;* 2025). This group of foods includes: soft drinks, snacks, sweets, ready meals, and frozen products, which stand out for being ultra-palatable, having high caloric density, and a low variety of nutrients that are essential for maintaining and balancing metabolism (Mesas, A. *et al.;* 2022). In contrast, they are rich in refined sugars, saturated fats, and sodium (Mesas, A. *et al.;* 2022).

Studies show that adherence to a nutritionally adequate and high-quality diet has a protective effect against various pathologies, including depression (Molero, P. *et al.;* 2025). Consequently, diets with low nutritional quality are widely recognized as risk factors for the development of mental disorders (Molero, P. *et al.;* 2025). It is also worth noting that the excessive consumption of foods rich in sugars, sodium, saturated and trans fats is also positively associated with inflammation and alterations in the gut microbiota, an important mechanism in the balance of the gut-brain axis (Wang, L. *et al.;* 2020).

According to the Diagnostic and Statistical Manual of Mental Disorders (DSM-5TR, 2023), depression is a mental disorder characterized by persistent sadness, lack of energy, irritability, impatience, insomnia, changes in appetite, anxiety, and low self-esteem, where the

individual is frequently in a state of melancholy and malaise, associated with significant suffering or disability that affects social, professional, and other important activities (American Psychiatric Association) . Association , 2023).

According to the Ministry of Health (2025), the lifetime prevalence of depression in Brazil is around 15.5%, while in the primary health care network the value corresponds to 10.4%, either in isolation or associated with a physical disorder (BRASIL, 2025). Furthermore, epidemiological data from the World Health Organization (WHO) indicate that depression is among the leading causes of disease in the world (4th place), accounting for 4.4% of the total global burden of disease during a lifetime. It occupies the 1st position when considering the time lived with disability throughout life (11.9%) (BRASIL, 2025).

The epidemiological data presented reinforce and justify the need for investigation given the relevance of the topic in the context of public health, recognizing nutrition as an indispensable component in the treatment and promotion of mental well-being through a healthy and balanced diet, with the supply of nutrients and antioxidants identified as reducing depressive symptoms (Alvarenga, M. *et al.;* 2025). Therefore, the nutritionist becomes fundamental in the prevention of complications and in the management of depression symptoms, evidenced by the influence of food on the emotional state of individuals (Alvarenga, M. *et al.;* 2025).

Therefore, the present study aimed to analyze, based on scientific evidence, the association between the consumption of Ultra-Processed Foods (UPFs) and the prevalence of depression in adolescents and adults, as well as the importance of nutritional monitoring as a complementary support in the prevention and management of depression.

METHODOLOGY

This literature review, descriptive and exploratory in nature, aims to answer the following question: "How is the consumption of ultra-processed foods associated with a worsening of mental health markers in adolescents and adults?"

For sample composition, primary studies were included, identified through electronic searches in the following databases: PubMed (US National Library) and SciELO (Scientific Electronic Library Online). The selection process followed the steps of identification, screening, and eligibility. Studies published between 2022 and 2026, published in English and Portuguese and available in full text, that investigated the association between the consumption of ultra-processed foods and the risk of depression were considered eligible. Subsequently,

monographs, literature reviews, opinions, dissertations, event abstracts, duplicate publications, and articles that did not directly address the chosen theme were excluded from the research.

