

## Effect of Mindfulness Training on Psychological Well-Being: An Experimental Study Using a Mobile App as Intervention

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**Abstract :** It was well known that college students experienced a high level of stress and anxiety. College athletes, a special group of college students, may even encounter a higher level of pressure and distress due to their dual endeavors in academic and athletic settings. Due to the high demands and costs of mental health services, easily accessible, web-based self-help interventions are getting more popular. The aim of the present experimental study was to examine the potential intervention effect of a mindfulness-based self-help mobile App, called 'Smiling Mind', on mindfulness and psychological well-being. Forty-six college athletes, recruited from athletic teams of two local universities in Hong Kong, were randomly assigned to the Mindfulness App Group (MAG) and the Control Group (CG). All participants were administered the Mindful Attention Awareness Scale, Geriatric Depression Scale, and Perceived Stress Scale-10 before the study (Time 1, T1) and after the 4-week intervention (Time 2, T2). MAG was requested to use the app and follow the instructions every day for at least 5 days per week. Participants were also asked to record their daily app usage time. Results showed that, for MAG, from T1 to T2, mindfulness has been increased from 3.25 to 3.92; depressive symptoms and stress has been significantly decreased from 8.6 to 5.1 and 24.8 to 13.5 respectively while for the CG, mindfulness has been decreased slightly from 3.29 to 3.13; depressive symptoms and stress has been slightly increased from 7.1 to 7.3 and 24.1 to 27.1 respectively. Three mixed-design ANOVAs with time (T1, T2) as the within-subjects factor and intervention group (MAG, CG) as the between-subjects factor revealed a main effect of time on mindfulness,  $F(1, 41) = 10.28$ ,  $p < 0.01$ , depressive symptoms,  $F(1, 41) = 6.55$ ,  $p < 0.02$  and stress,  $F(1, 41) = 16.96$ ,  $p < 0.001$  respectively. Both predicted interaction between time and intervention group on mindfulness,  $F(1, 41) = 26.6$ ,  $p < 0.001$ ,  $\eta^2 = 0.39$ , depressive symptoms,  $F(1, 41) = 8.00$ ,  $p < 0.01$ ,  $\eta^2 = 0.16$  and Stress  $F(1, 41) = 49.3$ ,  $p < 0.001$ ,  $\eta^2 = 0.55$  were significant meaning that participants using the Mindfulness Mobile App in the intervention did experienced a significant increase in mindfulness and significant decrease in depressive symptoms and perceived level of stress after the 4-week intervention when compared with the control group. The present study provided encouraging empirical support for using Smiling Mind, a self-help mobile app, to promote mindfulness and mental health in a cost-effective way. Further studies should examine the potential use of Smiling Mind in different samples, including children and adolescence, as well as, investigate the lasting effects of using the app on other psychosocial outcomes such as emotional regulations.

**Keywords :** college athletes, experimental study, mindfulness mobile apps, psychological well-being

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