CAN BMI BE A MEDIATOR IN THE CORRELATION BETWEEN DEPRESSION, INFLAMMATORY CYTOKINES, AND PLASMA BDNF LEVELS?
Fabiane Dresch, Rosa Maria Levandovski, Ana Beatriz Cauduro Harb, Camila Morelatto de Souza, Bianca Pfaffenseller, Clarissa Severino Gama, Maria Paz Loayza Hidalgo

Introduction: Studies show a relationship between inflammatory cytokines and health problems, mainly with higher body mass index (BMI). The aim of this study was to evaluate the effect of BMI as a mediator in the correlation between depressive symptoms, cytokines and BDNF.

Material and Method: Epidemiological study with a rural population in southern Brazil. Demographic characteristics, BMI and treatment status were assessed by a validated questionnaire and depressive symptoms by BDI scale. Plasma inflammatory markers were measured by flow cytometry and plasma BDNF levels by sandwich enzyme immunoassay. t-test, Mann-Whitney test, Pearson's correlations and multivariate logistic regression analysis were used.

Results: One hundred fifty-five subjects (54 men, age = 43.5 ± 12.8) were included. 55.5% had normal weight, 29% overweight and 15.5% obesity. 19.4% was screened for depression and 6% presented moderate-to-severe depression symptoms. Significant correlation was found between BMI and IL-6 (p=0.003) and BDNF (p=0.014). Multivariate model, included cytokines, BDNF and depressive symptoms, explained 14% of the variance for overweight (F= 3.704; R= 0.136; p= 0.001). In the model, when controlling for possible confounding factors, only overweight remained significantly associated with IL-6 and BDNF.

Conclusion: This study suggests that BMI may be an important confounding factor in the correlation between BDI and BDNF and inflammatory cytokines.