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Corresponding author:

Ume Odum

umeodum@gmail.com

Author Affiliation:

Montana State University.

Understanding the Variability of Associations between Higher Ultra-processed Food Consumption and Self-reported Depression Severity: A Systematic Review of Epidemiological Studies

Odum, UE; Schure, M.

ADMINISTRATIVE INFORMATION

Support - None.

Review Stage at time of this submission - Completed but not published.

Conflicts of interest - None declared.

INPLASY registration number: INPLASY202570071

Amendments - This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 17 July 2025 and was last updated on 17 July 2025.

INTRODUCTION

Review question / Objective What is the variability of associations between higher UPF consumption and depression severity across studies with different populations?

Rationale To the best of our knowledge, no prior systematic reviews have specifically focused on understanding the variability in magnitude of associations between ultra-processed food (UPF) consumption and depression severity across studies with different populations. Previous systematic reviews have only focused on the association between UPF consumption and depression or in combination with other health outcomes but not the variability of the associations between higher UPF consumption and depression. This gap in the scientific literature is notable, given that numerous studies highlight the association but not the magnitude. Therefore, the purpose of this systematic review is to understand the variability of associations between higher UPF consumption and depression severity across research studies.

Condition being studied Self-reported depression.

METHODS

Search strategy To ensure no relevant articles were left out, an extensive and in-depth search strategy were carried out using PsycINFO, CINAHL ultimate and web of science databases. They are: “highly processed” or ultra-processed AND food* AND depression. Ultra-processed OR “ultra processed” AND food* AND depression NOT diabet* OR cardio* OR hy-pertension OR obes* OR cancer OR carcinoma. “soft” OR “soda” OR confectionary” OR “sweet” OR “sugary” OR “high fat” OR “most processed” AND “food*” OR “drink*” OR “beverage*” OR “product*” OR “good*” AND “risk of depression OR “depressive disorder*” OR “major depressive disorder” OR “depression” OR “unipolar depression” OR “bipolar depression” OR “depressive symptoms”. A hand search of articles ref-erence lists was also conducted.

Participant or population Adult populations vary by countries in which studies were conducted.

Intervention No intervention groups were included.

Comparator Not applicable.

Study designs to be included Cross-sectional, cohort, case-control (all observational studies).

Eligibility criteria For a study to be included in this review, each study had to identify the consumption of UPFs as exposure and with depression (including depressive symptoms) and risk of depression as the outcome. Each of the studies needed to include only adult participants (18 years and older), be peer reviewed, published in English, and be either a cohort or cross-sectional or case-control study from 2014 to 2024. We excluded reviews, abstracts only papers, experimental studies, letters, editorials and studies that were not published in English.

Information sources PsycINFO, CINAHL ultimate and web of science databases and hand search of reference lists.

Main outcome(s) Self-reported depression.

Additional outcome(s) None.

Data management Not applicable.

Quality assessment / Risk of bias analysis We used Strengthening the Reporting of Observational Studies in Epidemiology - Modified (STROBE-M) checklist (Limaye et al., 2018) to assess the quality of the included studies. Risk of bias of eligible studies were evaluated on a scoring scale that was made up of 70 items for the cohort studies and 63 for the cross-sectional studies after we modified from Limaye et al. (2018) version. Depending on the item, it was decided to have scores of 0, if the particular checklist item is not fulfilled, a score of 1,2 or 3 if the particular checklist item is fulfilled and a Score of NA if the particular checklist item is not applicable for the included study. This was done to determine the overall quality score for each of the included study. Each of the included study was categorize as either excellent (≥ 85), good (70 to < 85), fair (50 to < 70), or poor (< 50) quality based on the overall scores in percentage.

Strategy of data synthesis Narrative synthesis of results, characteristics, and biases of included studies.

Subgroup analysis None.

Sensitivity analysis Not applicable.

Language restriction Studies published only in English.

Country(ies) involved United States/Department of Human Development and Community Health, Montana State University.

Other relevant information None.

Keywords Depression, Ultra-processed food consumption, Unhealthy eating, Health behavior, Nova food classification system.

Dissemination plans Peer-reviewed academic journal.

Contributions of each author

Author 1 - Ume Odum - Conceptualization, methodology, data analysis, writing—original draft preparation, review and editing.

Email: umeodum@gmail.com

Author 2 - Mark Schure - data analysis, writing, review, editing, supervision.

Email: mark.schure@montana.edu