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RESEARCH LETTER

Unguided self-help movie- and mobile-based therapy for patients with obsessive–compulsive disorder: Results of two pilot studies

Obsessive–compulsive disorder (OCD) is a serious disorder that can impair patients' lives. Psychotherapy showed a greater effect than medication in the treatment of OCD in a systematic review.[1] Another systematic review on randomized controlled studies showed that unguided computer-assisted self-help interventions for OCD are more effective than a waiting list or psychological placebo.[2] However, most researchers only used text-based interventions and no study has used a mobile device. Other applications were examined in exploratory noncomparative studies. But they had limitations (Supporting Information: Table S1). The aim of the two pilot studies was to examine the feasibility and effectiveness of unguided self-help mobile-based therapy using entertaining and engaging movies for OCD.

The design, inclusion and exclusion criteria of participants and ethical consideration are shown in Supporting Information: Table S1.

The intervention was unguided movie- and mobile-based therapy based on cognitive behavioral therapy. The program included 40 and 21 video clips over an 8-week period for Studies 1 and 2, respectively. Details of the treatment structure are shown in Supporting Information: Table S3. To motivate participation, adventure stories involving unique characters were available for optional viewing.

The primary outcomes were a self-administered version of the Yale–Brown Obsessive–Compulsive Scale (YBOCS)[3] to assess effectiveness and the percentage of sessions completed to assess acceptability. The secondary outcomes were the Obsessive–Compulsive Inventory Revised (OCI-R)[4] for OCD symptoms and the Patient Health Questionnaire-9 (PHQ-9)[5] for depression. The Overall Anxiety Severity and Impairment Scale (OASIS)[6] was used in Study 1 for anxiety and the EuroQol 5 Dimensions 5-Level (EQ-5D-5L)[7] was used in Study 2 for QOL, as anxiety is one of the primary symptoms of OCD and quality of life is one of the true treatment outcomes.

The sample size was three in each study. No statistical analysis of the difference was performed, and the results are presented descriptively.

The characteristics of participants are shown in Supporting Information: Table S4.

Table 1 presents the results. The YBOCS scores, as the primary effectiveness measure, improved in all participants in both studies. The change in scores from baseline to endpoint were −15, −5, and −5 in Study 1 and −6, −8, and −7 in Study 2 (Supporting Information: Table S5). In Study 1, one person's YBOCS scores decreased rapidly after Session 21, and one person's YBOCS scores decreased gradually as the sessions progressed. Study 2 showed a large decrease in YBOCS scores during the 2-week period, which was almost before entering the exposure and response prevention (ERP). The percentages of sessions completed were 47.5%, 27.5%, and 32.5% in Study 1 and 81.0%, 85.7%, and 100% in Study 2.

The secondary outcomes were almost comparable with the primary outcomes. The OCI-R, PHQ-9, OASIS, and EQ-5D-5L scores improved in all but two participants for both studies. The OASIS score worsened by one point in one participant in Study 1 and the OCI-R and PHQ-9 scores worsened by one and two points, respectively, in one participant in Study 2.

The results show that the unguided movie-based mobile therapy for OCD is potentially effective and acceptable. The extent of its effectiveness appears clinically meaningful, corresponding with one to three symptoms disappearing in the YBOCS. The improvement occurred in the initial phase of the study before ERP, which suggests that psychoeducation and self-monitoring may be important. The results of the secondary effective outcomes also indicate that the device may improve depression, anxiety, and QOL.

In the previous study of an application focused on the ERP component, YBOCS scores dropped from a baseline average of 21 points to 17 points at the end of the study.[8] This is lower than in our study. With regard to tolerability, about 70% of the respondents made some use of the system in the previous study, including 6.7% who used it several times a day, 33.3% who used it several times a week, and 26.7% who used it once a week.[8] This means that about 30% had poor utilization. On the other hand, all the participants in Study 2 completed more than 80% of all the sessions. It can be said that the tolerability was relatively high.

