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Special article

Effectiveness of cognitive-behavioural therapy for post-disaster distress in post-traumatic stress symptoms after Chilean earthquake and tsunami

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ABSTRACT

Objective: This is the first time that the effectiveness of cognitive-behavioural therapy for post-disaster stress (CBT-PD) in symptoms of posttraumatic stress disorder (PTSD) has been tested outside the United States of America.
Design: Quasi-experiment with three groups. In the quasi-control group, complete CBT-PD was applied even though its members did not have PTSD; in quasi-experimental conditions, participants received complete treatment because they had this diagnosis; and in the third group, participants with PTSD received an abbreviated treatment (double sessions) due to organisational requirements.
Location: Primary health care workers in Constitución (Chile), city exposed to earthquake and tsunami; public department workers in Talca (city exposed only to earthquake) and teachers from a school (Constitución).
Participants: A total of 13 of the 91 people diagnosed with PTSD participated. In addition, 16 people without diagnosis voluntarily participated. The treatment was completed by 29 participants. There were no dropouts. Only 1 of the 9 participants in the quasi-experimental group did not respond to treatment.
Interventions: CBT-PD is a group therapy (10-12 sessions) that includes psychoeducation, breathing retraining, behavioural activation and cognitive restructuring. CBT-PD (complete and abbreviated) was applied between September and December 2010.
Measurements: Short Posttraumatic Stress Disorder Rating Interview (SPRINT-E) was used to measure PTSD symptoms before and after treatment.
Results: The group that received the complete treatment and was diagnosed with PTSD showed a significant decrease in the total symptoms to below dangerous levels (IGA_{AB}: 31.556; $p < 0.01$; 95%CI: 0.21-2.01]; $\eta^2 = 0.709$).
Discussion: The effectiveness and benefits of incorporating CBT-PD in the health network after events like disasters were discussed.

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Eficacia de la terapia cognitivo-conductual para el estrés posdesastre en síntomas de estrés postraumático tras un terremoto y tsunami en Chile

Palabras clave:
Psicoterapia breve
Medicina basada en la evidencia
Trastornos por estrés postraumático
Desastres naturales

RESUMEN

Objetivo: Evaluar la eficacia de la terapia cognitivo-conductual para el estrés posdesastre (TCC-PD) en síntomas de estrés postraumático (TEPT) por primera vez fuera de los Estados Unidos.
Diseño: Cuasiexperimental con tres grupos. Al grupo de cuasicontrol se le aplicó la TCC-PD completa pese a que sus miembros no tenían diagnóstico de TEPT; el grupo cuasiexperimental recibió el tratamiento completo porque sus miembros tenían ese diagnóstico. En el tercer grupo, las personas con TEPT recibieron un tratamiento abreviado (sesiones dobles) por exigencias organizativas.
Emplazamiento: Trabajadores de atención primaria de salud de Constitución (Chile), ciudad expuesta al terremoto y tsunami; trabajadores de un servicio público de Talca (ciudad expuesta solo al terremoto) y profesores de escuela (Constitución).
Participantes: Participaron 13 de las 91 personas diagnosticadas de TEPT; además, 16 personas sin diagnóstico participaron voluntariamente. Finalizaron el tratamiento 29 personas. No se produjeron abandonos. Solo uno de los nueve participantes del grupo cuasiexperimental no respondió al tratamiento.
Intervenciones: La TCC-PD es una terapia grupal (10-12 sesiones) que incluye psicoeducación, reentrenamiento respiratorio, activación conductual y reestructuración cognitiva. Se aplicó TCC-PD (completa y abreviada) entre septiembre y diciembre de 2010.

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Mediciones principales: Para medir síntomas de TEPT se utilizó la *Short Posttraumatic Stress Disorder Rating Interview* (SPRINT-E), antes y después del tratamiento.
Resultados: Solo el grupo que recibió el tratamiento completo y fue diagnosticado de TEPT disminuyó significativamente sus síntomas por debajo de los niveles peligrosos (IGA_{AB}: 31,556; p <0,01; IC95%: 0,21-2,01]; $\eta^2 = 0{,}709$).
Conclusiones: Se comprueban la efectividad y los beneficios de incorporar la TCC-PD en la red de salud después de desastres.
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Introduction

On Saturday, February 27th (F-27), at 03:34 A.M. local time, there was an earthquake of 8.8 magnitude (Richter scale). Its epicenter was located at 35.909° South latitude and 72.733° West longitude, about 335 kilometers to the Southwest of Santiago, Chile.[1] This earthquake was followed by a tsunami which caused huge destruction of the central coast of Chile, such as Constitucion and Talcahuano.[2] Considering the location and intensity, the F-27 is one of the most important in world history. In fact, it is the sixth-strongest earthquake recorded since 1900.[3] In Chile, the earthquake affected a large area where 80% of the national population lives and damaged a total of five hundred thousand houses, leaving about two million people affected.[3] Authorities reported 521 deaths and 21 missing persons.[4,5]