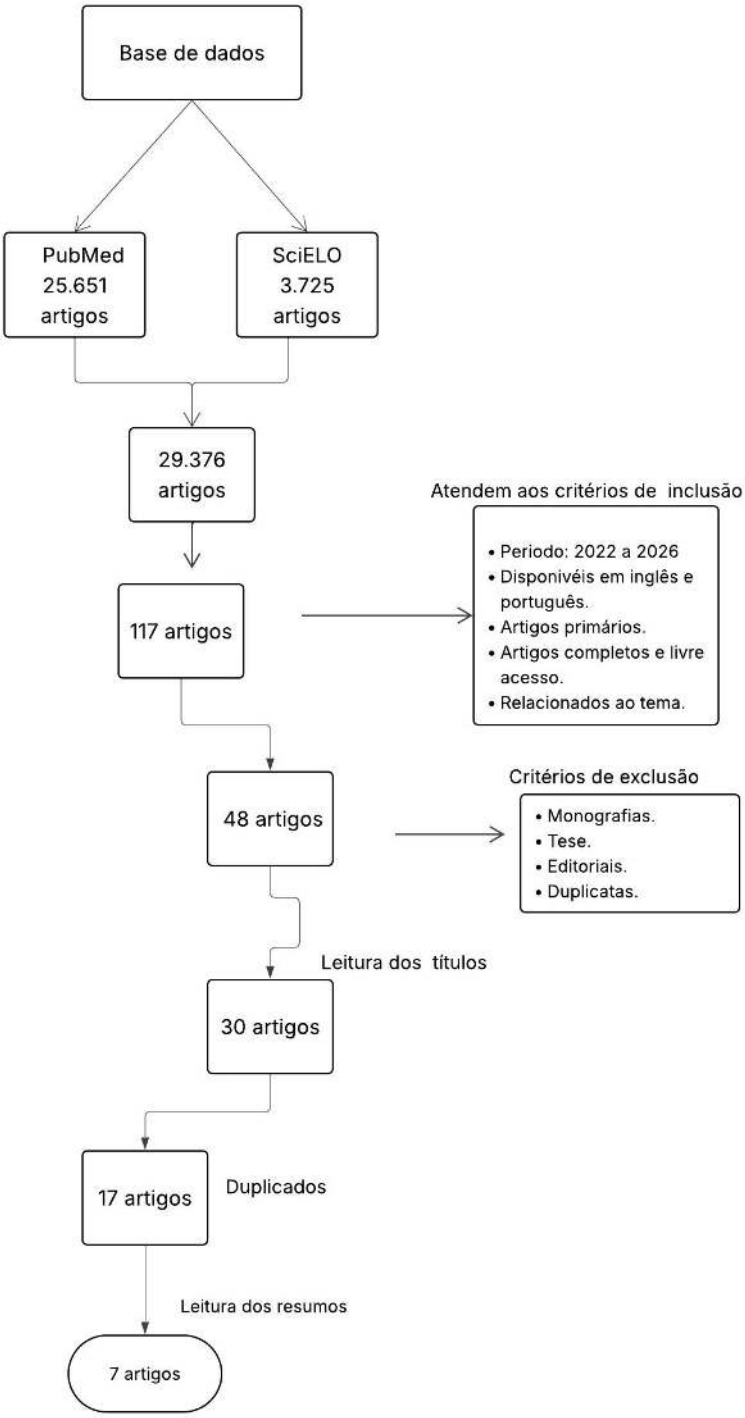
The search strategy for titles was carried out using a combination of descriptors in Portuguese and English, employing Boolean operators (AND and OR) to broaden the search for studies related to the topic. The keywords included: “ depression ”, “ ultraprocessed food”, “mental health ”, and “ nutrition .”

The application of the descriptors resulted in the identification of 29,376 articles. Of these, 117 met the previously established inclusion criteria. In the subsequent step, the exclusion criteria were applied, leaving 48 articles. Following this, the titles were read, and those that did not meet the criteria for this review were excluded, resulting in 30 articles. Of these, 17 were identified as duplicates and removed, totaling 13 articles for abstract analysis. After reading and evaluating the abstracts, 7 articles were included in this review.

Figure 1 - Flowchart of the selection of articles chosen for the current research.

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CONSUMO DE ALIMENTOS ULTRAPROCESSADOS E A ASSOCIAÇÃO COM A PREVALÊNCIA DE DEPRESSÃO EM ADOLESCENTES E ADULTOS: UMA REVISÃO DE LITERATURA



Source: developed by the authors, 2026.

