Verbal working memory in individuals with autism

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Previous research showed that working memory (WM) associates with solving problems, focusing attention, learning and developing abstract thinking (Williams, 2005). In turn, violation in WM leads in impairment in performing of these tasks and decrease of effectiveness of cognitive functions. All aforementioned difficulties were found in individuals with autism. In particular, Williams’s research shows that differences in the functioning of working memory are more associated with spatial WM, while the verbal WM does not practically differ in norm and pathology. However, other works revealed that individuals with autism have some problems in resolving of linguistic WM tasks (Minshew, Goldstein, & Siegel, 1995), where participants had a deal with remembering of sentences. Thus, the issue about verbal WM in individuals with autism is still unresolved. The aim of the current work is to examine whether verbal WM has differences in norm and pathology and whether various tasks give different results. The series of experiments was conducted to test verbal WM (N-back tasks). Experiment 1 (N-back letter task) replicated the experiment of the study by Williams (2005). To understand whether there is a difference between remembering a set of letters without any semantic content and meaningful words the experiment 2 (N-back word task) was carried out. We expect that the verbal WM in individuals with autism and in individuals without any cognitive impairment could differ in word task, while in letter task results in two groups of participants will be the same. The data obtained can be useful for understanding the features of the processing and remembering information by individuals with autism.

Keywords: verbal working memory, autism, language processing.