Title: Feasibility and Utility of a Mindfulness App to Address Maternal Stress in Mothers of Children with Fragile X Syndrome and Autism Spectrum Disorders

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Introduction: In-person mindfulness-based training sessions have been shown to be effective in alleviating maternal stress-related outcomes among mothers of children with intellectual and developmental disabilities (IDD). However, participation in in-person mindfulness sessions may not be possible for all mothers of children with an IDD due to barriers such as geographical location, childcare issues, and time. Thus, the main goal of this study was to assess the feasibility and adherence of a smartphone app-based mindfulness training program among mothers of children with fragile X syndrome (FXS) and mothers of children with autism spectrum disorders (ASD).

Method: We recruited 18 mothers of a child with FXS (“FXS moms”) and 16 mothers of a child with ASD (“ASD moms”). Participants were asked to download the mindfulness smartphone app and complete a short mindfulness training program (10, 10-minute mindfulness sessions to be completed in 10 consecutive days). Participants were also asked to complete a set of questionnaires to assess maternal stress and mental health outcomes and a semi-structured interview to obtain their feedback on the app following completion of the training program. In addition, data on participant usage of the app was obtained from the developers of the app to track participant adherence to completing the program.

Results: Self-reported adherence and access data provided by the developer of the mindfulness app indicated that 62% [72% (n=13) FXS moms and 50% (n=8) ASD moms] completed the mindfulness program. Of those who completed the mindfulness program, most [81%; 77% (n=10) FXS moms and 88% (n=7) ASD moms] found it helpful and indicated interest in continuing to use the app (67%; 62% (n=8) FXS moms and 75% (n=6) ASD moms). The benefits of using the app reported by participants included taking the time for herself, feeling more relaxed and calm, feeling more focused, and better sleep. Barriers identified with using the app included trouble remembering to do the sessions, lack of time, the cost of a full subscription to access additional trainings, interest in a mindfulness app but wanting to try a different app, and technical issues with using the app. Mothers who were younger and experiencing higher parenting stress, increased symptoms of anxiety, and increased symptoms of ASD were more likely to find the mindfulness program to be helpful. However, mothers with younger children and increased symptoms of depression were less likely to complete the program.

Discussion: The results of this study indicate that an app-based mindfulness program is feasible among mothers of children with FXS and mothers of children with ASD, though not all are adherent. The lack of comparison group and short timeline preclude strong conclusions about the effectiveness of the intervention; however, the low cost and high accessibility of this intervention and the positive responses of women in our sample, clinicians may consider recommending app-based mindfulness to mothers of children with IDD if they seem likely to benefit.

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