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de Entrambasaguas, M., Díaz-Silveira, C., Burgos-Julián, F. A., & Santed, M. A. (n.d.). **Can mindfulness-based interventions improve outcomes in cognitive-behavioural therapy for chronic insomnia disorder in the general population? Systematic review and meta-analysis.** *Clinical Psychology & Psychotherapy*. [link]

Lorenzetti, V., Gaillard, A., Beyer, E., …& Gleeson, J. (2023). **Do mindfulness-based interventions change brain function in people with substance dependence? A systematic review of the fMRI evidence.** *BMC Psychiatry*. [link]

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Malin, Y. (2023). **Others in Mind: A Systematic Review and Meta-Analysis of the Relationship Between Mindfulness and Prosociality.** *Mindfulness*. [link]

Mueller, J., Weinig, J., Niederer, D., …& Mueller, S. (2023). **Resistance, motor control and mindfulness-based exercises are effective for treating chronic non-specific neck pain: A systematic review with meta-analysis and dose-response meta-regression.** *Journal of Orthopaedic & Sports Physical Therapy*. [link]

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University of Kentucky (A. Meadows, PI). **Improving opioid use disorder treatment retention outcomes using mindfulness in childhood trauma survivors.** NIH/NIDA project # 1K23DA054309-01A1. [link]

University of Pittsburgh (T. Kamarck, PI). **Smartphone-based mindfulness intervention for reducing stress related CVD risk.** NIH/NHLBI project # 1R34HL163245-01A1. [link]

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Highlights

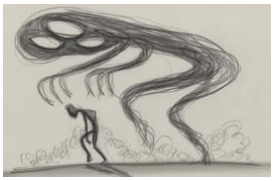
A summary of select studies from the issue, providing a snapshot of some of the latest research

Almost one-third of all Americans will experience some form of anxiety disorder at some point in their lives. Behavioral scientists are trying to improve their understanding of anxiety disorders and find the most effective treatments. In one recent experimental paradigm, fear was defined as a response to a specific threat, while anxiety was defined as a response to the unpredictable possibility of encountering a threat. Within this paradigm, people with anxiety disorders show higher levels of anxiety compared to healthy controls, but not higher levels of fear.

Hoge et al. [*Biological Psychiatry*] used this paradigm to compare the effects of Mindfulness-Based Stress Reduction (MBSR) and antidepressant medication on objective and subjective measures of fear and anxiety in individuals with anxiety disorders.

The researchers recruited a sample of 93 adults with anxiety disorders and 66 healthy controls (average age=33 years; 72% female; 63% Caucasian). Participants attended baseline lab sessions to measure their startle responses to fear- and anxiety-provoking stimuli. Participants with anxiety disorders were then randomly assigned to either participate in a standard 8-week MBSR program or receive a daily dose of escitalopram (the generic form of Lexapro) for eight weeks. The healthy controls received no intervention. At the end of the eight weeks, participants repeated the lab measure again to assess anxiety and fear responses. Participants also completed self-report measures of anxiety during both the baseline and post-intervention evaluations.

During the lab sessions, participants sat at a computer that displayed a series of images consisting of green circles, blue triangles, and red squares. Participants were administered annoying (but not painful) electrical shocks in conjunction with these visual stimuli. Prior to the presentation of each image series, the computer screen provided information about the nature of the trial. Some trials involved no electrical shocks (neutral trials), while in others, shocks were administered only when a red triangle was present (predictable shock trials). There were also trials where shocks could occur during any stimulus (unpredictable shock trials). An electromyogram (EMG) was used to measure the magnitude of each participants' eye blinks—an objective measure of startle response—after exposure to each image. Eye blinks during predictable shock trials were classified as fear startle responses, whereas those during unpredictable shock trials were classified as anxiety startle responses.