Studies performed after the Chilean earthquake showed that peoples' mental health was negatively affected.[6–8] Considering this evidence, it raises the need to validate psychotherapeutic procedures that mitigate the psychological effects, especially the most important health problem after an event like F-27, post-traumatic stress disorder (PTSD).[9–11] In fact, depending on the context, after an earthquake the prevalence of this disorder is between 10% and 30% at least one month after the catastrophic event.[12–15] It is noteworthy that the number of symptoms after an earthquake is the same as after political violence.[16] Specifically, after the F-27 the prevalence of PTSD was 12%, 6.4% for men and 14.8% for women.[17] In cities directly affected by the earthquake and tsunami, the prevalence could be higher than 35%.[7] Furthermore, it is expected that between 30% and 40% of the affected people in rural areas and between 10% and 20% of health care personnel present PTSD after F-27.[18] Probably factors related to the degree of exposure (e.g., lack of social support, additional stress) and, to a lesser extent, pre-traumatic factors (e.g., female gender, previous trauma), are responsible for the variation in the prevalence of PTSD.[19]

According to DSM-IV, PTSD is an anxiety disorder. In contrast, for DSM-5, PTSD is included in a new group of disorders, the "trauma-and stressor-related disorders".[20] In both cases, PTSD is characterized by symptoms following exposure directly or indirectly (hear stories or see pictures) to extremely stressful and traumatic events, where people respond with fear, helplessness or intense horror. The traumatic event is re-experienced through flashbacks and uncontrollable dreams; this includes images, thoughts or perceptions. This produces an intense psychological distress associated with the avoidance of memories, dull (reluctantly) behavioral activation and physiological responses, which appear especially when the person is exposed to internal or external cues that symbolize or resemble an aspect of the traumatic event. Physiological arousal is so intense that it makes it difficult to fall or stay asleep, concentrate, and increases irritability, angry outbursts, hypervigilance and exaggerated startle responses. These changes could last more than 1month and cause clinically significant distress or impairment in social, occupational or other important areas of functioning. However, these symptoms do not always occur immediately after a disaster. Some improve with time, while others are maintained even 4 years later.[16] In fact, the symptoms may appear 6 months after the traumatic event.[21]

In relation to the treatment of PTSD, it is important to note that not all treatments are equally effective in reducing the symptoms or remitting this disorder. However, trauma-focused cognitive-behavioral therapy, eye movement desensitization and reprocessing, stress management and group cognitive-behavioral therapy are the most effective in reducing PTSD symptoms.[22] Although it has been shown that both psychotherapy and pharmacotherapy are useful in the treatment of PTSD, current evidence suggests that psychotherapy is more effective than pharmacotherapy.[23] Of all psychotherapies, individual psychotherapy focused on trauma is the most effective, followed by the techniques of stress management and group cognitive-behavioral therapy. In particular, one of the most effective therapeutic procedures is the cognitive-behavior therapy that includes cognitive restructuration. Psychotherapy without a behavioral component (i.e., supportive psychotherapy, hypnosis, psychodynamic psychotherapy) has not proven effective.[22,24,25]

A cognitive-behavioral psychotherapy that has demonstrated to be effective for PTSD treatment after a natural disaster is the cognitive-behavioral therapy for post-disaster distress (CBT-PD).[26–28] The effectiveness of CBT-PD was demonstrated by a quasi-experimental method in which the same treatment was applied to two groups (severe and moderate PTSD) measured on four different occasions (referral, pretreatment, intermediate and post-treatment). While the authors acknowledge that it would have been better to apply an experimental design to test the effectiveness of CBT-PD due to the presence of a control group, this was not feasible in the context of the treatment program in which the study was conducted.[27]

CBT-PD is a short-term group therapy (10-12 sessions), whose objective is to identify and to intervene in the maladaptive beliefs related to the disaster. The intervention includes four components: psychoeducation, breathing retraining, behavioral activation and cognitive restructuring. Clients receive a workbook and they complete assignments to reinforce the skills that they have learned in session.[27] CBT-PD was used in a population with PTSD symptoms after the Katrina hurricane in New Orleans. The evidence shows that the number of severe PTSD symptoms decreased significantly immediately and during the first 5 months after the use of CBT-PD.[27,28] However, the effectiveness of CBT-PD has never before been tested outside the United States. Furthermore, the quasi-experimental design used by the authors to test the effectiveness of treatment is not as suitable as in cases where control groups were used. Therefore, given the characteristics of F-27, the opportunity to implement this approach arose to prove the effectiveness of CBT-PD in a Latin American sample.

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