

Assessment of the attentional processes in patients with anxiety-depressive disorders through virtual reality

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Introduction

VR tests can identify subtle deficits that are often undetected by traditional neuropsychological tests (Pallavicini et al., 2015) and therefore, VR allows a more accurate assessment. It is important to emphasize that the technology does not make the test, but merely provides the means for achieving the above advantages. Also, the test must be validated, with a consistent theoretical base and correct psychometry. Just like any other neuropsychological test performed on pen and paper or computerized, Nesplora Aquarium (Climent et al., 2019) is a validated VR test that can predict ADHD symptoms in adults and adolescents (Areces, García, Cueli, & Rodríguez, 2019).

Aims

The purpose of this study is to characterize the attention deficits in a sample in these 2 types of clinical profiles through a continuous execution test in virtual reality

Methods

One-hundred-fifteen participants diagnosed with an affective disorder or anxiety disorder using the DSM-5 criteria who attended outpatient mental health consultations were included in this clinical study. All participants were recruited by consecutive sampling. The evaluations were carried out between November 2017 and May 2018. All tests were applied in all centres under similar conditions. The three tests that have been used for this study are Nesplora Aquarium, BDI and STAI. The data analysis was performed with IBM SPSS Statistics Base software (Version 23.0.0).

Results

Here, we show that significant differences (CI = 95%) can be seen between the control group and the group with depression in the variables related to the speed of visual processing (p = 0.008) in the absence of distractors (p = 0.041) and during the first dual execution task (p = 0.012) (See Table 1). Unlike in the clinical depression group, no significant differences were observed in any of the variables related to the processing speed of patients with anxiety disorders, compared to control subjects. If significant differences (CI = 95%) can be seen between the control group and the anxiety group in all variables related to the level of attentional arousal, that would indicate a lower performance of the clinical group with anxiety in this function. Both patients with depression and anxiety did not differ from controls in scores related to sustained attention



Table 1. Contrast o	f means between grou	p with depression and
anxiety and controls	. Processing speed	

Variable	Depression and controls			Anxiety and controls		
	U	z	р	U	z	р
Mean of the reaction time correct answers (MRTCA)	523.1	0.491	0.062	1824	-1207	0.221
Visual right MRTCA	423.4	-1.554	0.008*	1861	-1.234	0.267
Auditory MRTCA	547.3	-1.482	0.158	1784	-1.415	0.160
Distractors affected items MRTCA	562.3	-1.383	0.171	1804	-1.383	0.188
Non distractor affected items	492.3	-2.082	0.041*	1861	-1.123	0.273
XnoDUALab_MRTCA	441.1	-2.227	0.012*	1759	-2.332	0.138
XnoDUALba_MRTCA	528.3	-1.659	0.092	1923	-2.077	0.379

Note. Mann-Whitney U test Note. For all tests, the altern

wate: waintrwining utes; Nate: For all tests, the alternative hypothesis specifies that control group is less than depression group. XnoDUALab_MRTCA = Mean of reaction time of correct answers from block 2 of task XnoDUALab and correct responses from block 1 of task XnoDUALab_MRTCA = Mean of reaction time of correct answers from block 2 of task XnoDUALab and correct responses from block 1 of XnoDUALab_MRTCA = Mean of reaction time of correct answers from block 2 of task XnoDUALab and correct responses from block 1 of task XnoDUALab_MRTCA = Mean of reaction time of correct answers from block 2 of task XnoDUALab and correct responses from block 1 of task

task XnoDUALba *p <.05 **p<.01

Conclusions

Therefore, our results suggest that attentional deficits are present in both clinical populations when performing a continuous execution test with dual execution components that involve the participation of the central executive system of working memory.

References

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