Cannabidiol Reduces the Experience of Pain in Individuals with Chronic Pain

Authors: Gyongyosi, E., Hooper, J., Mueller, R., Hutchison, K.

Opioid use in the United States has soared to an epidemic, causing hundreds of thousands of people a year to die from an overdose. With opioids being one of the most commonly prescribed pain medications, it is important to identify new, readily available interventions that may be used to treat pain without the absorbently high risk of addiction and overdose. Previous research shows that CBD is an effective tool in the management of chronic pain. However, since pain is a subjective experience, more research is needed to better understand what aspects of pain CBD is most beneficial in treating. Since individuals tolerate pain differently, assessing pain psychosomatically might be more predictive of negative health outcomes than assessing pain somatically. Consequently, the research at present seeks to investigate if CBD is effective in improving pain catastrophizing over time. The present study aimed to compare the effects of hemp-derived CBD with THC, to CBD without THC, to a placebo condition on self reported feelings of pain.

Individuals with chronic pain enrolled in a randomized, double blind, phase 2 clinical trial assessing the efficacy of CBD in reducing pain and/or opioid medication were recruited and randomly assigned to one of three conditions: Full-spectrum CBD [fsCBD (0.3% THC), n=43, *M*=42.56, *SD*=13.85, 79% Female], Broad-spectrum CBD [bsCBD, n=46, Mean age (*M*)= 50.65, Standard Deviation (*SD*)=14.76, 80% Female], and Placebo [PL (Hemp-seed oil), n=36, *M*=39.00, *SD*=13.91, 91% Female]. Participants self-administered 210 mg daily oral doses of study medication over an 12-week trial period and were assessed on various measures including the Pain Catastrophizing Scale (PCS). Measures were collected at three in-person visits: baseline (before treatment), week 6 (study midpoint), and week 12 (end of treatment). A mixed ANOVA with repeated measures was used to evaluate PCS scores across timepoints.

Although the omnibus test was not significant, pairwise comparisons revealed a significant simple effect of time within each condition. PCS scores significantly decreased within the bsCBD condition from baseline to week 6 (p=.005) and from baseline to week 12 (p=.002). PCS scores significantly decreased within the fsCBD condition from baseline to week 6 (p=.001) and from baseline to week 12 (p=.002). PCS scores did not significantly decrease within the placebo condition from baseline to week 6. However, PCS scores significantly decreased within the placebo condition from week 6 to week 12 (p=.006) and from baseline to week 12 (p=.001).

In conclusion, CBD demonstrated a notable decrease in pain catastrophizing, advocating for its potential as a pain management tool. Despite possible plateau and placebo effects, the main results describe a significant therapeutic potential in cannabidiol for chronic pain, and justify further investigation.