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The effect of healthy dietary patterns on stress, mood, and mental health outcomes: A systematic review

James Brooks¹, Paul Fairbairn¹, Anna Mantzouratou¹, Leigh Chester¹ and Fotini Tsofliou¹
¹Bournemouth University, Bournemouth Gateway Building, St Paul's Lane, Bournemouth, Dorset, BH8 8GP

Chronic low-grade inflammation has been associated with poor mood states and reduced mental well-being, increasing the chances of comorbidities such as diabetes and mental illness⁽¹⁾. Inflammation and stress share a bi-directional relationship⁽²⁾, impacting an individual's mood and mental well-being. Whole food interventions such as the Mediterranean diet (MD) possess anti-inflammatory properties and might offer protection for perceived stress and mood disorders⁽³⁾. This systematic review investigated the effects of whole food interventions on stress, mood, and mental well-being.

The following databases were searched for studies published until the end of March 2024:

MEDLINE, CINAHL, Prospero, Web of Science, Cochrane Library ($n = 6$). Inclusion criteria were: (1) RCT; (2) mean participant age between 18 and 65 years; (3) measured one (or more) relevant outcomes e.g. stress, mood, or mental wellbeing; (4) whole food intervention. The Cochrane Risk of Bias v2 will be used to assess randomised controlled trials (RCT)⁽⁴⁾.

The review identified 3,854 results in accordance with the PRISMA guidelines with fifteen meeting inclusion criteria. Backward citation searching yielded 8 studies. A total of twenty-three studies were included in this review. Seventeen applied whole food dietary intervention (WFDI) while six investigated supplementing the habitual i.e. adding nuts to diet (STH). Seventeen studies used WFDI: MD ($n = 7$), Nordic diet ($n = 1$), Ketogenic diet ($n = 1$), time-restricted eating ($n = 1$), *a priori* diets ($n = 7$). The remaining six STH studies supplemented with: nuts ($n = 3$), basil ($n = 1$), cacao ($n = 1$) and corn leaf ($n = 1$). Five studies reported positive changes in mood states i.e. vigor ($p < .05$). Two of these investigated the effects of a 10-day MD intervention compared to habitual diet, finding significant improvement in mood states ($n = 4$). Three studies measured mental well-being as an outcome with WFDI, MD ($n = 1$) and *a priori* diets ($n = 2$) reporting significance ($p < .05$) but demonstrating heterogeneity in measurement methods. Two studies were conducted with the outcome of stress with a WFDI, Mediterranean diet ($n = 1$) and *a priori* ($n = 1$). The findings reported to have a positive effect on reducing stress, when compared to baseline ($p < .035$). Four studies examined the effects of STH on mood states reporting positive significant change respectively: nut ($n = 2$), basil ($n = 1$), cacao ($n = 1$).

This systematic review is the first to examine the interaction of whole food intervention with stress, mood, and/or mental well-being. Our findings offer an insight to the interplay of different whole food interventions, whether entire diet or supplementation on the outlined outcomes in this review. The findings demonstrate heterogeneity of measurements which could be a factor in not establishing significance in some studies ($n = 9$). Other considerations of this review are the confounding variables that can influence stress, mood, and mental well-being such as physical activity, hydration, sleep quality.

References

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