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Table 1, described below, compiles the most significant results from each scientific article selected in the research, as well as authors, type of study, year of publication, study location, sample, objectives, methodology, and results. The 7 selected articles are primary studies, published in national and international journals, conducted in Brazil, Australia, France, China, and

United States. Of the selected articles, all were published in English.

Table 1. Summary of articles analyzed for review.

Articles	Author, year of publication, place of study	Type of study and Number of participants	Study objectives	Methodology	Key findings
1	Ferreira NV *et al.* 2025 Brazil	Study of cohort, longitudinal, prospective, multicenter. N= 13,870 Public servants aged between 35 and 74 years old.	The study sought to assess the association between consumption of This study investigated the prevalence of ultra-processed foods and the persistence and incidence of depression among public servants aged 35 to 74 from six Brazilian cities: Belo Horizonte, Porto Alegre, Salvador, Rio de Janeiro, and São Paulo. Paulo and Vitoria.	The study was conducted using the Food Frequency Questionnaire (FFQ), which assessed dietary patterns over 12 months based on 114 food and beverage items. Each item was evaluated, divided into 8 categories (More than 3 times/day, to Almost never/never, including an additional column for seasonal consumption). Foods were divided into 4 groups (unprocessed, minimally processed, processed, and ultra-processed). These were further divided into three waves: Wave 1 (2008-2010, N = 15,105), Wave 2 (2012-2014, N = 14,014), and Wave 3 (2017-2019, N = 12,636).	The study revealed that of the 13,870 participants without depression at the start of the study, 731 (5.3%) developed depression after 8 years of follow-up, concluding that a higher consumption of food The amount of ultra-processed food at the start of the study was significantly associated with a higher likelihood of depression and a higher risk of depression occurring over eight years.

2	Tables, AE *et al* 2022 Brazil	Cross-sectional study N = 94,767 participants, of which (52.4%) were girls.	To analyze the consumption of ultra-processed foods and mental health symptoms in the population. student adolescent Brazilian. Aged between 13 and 17 years old.	Using secondary data from the 2019 National School Health Program (PeNSE), which covered the entire national territory and included students aged 13 to 17 from public and private schools in urban and rural areas of the country. The students answered an electronic food frequency questionnaire.	In conclusion, the higher the consumption of UPF, the higher the frequency of reported symptoms of poor mental health. The findings remained significant regardless of factors Sociodemographic and lifestyle factors, body image, and victimization by bullying.
				and the frequency of mental health symptoms, adjusted for major confounding factors, in each sex.	
3	Lane, MM . *et al.* 2023 Australia	Study of collaborative longitudinal observational cohort of Melbourne N = 23,299 participants aged between 27 and 69 years	To examine the associations between the intake of food ultra-processed foods and the increase of Suffering Psychological factors as an indicator of depression after 15 years.	A questionnaire survey using the NOVA Food Frequency Questionnaire (FFQ) system was conducted to determine baseline intake of ultra-processed foods. UPF consumption was adjusted for energy, in quartiles, using the distribution of the dataset. The Kessler Psychological Distress Scale (K10) of ten items was used to assess psychological distress.	Increased food intake Consumption of ultra-processed foods at the beginning of the study was associated with a subsequent increase in psychological distress, as an indicator of depression, during follow-up. Participants with higher intakes of these foods were more likely to experience elevated mental distress compared to participants with lower intakes.

