

## **Abstract**

Anxiety may affect various cognitive functions, including working memory. The current study examined whether trait anxiety affects verbal working memory, with variable cognitive load, in the face of non-emotional verbal stimuli in healthy individuals. The research hypothesis was that under high cognitive load, there would be a decrease in accuracy and an increase in reaction time among the group of subjects with relatively high trait anxiety, compared to the group of subjects with relatively low trait anxiety. Healthy subjects aged 25–45 participated in the study. They filled out a questionnaire to define trait anxiety level (STAI) and performed a verbal n-back task, which tested their working memory performance. The findings of the study showed that the level of cognitive load has an effect on working memory performance, but no significant difference was found in working memory performance between participants with a high level of trait anxiety in relation to participants with a low level of anxiety in the performance of the high load working memory task or in lower cognitive loads. These results contradict previous findings and may be due to the limitations of the study (a small sample and a general and non-clinical population). However, findings regarding performance differences at different levels of cognitive load (beyond anxiety levels) were similar to previous findings. A relationship was also found between education levels and cognitive function, which suggests a potential effect of involvement in learning and cognitive function. The main conclusion points to the possibility that a more heterogeneous population is required in terms of working memory functions, age, and gender, while controlling for the variable of years of study (academics), in order to more sensitively characterize the effects of cognitive load in people suffering from different levels of anxiety. In addition, examining a clinical comparison group of patients suffering from an anxiety disorder may shed light on clearer differences in functions between the groups at the various levels of cognitive load.