INPLASY

High and low dietary fiber consumption and cancer risk: a comprehensive umbrella review with meta-meta-analysis involving meta-analyses of observational epidemiological studies

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ADMINISTRATIVE INFORMATION

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

Conflicts of interest - None declared.

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Amendments - This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 07 October 2023 and was last updated on 07 October 2023.

INTRODUCTION

Review question / Objective The purpose of this current research was to investigate the impact of dietary fiber on the incidence and mortality of various types of cancer using the meta-meta-analysis method. This paper also aimed to assess the existing evidence in this area and identify any potential biases that may affect the reliability of the findings.

Condition being studied Impact of dietary fiber on the incidence and mortality of various types of cancer.

METHODS

Search strategy A structured and comprehensive computer literature search was undertaken in the electronic databases PubMed/Medline, Web of Science (WoS), and Scopus, combining predefined keywords.

Participant or population Cancer and non-cancer patients.

Intervention High and low dietary fiber consumption.

Comparator High and low dietary fiber consumption.

Study designs to be included Observational epidemiological studies.

Eligibility criteria Meta-analyses that reported on the association between cancer incidence and/or mortality risk and dietary fiber consumption (including both low and high intake) were included in the study.

Information sources A structured and comprehensive computer literature search was undertaken in the electronic databases PubMed/Medline, Web of Science (WoS), and Scopus, combining predefined keywords.

Main outcome(s) Cancer incidence and cancer-related mortality.

Quality assessment / Risk of bias analysis The quality assessment of the meta-analyses was performed using the Newcastle–Ottawa Scale (NOS) (Wells et al. 2014). The included studies were assessed for risk of bias using the Risk of Bias in Systematic Reviews (ROBIS) tool (Whiting et al. 2016). In this paper, the quality of evidence was also evaluated by employing the Grading of Recommendations Assessment, Development, and Evaluation (GRADE) approach (Balshem et al. 2011).

Strategy of data synthesis The selected meta-analyses were used to perform both primary and secondary meta-meta-analyses, which combined RRs, ORs, and HRs for the reported outcomes. In the primary and secondary meta-meta-analyses, effect sizes (ES) were calculated by pooling ORs, RRs, and/or HRs with 95% confidence intervals (CIs) for all subgroups.

Subgroup analysis Subgroup analyses were executed according to cancer types.

Sensitivity analysis Sensitivity analyses were performed to assess the robustness of the results. In sensitivity analyses, the robustness of the results was evaluated by examining the impact of excluding individual studies on the pooled analysis. The ES was recalculated after excluding each study to assess the potential influence of that study on the overall results.

Language restriction Only studies in English were included.

Country(ies) involved Turkey.

Keywords dietary fiber, cancer, meta-analysis, mortality, incidence.

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