



Phytotherapy Research

REVIEW

Does Ashwagandha supplementation have a beneficial effect on the management of anxiety and stress? A systematic review and meta-analysis of randomized controlled trials

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Abstract

Clinical trial studies revealed conflicting results on the effect of Ashwagandha extract on anxiety and stress. Therefore, we aimed to evaluate the effect of Ashwagandha supplementation on anxiety as well as stress. A systematic search was performed in PubMed/Medline, Scopus, and Google Scholar from inception until December 2021. We included randomized clinical trials (RCTs) that investigate the effect of Ashwagandha extract on anxiety and stress. The overall effect size was pooled by random-effects model and the standardized mean difference (SMD) and 95% confidence interval (CIs) for outcomes were applied. Overall, 12 eligible papers with a total sample size of 1,002 participants and age range between 25 and 48 years were included in the current systematic review and meta-analysis. We found that Ashwagandha supplementation significantly reduced anxiety (SMD: -1.55 , 95% CI: -2.37 , -0.74 ; $p = .005$; $I^2 = 93.8\%$) and stress level (SMD: -1.75 ; 95% CI: -2.29 , -1.22 ; $p = .005$; $I^2 = 83.1\%$) compared to the placebo. Additionally, the non-linear dose–response analysis indicated a favorable effect of Ashwagandha supplementation on anxiety until 12,000 mg/d and stress at dose of 300–600 mg/d. Finally, we identified that the certainty of the evidence was low for both outcomes. The current systematic review and dose–response meta-analysis of RCTs revealed a beneficial effect in both stress and anxiety following Ashwagandha supplementation. However, further high-quality studies are needed to firmly establish the clinical efficacy of the plant.

CONFLICT OF INTEREST

The authors have no conflicts of interest to declare.

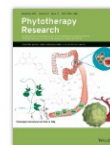
DATA AVAILABILITY STATEMENT

Data sharing is not applicable to this article as no new data were created or analyzed in this study.

Supporting Information

REFERENCES

Citing Literature



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References



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