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4	Yuan, S. *et al* . 2025 China	Study of longitudinal observational cohort . N= 30.059 (Women = 15,956 (53.1%); Men = 14.103 (46.9%)	The study sought to investigate the relationship between the signature metabolic related to the consumption of ultra-high-performance liquids and mental disorders.	The study used data from the UK Biobank , with participants from the United Kingdom aged between 37 and 73 years. Information on self-assessed dietary habits was collected using... Oxford WebQ , an online tool, collects detailed information on just over 200 types of food and beverages, allowing for the estimation of energy and nutrients. High-throughput nuclear magnetic resonance (NMR) spectroscopy, performed by Nightingale Health Ltd. , was used to assess circulating metabolic profiles.	The study revealed that the consumption of ultra-processed foods They have an increased risk of developing mental health problems. They also found that changes in metabolite patterns Blood types related to this intake may help explain these associations.
5	Bayes , J. Schloss, J. Sibrbritt , D. 2022 Australia/ New Zealand	Clinical study randomized, controlled (RCT). N= 72 men (18–25 years old)	The study sought To determine whether the Mediterranean diet can improve depressive symptoms in young men with clinical depression **.**	Parallel groups were defined, with an open-label design and a duration of 12 weeks. Assessments were performed at three time points: baseline, week 6, and week 12. Adherence to the Mediterranean Diet was	The results demonstrated that depressed young men can to significantly change the quality of the diet under the supervision of a clinical nutritionist, and that by improving the quality of the diet,
				Measured using the Mediterranean Diet Adherence Score (MEDAS), followed by the Beck Depression Inventory – Version II (BDIII), and using quality of life (QoL) as the secondary outcome.	Significant improvement was observed in depressive symptoms. When compared to the control group, the MD group experienced a substantial increase in physical and psychological health, as well as in overall QoL .

6	Hecht, E. m. *et al.* 2022 States United America (USA)	Study transversal N= 10,539 American adults aged 18 or older	To investigate whether individuals who consume larger quantities of ultra-processed foods are more likely to exhibiting adverse symptoms of depression.	The survey was used. National Health and Nutrition Examination Survey (NHANES) combined three cycles between 2007 and 2012, including dietary data, and frequency of anxiety episodes and symptoms.	The study highlighted the persistence of depressive symptoms due to poor diet quality, and a higher probability of zero days without feeling anxious.
7	Achour , Y. *et al.* 2025 France	Cross-sectional research study. N = 15,262 adults	To investigate the association between dietary patterns and the risk of depression, analyzing differences between sex and age groups, with the aim of identifying more vulnerable groups and guiding prevention strategies.	Dietary data was collected using a validated food frequency questionnaire. Along with the Depression Assessment using the scale CES-D (self-reported). Use of principal component analysis (PCA) to identify dietary patterns and application of multivariate logistic regression, adjusting for confounding factors (BMI, smoking, physical activity, education, among others). Participants with chronic illnesses or who used psychotropic drugs were excluded.	The prevalence of depression risk was 32.2%. Consumption of ultra-processed foods was associated with a higher risk of depression, especially in young people, while a healthy diet was related to a reduction in this risk, mainly in women over 35 years of age, showing variations according to sex and age.

Source: developed by the authors, 2026

RESULTS AND DISCUSSION

The studies included in this review presented multiple approaches, including 4 longitudinal observational cohort studies, 2 cross-sectional studies, and 1 randomized clinical trial (RCT), which allows for a comprehensive understanding of the topic.

Beyond the biological mechanisms involved, the findings are highly relevant to Public Health, since the simultaneous increase in the consumption of ultra-processed foods and the prevalence of mental disorders reveal the need for strategies aimed at promoting adequate and healthy eating. Therefore, food and nutrition education initiatives and public policies aimed at

reducing the consumption of these products can contribute to the prevention of mental health problems in different population groups.

In the context of longitudinal studies, Ferreira *et al* . (2025), based on a Longitudinal Study of Adult Health (ELSA-BRASIL), followed 13,870 public servants, aged between 35 and 74 years, from 6 Brazilian cities (Belo Horizonte, Porto Alegre, Salvador, Rio de Janeiro, São Paulo and Vitória) for 8 years. The study was conducted using the Food Frequency Questionnaire (FFQ), which assessed dietary patterns over 12 months based on 114 food and beverage items.