The present studies have several limitations: First, the true effect size cannot be inferred from a one-arm study. However, assuming that the patients may not have improved without adequate therapy,[9] the study program may still have been effective. Second, Pt4 and Pt5 were started on antidepressants at the beginning of treatment and

TABLE 1 Pre- and post-test scores of outcomes for effectiveness.

	Study 1			Study 2		
		Pre	Post		Pre	Post
YBOCS	Pt1	21	6	Pt4	21	15
	Pt2	21	16	Pt5	24	16
	Pt3	18	13	Pt6	26	19
OCI-R	Pt1	46	18	Pt4	37	15
	Pt2	23	14	Pt5	32	33
	Pt3	40	27	Pt6	48	33
PHQ-9	Pt1	4	1	Pt4	13	6
	Pt2	12	3	Pt5	8	10
	Pt3	27	16	Pt6	12	6
OASIS	Pt1	4	4	–	–	–
	Pt2	2	3	–	–	–
	Pt3	7	7	–	–	–
EQ-5D-5L	–	–	–	Pt4	0.71	0.87
	–	–	–	Pt5	0.71	0.73
	–	–	–	Pt6	0.56	0.77

Abbreviations: EQ-5D-5L, EuroQol 5 Dimensions 5-Level version; OASIS, Overall Anxiety Severity and Impairment Scale; OCI-R, Obsessive–Compulsive Inventory-Revised; PHQ-9, Primary Health Questionnaire-9; YBOCS, Yale–Brown Obsessive–Compulsive Scale.

may have been affected by antidepressant therapy. Third, the participants were not blinded, and the self-report method was used throughout. This may have led to an overestimation of the results. Fourth, the sample size was small. Therefore, a randomized controlled study with a sufficient sample size should be conducted in the future.

AUTHOR CONTRIBUTIONS

Hissei Imai conceived and designed the study. Toshi A. Furukawa supervised the study. Hissei Imai collected and cleaned the data and performed the analysis. Hissei Imai and Toshi A. Furukawa contributed to interpreting the data, and drafting and revising the manuscript. Hissei Imai and Toshi A. Furukawa approved the final version of the manuscript.

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CONFLICT OF INTEREST STATEMENT

H.I. reports no conflict of interest. T.A.F. reports personal fees from Boehringer-Ingelheim, Daiichi Sankyo, DT Axis, Kyoto University Original, Shionogi, SONY, and UpToDate, and a grant from DT Axis and Shionogi, outside the submitted work. In addition, T.A.F. has a patent 7448125, and a pending patent 2022-082495, and intellectual properties for Kokoro-app licensed to Mitsubishi-Tanabe.

DATA AVAILABILITY STATEMENT

Data are presented in the manuscript.

ETHICS APPROVAL STATEMENT

The study protocol was approved by the Kyoto University Ethical Review Board (C1562, C1614).

PATIENT CONSENT STATEMENT

All participants provided written informed consent.

CLINICAL TRIAL REGISTRATION

The study protocol was registered in UMIN Clinical Trials Registry (UMIN000048120).

Hissei Imai MD, PhD[1]
Toshi A. Furukawa MD, PhD[2]

[1]*Health Promotion and Human Behavior, Graduate School of Medicine, Kyoto University, Kyoto, Japan*
[2]*Office of Institutional Advancement and Communications, Kyoto University, Kyoto, Japan*

Correspondence
Hissei Imai, MD, PhD, Health Promotion and Human Behavior, Kyoto University Graduate School of Medicine/School of Public Health, Yoshida Konoe-cho, Sakyo-ku, Kyoto 606-8501, Japan.
Email: ihits@hotmail.com

ORCID

Hissei Imai http://orcid.org/0000-0003-3656-5188

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SUPPORTING INFORMATION

Additional supporting information can be found online in the Supporting Information section at the end of this article.