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EFFECTS OF A PROBIOTIC FORMULATION AFTER EXPERIMENTALLY INDUCED STRESS IN AN ADULT POPULATION

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Rationale: Probiotics have emerged as a promising way to modulate gut-brain axis and alleviate stress and anxiety, contributing to cognitive-related functions (1). The aim of the present study was to evaluate the effects of a probiotic formulation comprising *Levilactobacillus brevis* KABP052 (CECT7480) and *Lactiplantibacillus plantarum* KABP023 (CECT7485) on the physiological response to induced stress and in psychomotor function in adults.
Methods: Healthy non-stressed subjects >18 years, who did not have psychological disorders and were not taking central nervous system drugs were included. After a two-week run-in period, participants were randomized to receive 1 capsule/day of either probiotic ($1x10^9$cfu/capsule) or placebo (maltodextrin) for 4 weeks. At initial and final visit, stress was evaluated by means of Perceived Stress Scale (PSS) test within a broader assessment protocol. At final study visit, stress was experimentally induced by using the Trier Social Stress Test Protocol (TSST) and cognitive function was assessed using the Cambridge Neuropsychological Test Automated Battery (CANTAB), comprising evaluation of psychomotor function by response latency to correct answers in the Motor Screening Task (MOTML), which gives information about attention and psychomotor components. Increased MOTML scores are related to aging and mood disturbances (2,3). Over TSST, cortisol concentrations were analyzed in saliva by ELISA.
Results: 80 participants finalized the follow-up. Demographic variables at baseline did not differ between probiotic and placebo groups. Stress scores evaluated by PSS were medium to low and there were no differences between groups. During TSST protocol, cortisol levels increased in both groups, but no significant differences were observed between them. After TSST, MOTML values were significantly lower in the probiotic than in placebo group (-31.72 vs 37.84; p=0.0137). Increase in cortisol concentrations during TSST were positively correlated with MOTML in the control group (r=0.45, p=0.001), but not in the probiotic group (r=0.113, p=0.47).
Conclusion: The results from this study suggest that probiotic formulation in a healthy population subjected to a stressful situation may have positive effects in psychomotor function and attention. The improvement in psychomotor speed and accuracy could be considered as a cognitive protector.
References: 1. Del Toro-Barbosa M, et al. Nutrients, 2020:12(12):3896. 2. Darbutas T, et al. D. Medicina, 2013:49(1), 18–22. 3. Andriuta D, et al. Dementia and geriatric cognitive disorders 2019: 47(4-6), 281–288.

Disclosure of Interest: None Declared

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