CLINICAL CHARACTERISTICS OF THE DEPRESSIVE GROUP IN BASELINE ASSESSMENT OF THE VIRTUAL REALITY PSYCHOEDUCATION AND SKILL TRAINING PROGRAM: INTERIM-ANALYSIS

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INTRODUCTION

Mental disorders are very common and cause significant distress in daily life. Particularly, patients with depression may have various clinical characteristics associated with functional impairment and increased suicidality.

Psychological treatments for depressive disorder are one of the best treatment options and the preference of patients. However, there are some significant barriers for providing psychological treatments in real world situations. Virtual reality-based program might satisfy unmet needs in treatment. This treatment specifically provides psychoeducation and skill training program for depressive patients via virtual reality.

In this study, we aim to verify the clinical utility of the VR programs for assessing baseline psychosocial problems and improving symptoms in treatment group. We investigated baseline characteristics of depressive participants compared with healthy control group. And we also evaluated the efficacy of VR treatment program compared with standard-pharmacotherapy for depressive patients.

METHODS

Participants

One hundred and five participants were recruited through internet advertisements . Fifty eight participants had enrolled in treatment group and been randomly allocated in a 1:1 ratio to either VR group or pharmacotherapy group. Twenty four participants had completed treatment and the final assessment 4 weeks later. Participants in healthy control group fell below the depression and suicidality entry criterion on the Patient Health Questionnaire, Korean Quick Inventory of Depressive Symptomatology scale, and Suicidality scales of the MINI interview. Participants in treatment group were verified for depression and suicidality by these three scales.

VR treatment program

Four 50-min sessions address psychotherapeutic education and skill training utilizing mentalization based therapy(MBT) and dialectical behavior treatment(DBT). Patient are also provided feedback after each session.

Assessments

At baseline, all participants were assessed with comprehensive battery for emotional distress by structured scales using VR technologies. To compare initial clinical characteristics and efficacy after treatment, the outcome variables included Patient Health Questionnaire (PHQ-9) for online screening and Korean Quick Inventory of Depressive Symptomatology scale (QIDS), Suicidality scales of the MINI interview. We also evaluated borderline personality (Personality Assessment Inventory – Borderline Features Scale, PAI-BOR) and resilience(Korean Resilience Questionnaire, KRQ-53).

Statistical Analysis

One way analysis of variance(ANOVA), Kruskal-Wallis test and Fisher’s test was applied to compare the baseline clinical features. Paired-T test and Wilcoxon signed rank test was performed for each treatment group to compare the difference between initial and 4 weeks after treatment. Independent T-test was performed to compare the difference between results.

RESULTS

Demographic data

There were no significant differences in age, gender and education between treatment group and healthy control group.

Variables		VR group (n=15)	Drug group (n=14)	Healthy group (n=20)
Age		33.07 (9.74)	31.86 (7.35)	32.05 (8.01)
Sex	M	1	4	1
	F	14	10	19
Education		16.71 (1.86)	15.86 (1.23)	17.22 (2.07)

Table 1. Demographic data. There were no significant differences between treatment group and control group. Values are presented as mean(standard deviation).

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RESULTS

Clinical features

In initial assessment, treatment group showed significantly higher depressive symptoms, suicidality, borderline personality trait and lower resilience than healthy control group. There were no differences in clinical features between VR group and pharmacotherapy group.

Variables		I. VR group (n=15)	II. Drug (n=14)	III. Control (n=20)	ANOVA p value	post hoc test p value		
		Mean (SD)	Mean (SD)	Mean (SD)		I vs. II	I vs. III	II vs. III
K-QIDS-SR		16.73 (5.57)	13.93 (4.38)	3.50 (2.78)	<0.001	0.123	<0.001	<0.001
Suicidality		2.80 (3.19)	2.93 (3.29)	0.60 (1.47)	0.009	0.983	0.017	0.025
PAI-BOR		28.87 (9.33)	31.07 (6.67)	18.20 (4.82)	<0.001	0.674	<0.001	<0.001
RSL total		164.73 (18.79)	169.57 (26.47)	198.90 (23.94)	<0.001	0.842	<0.001	0.002
RSL	POS	52.00 (7.67)	52.29 (10.45)	63.00 (10.54)	0.002	0.997	0.005	0.008
	SELF	55.73 (10.60)	55.50 (8.21)	66.05 (7.75)	0.001	0.996	0.004	0.004
	COM	57.00 (8.04)	61.79 (11.22)	69.85 (8.86)	0.001	0.362	0.001	0.045

Table 2. Comparison of baseline scales between treatment group and healthy control group. K-QIDS-SR, Korean version of Quick Inventory of Depressive Symptomatology-Self-Report; PAI-BOR, Personality Assessment Inventory – Borderline Features Scale; RLI, Resilience; POS, Positivity; SELF, Ability of self-regulation; COM. Ability of interpersonal relation

Efficacy results

The VR treatment group showed a significant improvement in depression, suicidality, borderline personality trait and resilience. There were no differences in treatment efficacy between VR group and pharmacotherapy group.

Variables		VR group (n=14)				Drug group (n=10)				*p Value
		Baseline	4wk f/u	t (z)	p value	Baseline	4wk f/u	t (z)	p value	
K-QIDS-SR		16.79(5.78)	9.21(4.87)	3.98	0.002	13.10(4.46)	5.80(4.21)	3.52	0.006	0.925
Suicidality		2.93(3.27)	1.17(2.21)	-2.04	0.041	3.20(2.94)	2.80(4.37)	0.27	0.793	0.752
PAI-BOR		29.21(9.58)	26.21(8.10)	3.86	0.002	31.10(5.86)	25.10(8.14)	2.88	0.018	0.203
RSL total		163.29 (18.62)	175.79 (20.23)	-3.61	0.003	176.40 (25.61)	186.50 (26.39)	-3.03	0.014	0.634
RSL	POS	52.00(7.96)	57.86(10.82)	-3.89	0.002	53.20(10.85)	56.40(10.96)	-2.08	0.068	0.243
	SELF	54.86(10.42)	58.64(9.60)	-3.11	0.008	58.20(6.80)	61.70(7.73)	-1.70	0.090	0.666
	COM	56.43(8.03)	59.29(7.17)	-1.71	0.112	65.00(10.68)	68.40(9.64)	-2.44	0.037	0.816

Table 3. Comparison of changes from baseline to 4 weeks after treatment between two groups. At the 4-weeks follow-up. K-QIDS-SR, Korean version of Quick Inventory of Depressive Symptomatology-Self-Report; PAI-BOR, Personality Assessment Inventory – Borderline Features Scale; RLI, Resilience; POS, Positivity; SELF, Ability of self-regulation; COM. Ability of interpersonal relation
* P value: p values between differences

CONCLUSION

There were significantly increased emotional distress and decreased resilience in the treatment group compared with the healthy control group in the baseline assessment. And VR treatment program has clear benefits for emotional distress and resilience in the depressive patients. Also, there were not differences in treatment efficacy between VR intervention and pharmacotherapy. VR treatment program could be considered as an approach to improve emotional distress and resilience in patient with depression.

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