The results of the previously cited study demonstrated that replacing just 5% of ultra-processed food consumption with unprocessed or minimally processed foods was associated with a 6% reduction in the incidence of depression. The presence of a dose-response pattern, evidenced by the progressive increase in risk in the upper quartiles of consumption, strengthens the inference of causality, although it does not definitively establish it. Furthermore, the dietary substitution analysis revealed that the proportional reduction of ultra-processed foods in favor of minimally processed foods results in a significant decrease in the risk of depression, suggesting not only an association but also the potential reversibility of the risk through dietary modification.

Corroborating these findings, the longitudinal cohort study conducted by Yuan *et al* (2025) in China, with 30,059 participants from the UK Biobank aged between 37 and 73 years, of whom 15,956 (53.1%) were women and 14,103 (46.9%) were men, demonstrated that each 10% increase in the consumption of ultra-processed foods was related to a 14% increase in the risk of depressive disorder, a 12% increase in the risk of anxiety, a 6% increase in the risk of substance use disorder, a 12% increase in suicidal ideation, and a 5% increase in persistent anxiety symptoms.

Regarding the research by Yuan *et al.* (2025), the metabolomic analysis conducted during the study identified alterations in 91 blood metabolites related to lipid, carbohydrate, and amino acid metabolism, highlighting significant metabolic dysregulation associated with mental disorders. Among the main mechanisms involved in this dysregulation are: neuroinflammation, oxidative stress, dysfunction of the hypothalamic-pituitary-adrenal (HPA) axis, and alterations in the gut microbiota resulting from the high content of sugars, saturated fats, sodium, and chemical additives present in ultra-processed foods. Additionally, the study observed the relevance of nutritionists as adjuncts in the prevention and management of these disorders through reducing the consumption of ultra-processed foods and encouraging dietary

patterns rich in whole foods and anti-inflammatory compounds, which can contribute to better metabolic balance and mental health.

In this context, the randomized clinical trial conducted by Bayes , J. Schloss, J. Sibrbritt , D. (2022) in Australia with 72 young men aged 18 to 25 diagnosed with major depressive disorder, presents high-level hierarchical evidence regarding the influence of diet on mental health. It was observed that adherence to the Mediterranean diet significantly reduced depressive symptoms, as measured by the Beck Depression Inventory. Inventory -II (BDI-II). The authors suggest that the results may be related to the modulation of multiple biological pathways, including epigenetic mechanisms, reduction of systemic inflammatory state, and regulation of the HPA axis, recognized for its role in the pathophysiology of depression.

The evidence presented above strengthens the hypothesis that dietary interventions can exert a direct therapeutic effect on depressive symptoms and reinforces the role of bioactive nutrients present in the Mediterranean diet, especially omega-3 fatty acids found in fish, and flavonoids present in fruits, vegetables, and nuts, which are associated with improved neuroplasticity, cognitive and brain function, and may attenuate neuroinflammatory processes frequently observed in individuals with depression. The study reinforces the relevance of nutrition professionals as an indispensable tool in the treatment of major depression, recommending that physicians and psychologists refer patients with depression to a nutritionist or dietitian.

In younger populations, the study by Mesas *et al.* (2022) conducted in Brazil with 94,767 adolescent participants, of whom 52.4% were female, in a nationally representative sample from the National Program of

The National School Health Survey (PeNSE) has shown different pathophysiological mechanisms capable of explaining why excessive consumption of ultra-processed foods can have deleterious effects on mental health.

The authors suggest that high consumption of ultra-processed foods is associated with higher total energy intake, which may contribute to weight gain and body image dissatisfaction. Furthermore, a diet composed of ultra-processed foods promotes a higher intake of pro-inflammatory ingredients, including high-fructose corn syrup, saturated fatty acids, hydrogenated or non-esterified oils, and hydrolyzed additives. Simultaneously, a reduction in the intake of essential amino acids (e.g., tryptophan, tyrosine) and micronutrients such as vitamin B12, folic acid, selenium, and zinc was observed; these micronutrients play a relevant role in the synthesis and metabolism of neurotransmitters involved in mood regulation.

