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Editorial Board Member of *World Journal of Psychiatry*, Marianna Mazza, MD, PhD, Psychiatrist, Psychotherapist, Psychoanalyst, Unit of Psychiatry, Department of Geriatrics, Neuroscience and Orthopedics, Fondazione Policlinico Universitario A. Gemelli IRCCS, Università Cattolica del Sacro Cuore, Rome 00168, Italy.
marianna.mazza@policlinicogemelli.it

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Biological mechanisms and possible primary prevention of depression

Chih-Yun Kuo, Ivo Stachiv

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Chih-Yun Kuo, Department of Neurology and Centre of Clinical Neuroscience, First Faculty of Medicine, Charles University, Prague 12108, Czech Republic

Ivo Stachiv, Department of Functional Materials, Institute of Physics, Czech Academy of Sciences, Praha 18021, Czech Republic

Corresponding author: Ivo Stachiv, PhD, Academic Fellow, Associate Professor, Department of Functional Materials, Institute of Physics, Czech Academy of Sciences, Na Slovance 2, Praha 18021, Czech Republic. stachiv@fzu.cz

Abstract

Individuals with unipolar depressive disorder (UDD) are having an increased risk of death and development of dementia in later life. It is widely expected that in a near future UDD would be the leading cause of death; therefore, a primary inexpensive prevention of UDD will be of a great importance to the society. Several studies provide evidences supporting the positive effect of Mediterranean diet on a reduced risk for development of depression.

Key Words: Unipolar depressive disorder; Mediterranean diet; Depression; Primary prevention; Dementia

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Core Tip: Dietary interventions, especially Mediterranean diet, may help to reduce the risk for development of depression. It is the high levels of various antioxidant compounds, adequate B-group vitamin and folate content which make the Mediterranean diet a possible candidate for an inexpensive primary intervention of depression. However, the long-term clinical trials on the large cohorts are still necessary to understand the relationship between dietary pattern and development of depression or dementia.

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TO THE EDITOR

Unipolar depressive disorder (UDD) is characterized by an increased mortality in the general population. The healthy diet, especially Mediterranean diet, has been found being associated with the one's health status including mental health. Unfortunately, up to date the exact relationship between the healthy diet and the risk for development of depression, biomarkers and overall improvements in the one's quality of life is still not fully understood. With this in mind we read the narrative review by Pano *et al*[1] with a considerable interest. In their study, they have summarized the available evidences on the biological mechanisms of UDD and cardiometabolic diseases as well as the primary preventive strategies for depression such as dietary interventions. They have suggested that Mediterranean diet interventions could potentially be considered as an inexpensive strategy enabling to notably reduce the risk for depression, that is, Mediterranean diet can be viewed as the protective factor against depression. In addition, authors have also pointed out main advantages of this healthy diet (*i.e.*, Mediterranean diet) such as the high levels of various antioxidant compounds, adequate B-group vitamin and folate content.

We commend the authors for this important research and agree with their opinion and conclusions. Note that their data which are in a good agreement with other recently reported studies on association between dietary patterns and depression[2-4] or even dietary pattern and dementia in later life[5], are of great importance to public health. These recent studies provide evidences suggesting that oxidative stress, gut microbiota, the hypothalamic-pituitary-adrenal dysregulation and mitochondrial dysfunction are the possible driving mechanisms of depression. Despite the mechanisms associating the dietary interventions with depression are still not fully explained, there is a consensus among researchers that healthy diet, that is, particularly Mediterranean diet, can notably reduce the incidence of depression. In addition, Mediterranean diet has also been shown affecting depression *via* other chronic comorbid diseases such as diabetes mellitus or cardiovascular diseases. Pano *et al*[1] have also proposed that the systematic long-term clinical trials would be necessary to support the protective effect of dietary interventions. We foresee that these studies should also account for behavioral, biological and other factors such as sex and culture differences. Hence, the effect of other healthy diet and individual factors would be required to develop novel treatment strategies and clinical practice guidelines.

To conclude, we once again commend the authors on this interesting work and highly welcome their findings on this important topic. We emphasize here that research associating healthy lifestyle and depression should be of emergent importance, and a larger sample size and well-designed clinical trials are needed in the future studies.

FOOTNOTES

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Country/Territory of origin: Czech Republic

ORCID number: Chih-Yun Kuo 0000-0003-3810-0894; Ivo Stachiv 0000-0002-3323-3308.

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