Efficacy of Seren@ctif, a Computer-Based Stress Management Program for Patients With Adjustment Disorder With Anxiety: A Randomized Controlled Trial

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Background and Aim. Stress is considered as a risk factor for a wide range of psychiatric and physical health problems, such as anxiety, depression, addictions, cardiovascular diseases, human immunodeficiency virus and cancers. Face-to-face cognitive behavioral stress-management interventions are proven to be the most appropriate and efficience treatment for stress. Considering the very large number of people who could benefit from such programs but are unable to access them, digital self-help programs have been proposed. They follow the same principles and models as face-to-face stress management interventions and are intended to limit the amount of contact time with a mental health professional. Web-based stress management interventions with guidance by written feedback sent by emails are nowadays considered as the common treatment. However, the effect sizes found for stress outcomes (Cohen d=0.64) are somewhat smaller than those found in traditional face-to-face interventions (Cohen d=1.007). Indeed, the adherence and the effectiveness to eHealth interventions is enhanced by human support. « Blended interventions » or « technology supported cares », with e-learning and a face-to-face component seems to be the recommended treatment. The main aim of this study is to compare the effectiveness of two standardized stress management program whose content is the same, but whose the one is conducted through face-to-face interviews (CBT), and the other is conducted via eLearning (iCBT) with a minimal contact time with a trained nurse, with a wait list control group (WLC). The secondary objective is to compare the two intervention groups with each other. The primary outcome is the change in State Trait Anxiety Inventory scale trait subscale (STAI) between baseline and 2-month visit. The study was carried out on patients with adjustment disorder with anxiety, which is classified as stress-related disorder.

Method. This is a randomized controlled study in 3 parallel groups : CBT, iCBT and WLC. Patients on waiting list receive usual health care from a general practitioner. Programs are based on standard CBT principles and include 5 modules in 5 weekly sessions. Patients are encouraged to practice a 20-minute daily exercise 5 or 6 times per week. Interviews and self-assessments were collected face-to-face with the investigator. Some photographs of the e-learning program are presented below :

While requiring only a minimal contact time with a mental health professional, a « blending intervention » of stress management mixing online and face-to-face component (iCBT) has not shown any significant differences with the same face-to-face intervention (CBT) on the reduction of anxiety, stress and depression and on the satisfaction.

Mean STAI score at baseline (V0) and at 2 months (V1) for both intervention groups compared to the control group

Variables	Control	Face-to-face	Delta's difference (V1-V0), adjusted to the V0's value		e-learning	Delta's difference (V1-V0), adjusted to the V0's value	
	Mean (IC95%)	Mean (CI95%)	Mean (CI95%)	p	Mean (CI95%)	Mean (CI95%)	p
STAI							
V0	54.5 (51.6 à 57.4)	55.3 (52.2 à 58.4)			57.8 (55.3 à 60.3)		
V1	54.4 (51.4 à 57.4)	43.3 (39.3 à 47.4)			41.7 (38.2 à 45.3)		
V1-V0	-0.1 (-2.5 à 2.2)	-11.9 (-16.0 à -7.8)	-11.5 (-15.9 à -7.1)	<0.001	-16.1 (-19.4 à -12.8)	-14.6 (-19.1 à -10.2)	<0.001
HAD anxiety							
V0	12.5 (11.8 à 13.2)	13.4 (12.5 à 14.2)			14.0 (13.2 à 14.9)		
V1	12.6 (11.5 à 13.6)	9.2 (8.0 à 10.3)			8.5 (7.6 à 9.5)		
V1-V0	-0.01 (-0.7 à 0.7)	-4.2 (-5.2 à -3.2)	-3.9 (-5.2 à -2.7)	<0.001	-5.5 (-6.5 à -4.5)	-5.01 (-6.3 à -3.9)	<0.001
HAD depression							
V0	5.5 (4.7 à 6.4)	6.0 (5.2 à 6.8)			6.3 (5.5 à 7.0)		
V1	6.0 (5.0 à 7.0)	5.1 (3.8 à 6.4)			3.5 (2.6 à 4.4)		
V1-V0	-0.5 (-0.4 à 1.4)	-0.9 (-2.1 à 0.3)	-1.2 (-2.6 à 0.2)	0.17	-2.8 (-3.6 à 2.0)	-3.0 (-4.3 à -1.7)	<0.001
PSS							
V0	46.8 (44.6 à 49.1)	47.8 (45.8 à 49.1)			47.8 (45.4 à 50.1)		
V1	46.3 (44.3 à 48.3)	39.6 (36.7 à 42.6)			38.0 (35.8 à 40.2)		
V1-V0	-0.5 (-2.4 à 1.3)	-8.2 (-11.0 à -5.4)	-7.2 (-10.3 à -4.1)	<0.001	-9.8 (-12.3 à 7.3)	-8.8 (-11.8 à -5.8)	<0.001
QIPS							
V0	46.8 (44.4 à 48.8)	47.6 (45.6 à 49.6)			48.3 (46.8 à 49.9)		
V1	46.3 (44.5 à 48.0)	43.7 (41.4 à 45.9)			42.2 (40.4 à 44.0)		
V1-V0	-0.5 (-2.6 à 1.5)	-4.0 (-6.1 à -1.9)	-3.0 (-5.4 à -0.5)	0.033	-6.1 (-7.9 à 4.3)	-4.8 (-7.2 à -2.4)	<0.001
BDI							
V0	7.7 (6.3 à 9.0)	8.9 (7.3 à 10.4)			9.4 (7.7 à 11.0)		
V1	7.5 (6.1 à 8.9)	6.0 (4.4 à 7.5)			6.1 (4.6 à 7.6)		
V1-V0	-0.2 (-1.3 à 1.0)	-2.9 (-4.6 à 1.3)	-2.3 (-4.0 à -0.5)	0.020	-3.3 (-4.5 à -2.0)	-2.4 (-4.1 à -0.6)	0.017
VAS-stress							
V0	71.6 (66.6 à 76.6)	73.6 (68.8 à 78.3)			75.3 (71.7 à 79.0)		
V1	66.9 (61.8 à 71.9)	38.6 (30.8 à 46.3)			33.9 (27.5 à 40.4)		
V1-V0	-4.7 (-10.1 à 0.7)	-35.0 (-42.5 à -27.4)	-29.2 (-37.6 à -20.7)	<0.001	-41.4 (-48.4 à -34.5)	-34.6 (-43.4 à -25.8)	<0.001

Results. 119 patients were included in this study. A significant improvement is highlighted on STAI (CBT: p <0.001; iCBT: p <0.001) and on almost all other self-report scales (HAD anxiety, PSS, QIPS, BDI, VAS-stress) at 2 months for the two intervention groups compared to the control group. On STAI (p=0.18), and on these other self-report scales, no significant difference in improvement can be highlighted between the two intervention groups. However, there is a significant improvement in HAD depression at 2 months, only for the e-learning group. There is no difference on the satisfaction of these two format of stress management program (p=0.92).

Discussion. This blending intervention mixing online and face-to-face component (iCBT) not showing any significant differences with the same face-to-face intervention (CBT), we would like to go further and make this program entirely remote, in order to allow the dissemination of this stress management program. To do this, other means could be used replaced from the face-to-face minimal contact time. This digital program could then be offered for patients with various stress-related disorders.

References. Erbe, D., Eichert, H.-C., Riper, H., & Ebert, D. D. (2017). Blending Face-to-Face and Internet-Based Interventions for the Treatment of Mental Disorders in Adults: Systematic Review. *Journal of Medical Internet Research*, 19(9), e306. <https://doi.org/10.2196/jmir.6588>
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