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It is also worth highlighting that the nutritional profile present in ultra-processed foods can negatively impact mental health through alterations in the gut microbiota, low-grade chronic inflammation, and neurochemical dysfunctions, particularly relevant when considered in light of the neuroplasticity characteristic of this developmental phase, in which environmental factors such as diet can exert a lasting influence on neural circuits related to emotional regulation. This association remained consistent in both sexes and independent of socioeconomic variables, lifestyle, and family relationships, reinforcing the robustness of the results. However, the study presents important methodological limitations, especially due to the cross-sectional design, which makes it impossible to establish causal relationships, and it is not possible to rule out the hypothesis of reverse causality, in which individuals with poorer mental health would tend to adopt less healthy eating patterns, in addition to the use of the 24-hour dietary recall instrument, which does not allow for precise estimation of the quantity and detailed composition of foods consumed.

Similar results were found in the observational cross-sectional studies by Hecht *et al* (2022), and Lane, MM . *et al.* (2023) A study conducted with adult participants aged 18 to 69 years investigated whether individuals who consume higher amounts of Ultra-Processed Foods (UPFs) are more susceptible to adverse symptoms of depression. The results showed that participants who consumed more UPFs during the study period, compared to those who consumed less, had an 81% higher risk of mild depression, as well as more days of impaired mental health.

Achour 's study *A study by et al.* (2025), conducted in France with 15,262 adults, sought to identify more vulnerable groups, enabling more effective interventions. It was observed that, in women regardless of age, a dietary pattern characterized by the consumption of processed foods was associated with an increased risk of depression, while in men this association was identified only in the 18-34 age group. Additionally, the reduction in the chances of depression associated with the "healthy diet" factor was observed exclusively in women. The results suggest that the association between the consumption of ultra-processed foods (UPFs) and the risk of depression may vary according to sex and age group, possibly due to differences in dietary, behavioral, physiological, and metabolic patterns among the groups analyzed. Furthermore, the lower risk of depression observed in women with greater nutritional knowledge reinforces the importance of Food and Nutrition Education (FNE) as a protective factor for mental health. Therefore, understanding these differences can contribute to the development of more specific and effective interventions, especially those directed at the female population.

In general, the evidence analyzed converges on the association between high intake of ultra-processed foods and an increased risk of depression, also indicating that women constitute the population group most vulnerable to depressive symptoms. This relationship can be explained by different biological pathways, including dysregulation of the hypothalamic-pituitary-adrenal (HPA) axis, alterations in the gut microbiota, systemic inflammation, and impaired synthesis of neurotransmitters involved in mood regulation. Although the results are consistent, the studies analyzed do not allow for establishing a definitive causal relationship. Furthermore, methodological limitations, such as differences in assessment instruments, study designs, and the characteristics of the populations investigated, reinforce the need for further research to deepen the understanding of the mechanisms underlying this association.

CONCLUSION

Based on the evidence analyzed, it appears that, although studies demonstrate that dietary patterns characterized by high intake of sugars, saturated fats, sodium, and chemical additives may contribute to metabolic, inflammatory, and neurochemical alterations involved in the pathophysiology of depression, the causal relationship between these factors is not yet fully established. Conversely, dietary patterns such as the DASH diet and the Mediterranean diet, composed of whole, minimally processed foods rich in antioxidant compounds, have been associated with protective effects on mental health.

Therefore, it can be concluded that diet is an important modifiable factor in the prevention and management of depression. Although there are still gaps in our understanding of the mechanisms involved in this association, the available evidence reinforces the relevance of nutritionists in promoting mental health and developing dietary strategies aimed at reducing the consumption of ultra-processed foods. In this context, the promotion of healthy dietary patterns represents an important tool for strengthening public health actions and improving the quality of life of the population, especially among more vulnerable groups.

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