Results showed that the group with anxiety disorders had significantly higher anxiety startle responses at baseline compared to the healthy control group. However, their response magnitudes significantly decreased after the intervention, leading to no significant difference between the two groups post-intervention. The reduction in anxiety startle responses was significantly greater for the escitalopram group than the MBSR group. Subjective anxiety ratings decreased significantly for both intervention groups, a change that was significantly correlated with decreases in the anxiety startle response (r=.27) but not the fear startle response (r=.07). Intervention and control groups did not differ in the magnitude of their fear startle responses at baseline or post-intervention. While the MBSR group significantly reduced fear startle responses and fear subjective ratings from pre- to post-intervention, the escitalopram group did not.

The study shows that both MBSR and escitalopram reduce objective and subjective levels of anxiety so that participants with

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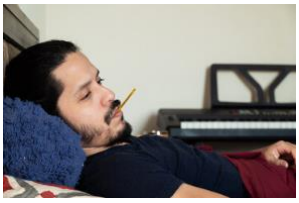
anxiety-disorders in both interventions no longer differed from healthy controls after intervention. Escitalopram reduced the magnitude of anxiety startle responses more than MBSR, whereas MBSR reduced the magnitude of fear startle responses more than escitalopram. This discrepancy suggests the involvement of distinct mechanisms of action for each intervention. The study is limited by the absence of a non-intervention control condition for participants with anxiety disorders.

Workplace Mindfulness-Based Interventions (MBIs) can result in increased well-being for employees, but do these benefits translate into objective measures such as reduced absenteeism? In a previously published study, researchers demonstrated that a workplace MBI could reduce the mental distress of supervisory staff and improve their health-related self-care. Using a quasi-experimental design, **Vonderlin et al. [*Mindfulness*]** examined sick days from participants in the earlier study relative to a comparison group to test whether the MBI also reduced supervisor and supervisee absenteeism.

Twelve German corporations participated in the original study, with five of those corporations agreeing to have employee data used for the current study. Employee sick days were extracted from health insurance company records, limiting the data to employees insured by the cooperating health insurance company. As a result, the available sample comprised 13 supervisors out of the 147 who initially took part in the MBI. These supervisors supervised a total of 186 employees who were also covered by the cooperating insurance company and whose data could be retrieved. Supervisor and supervisee sick day data were then compared with sick day data from a propensity score matched comparison group of 269 supervisors and 1,352 supervisees selected from a larger pool of enrollees from the cooperating health insurance company. Propensity score matching included matching for age, sex, employment status, and whether they were supervisory or supervised staff. The final sample averaged 44 years of age and was 78% female. The majority (88%) were employed in health care facilities such as hospitals and nursing homes.

The MBI program consisted of three full-day training sessions and two 3-hour booster sessions, with each session scheduled 4 weeks apart. The content of the MBI emphasized health-promoting self-care, health-promoting staff care, and addressing issues faced by stressed employees. The mindfulness training was derived from Dialectical Behavioral Therapy's mindfulness skills training module which involves mindfulness under daily life conditions rather than formal meditation practice. Sick days were recorded for two years before and two years after the MBI program.



The results showed that the group of MBI-trained supervisors had significantly reduced their average non-mental health related sick days from 33 days per two years to 14 sick days per two years, while the control group slightly increased sick days from an average of 32 to 34 days per two year period, a between group difference with a Cohen's d=0.47. There was no group difference for mental health related sick days.

It is worth noting that a closer analysis of the MBI-trained supervisor group indicated that the average non-mental health sick days can mislead. This was primarily due to one supervisor who took 215 sick days prior to the intervention. When median sick days were considered instead of mean sick days, the median for MBI-trained supervisors increased from 6 to 7 days, while the comparison group's median increased from 9 to 11 days. German historical workplace data show that average sick

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days tend to increase annually. No significance test was offered for this difference. There were no within- or between-group significant differences in supervisee sick days.

The study suggests a workplace MBI, in addition to reducing mental distress and improving health related self-care, may reduce or slow the annual increase in supervisors' sick days. The interpretation is complicated by multiple factors, including: 1) German health insurance companies only record sick days when there are more than three consecutive days absent, 2) the intervention group was small and had one influential outlier, 3) the comparison group was not a randomly-assigned control group, and 4) the mindfulness intervention did not involve formal meditation practice.