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Florida International University (M. Hospital, PI). **A Reinforced Mindfulness-Based Intervention to Reduce Problematic Drinking among Latinx Emerging Adults: Feasibility and Acceptability.** NIH/NIAAA project # 1R01AA030976-01. [link]

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Highlights

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

Inadequate diet and high stress during pregnancy are risk factors for having low birthweight infants and experiencing poorer cognitive and social development in early childhood. Improving dietary intake and reducing maternal stress during pregnancy may yield long-term benefits for their children's later development. **Crovetto et al. [*JAMA Network Open*]** conducted a study to test the long-term effects of Mindfulness-Based Stress Reduction (MBSR) or a Mediterranean diet intervention compared to treatment as usual for pregnant women on toddler development.

The study recruited 1,221 Barcelonian mid-gestation pregnant women who were assessed as being at high-risk for delivering low birthweight infants. The prospective mothers were randomly assigned to usual treatment alone, usual treatment plus MBSR, or usual treatment plus a Mediterranean diet. MBSR consisted of eight 2.5 hour weekly group sessions, a full day retreat, and home practice. It used a standard MBSR syllabus that included a specialized focus on maternal yoga and mothers' relationships with their fetuses.

The Mediterranean diet intervention consisted of monthly 30-minute assessments and 1-hour group sessions conducted by trained nutritionists. Participants were provided with 2 liters of extra virgin olive oil and 450 grams of walnuts each month, along with weekly suggested shopping lists, detailed meal plans, and menus. The usual care group received pregnancy care according to institutional protocols. Adherence was 72% in the Mediterranean diet group (based on a ≥ 3 point pre-post improvement on a 17 item dietary adherence questionnaire) and 64% in the MBSR group (based on attendance of ≥6 group sessions).

All participants completed dietary questionnaires, and a randomly selected subset (47%) of the sample underwent blood and urine draws to assess biomarkers of walnut and olive oil consumption at both baseline and the final visit. Participants were also assessed on measures of stress, anxiety, wellbeing, and mindfulness. A separate randomly selected subset (27%) of the sample had 24-hour measures of urinary stress hormones at both baseline and the final visit.

In a separately published study, MBSR mothers (16%) and Mediterranean diet mothers (15%) were less likely to deliver low birthweight infants than usual care mothers (22%). In the present study, 626 toddlers (53% male; average age = 25 months) from the women in that original study were assessed on cognitive, language, motor, and social-emotional development and adaptive behavior using the Bayley Scales of Infant and Toddler Development. The number of toddlers is lower than the study sample of mothers, mainly due to difficulties in locating mothers for follow-up or obtaining their consent.

The results showed that Mediterranean diet toddlers had significantly higher Bayley cognitive and social-emotional scores than usual care toddlers. MBSR toddlers had significantly higher Bayley social-emotional scores than usual care toddlers, although the effect size was small. Mediterranean diet adherence (regardless of group) was significantly positively associated with Bayley cognitive and language scores. Higher levels of consumption of foods containing docosahexaenoic acid was associated with significantly better language scores, while higher consumption of foods containing trans fats was inversely associated with social-emotional scores and language scores. Maternal levels of stress and anxiety during pregnancy , irrespective of the group, showed significant negative associations with all five Bayley scales. Several FFMQ subscales (especially Describing and Acting with Awareness) showed significant positive associations with multiple Bayley scales.

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The study shows improved maternal diet and MBSR during pregnancy have positive long-term effects on early childhood development for mothers at risk of having low birthweight babies. Adding nutritional support and mindfulness meditation to maternity care-as-usual for high-risk mothers could have a significant impact on the lives of children, their families, and on the social competencies gained by society in general.

Contemplative practices such as mindfulness, lovingkindness, and self-compassion may have different effects on humans, and these differences may become obscured when they are combined in interventions. Certain practices may prove more effective than others in remedying specific types of mental and physical health problems. **Petzold et al. [*Scientific Reports*]** compared the immediate mental effects of using two different types of contemplative practice apps: a mindfulness meditation app and a social-emotional app.

The researchers randomly assigned 212 German-speaking Berlin residents (average age = 44 years; 73% Female) to use either a mindfulness meditation app or a social-emotional Affect Dyad app. Participants in both conditions participated in 2.5-hour orientation webinars and proceeded to 10 weeks of app use. Participants used the apps six days a week, and on the seventh day of each week participated in 2-hour on-line group coaching sessions. The mindfulness app contained 12-minute guided breath-focused, sensory, and open monitoring meditations. Mindfulness coaching sessions emphasized bodily and sensory awareness, dealing with difficult emotions, and cultivating an attitude of dignity and respect towards oneself.

The Affect Dyad app paired participants with another participant to discuss two recent events—one that elicited difficult emotions and one that elicited gratitude—and describe how those emotions affected their bodies. Participants spoke for 6 minutes while their partner listened without interruption, and then switched roles. Affect Dyad coaching sessions emphasized social connectedness, non-judgmental listening, bodily awareness, dealing with difficult emotions, and cultivating care and gratitude.

Participants rated their thoughts and affect prior to and after daily app sessions. Thoughts were rated for temporality (about past, present, or future), social orientation (about self or other) and emotional valence (positive or negative). Affect was rated for emotional valence and intensity. The data enabled researchers to compare immediate changes in thought and affect resulting from app use and analyze group differences in these changes. These were immediate mental changes due to engaging with the app and not long-term results from engaging in these interventions over a period of 10 weeks. There were no significant between- or within-group long-term changes in thought and affect.

The results showed that mindfulness meditation app group significantly reduced future-oriented, negative, and other-oriented thoughts while increasing positive affect and affect intensity. In contrast, the Affect Dyad app group significantly reduced future-oriented thoughts, increased past-oriented and other-oriented thoughts, and raised positive affect and affect intensity. Self-oriented thoughts increased for both groups but did so significantly more for the Affect Dyad group compared to the mindfulness group.

The researchers interpreted these results as showing that mindfulness meditation app reduces thinking and improves mood through "calming the mind," whereas the Affect Dyad app increases past-, self-, and other-directed thoughts and improves mood through enhancing social connection and caring. While both apps showed substantial immediate short-term effects, it is unclear whether they yield meaningful long-term effects. Smartphone apps are becoming an increasingly important way people engage with contemplative practices—meditation apps now have 185 million users—and this study's combining of daily app practice with weekly on-line coaching seems one promising way to scale-up engagement with these practices.