Virtual Reality Assessment of Checking Symptoms in Patients with Obsessive Compulsive Disorder

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Objective

Virtual reality(VR) is being used in many field of psychiatry and psychology. However, there are few cases of its application to obsessive compulsive disorder(OCD). We developed virtual reality system for OCD. The aim of this study is to assess the checking symptoms in patients with OCD using Severance virtual reality system for OCD(SeVROS). the primary or first author.

- ❖Obsessive-compulsive disorder (OCD) is a clinically heterogeneous disorder.
- ❖Two main types of compulsions in OCD : Checking and Cleaning.

Jenike et al., 1990

Causes of checking compulsion in OCD

Impairment of memory	Low confidence of memory
1.More nonverbal memory deficits	1.Doubt of one's ability to recall
2.Less verbal memory impairments	2.Whether correctly completed
Moritz et al., 2005	*Rachman and Hodgson, 1980*

Limitations of previous studies

- Paper and pencil test or 2-D computerized test for assessment of visuospatial memory
- Self-report measures for confidence

Aim of this study

To find behavioral factors related to checking compulsion in patient with OCD using virtual environment.

ECHOLOGICAL STUDY

Methods

Twenty five patients with OCD and 14 normal controls volunteered for this study. The SeVROS-checking-type is Head Mounted Device(HMD) based VR system and has two virtual environment; office version and home version. Each virtual environment has 5 checking items with 5 distracting items. We used complete MINI(Mini International Neuropsychiatric Interview) for psychiatric evaluation. Other scales for assessment of OCD, depression, anxiety, quality of life, and feeling of presence were used. Intellectual function was also assessed.

Results

We classified the patients into 3 sub-group; checking-type, contamination-type, and symetric-type. The patients have more checking behavior than normal controls. The checking type patients have more checking behavior than other type patients. Two patients show low function of working memory. The SeVROS cuased anxiety to patients only.

		Checking type OCD	Non-checking type OCD	Control group	p-value
Demographic characteristics of participants	N	11	10	14	
	Age	31.91 ± 10.88	28.90 ± 6.59	28.93 ± 7.37	0.63
	Sex (M:F)	10:1	7:3	8:6	0.19
	Education (years)	13.73 ± 2.83	14.60 ± 1.96	15.07 ± 2.73	0.44
Patients' characteristics	YBOCS	26.36 ± 8.56	24.20 ± 6.91		0.53
	HAMD	12.36 ± 8.80	7.40 ± 7.41		0.18
VR parameters	Total checking time	333.64 ± 128.49	224.42 ± 82.76	176.44 ± 27.05	0.00
	Total number of over operation	6.45 ± 10.83	2.50 ± 2.72	1.14 ± 1.10	0.12
	Total gazing time	66.05 ± 41.06	39.46 ± 23.01	30.50 ± 12.19	0.01
	Incomplete items	3.55 ± 2.25	5.7 ± 4.27	4.79 ± 2.01	0.24

Conclusion

Virtual reality is useful in assessment of symptoms in patients with obsessive compulsive disorder. Furthermore it can give us more profound data of attention and visuospatial function in OCD patients. Further study for cognitive and behavioral treatment of OCD patients using SeVROS is being executed.

References

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