



Effects of maternal deprivation stress and social isolation on depressive and anxious behaviors: potential therapeutic value of *Cannabis sativa* oils in animal models

Poster

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Major Depressive Disorder (MDD) is a complex condition where childhood trauma and chronic stress contribute to neural and systemic dysfunctions. Animal models, such as maternal deprivation (MD) and social isolation (SI), are used to mimic these factors. Resistance to conventional antidepressants has driven the search for new therapies, including *Cannabis sativa* compounds. This study aimed to evaluate the effects of chronic treatment with *Cannabis sativa* oils on depressive- and anxiety-like behaviors. A total of 110 Wistar rats (55 males and 55 females) were assigned to experimental groups. Animals underwent MD in early life and SI in young adulthood. Experimental groups include: (1) stress-free control treated with vehicle; (2) MD + SI treated with vehicle; (3) MD + SI treated with escitalopram; (4) MD + SI treated with full-spectrum *Cannabis sativa* oil; and (5) MD + SI treated with isolated cannabidiol oil. Treatments were administered orally for 14 days. Depressive- and anxiety-like behaviors were assessed through behavioral tests. The findings demonstrate that MD and SI

successfully induced depressive- and anxious-like behaviors in animal models. In the Forced Swim Test, isolated CBD effectively reduced immobility (depressive-like behavior) in male rats, while both isolated CBD and full-spectrum oil reduced immobility in female rats. In the Elevated Plus Maze, isolated CBD increased open-arm exploration (reduced anxiety-like behavior) in male rats, and both isolated CBD and full-spectrum oil modulated anxious behaviors in female rats. This highlights the therapeutic potential of *Cannabis sativa* derivatives, particularly isolated CBD, while emphasizing that sex-related factors significantly influence treatment efficacy

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