

RESUMEN

El trastorno de estrés postraumático (TEPT) se manifiesta en personas que han experimentado, sido testigos o se han visto indirectamente expuestos a un evento traumático. Tecnologías de la Información y comunicación como las aplicaciones móviles trabajan para proporcionar servicios médicos, psicológicos y psicoeducativos a la población, siendo consideradas el futuro de los servicios sanitarios. Estas aplicaciones se las conoce como *mhealth*. El objetivo de este estudio fue realizar una revisión sistemática para conocer la eficacia de las aplicaciones móviles en el tratamiento de los síntomas del TEPT. Se siguieron las directrices PRISMA. Se plantearon los criterios de inclusión: Artículos científicos, publicados en entre los años 2010 - 2020, en inglés, que fueran ensayos controlados aleatorizados (ECAs), que aplicaran alguna App para el TEPT, en población adulta diagnosticada de TEPT. A continuación, se llevaron a cabo las búsquedas bibliográficas en las siguientes bases de datos: Pubmed, Psycinfo, Psycarticles y Web of science. Tras eliminar los duplicados y los estudios por no cumplir los criterios de inclusión por diversas razones, se incluyeron un total de 7 ECAs. En general, los resultados obtenidos mostraron una mejora de los síntomas de TPET tras la intervención con la App. De esta revisión podemos concluir, por un lado, que las aplicaciones móviles parecen ser un buen complemento en el tratamiento tradicional del TEPT, añadiendo la ventaja de proporcionar asistencia en cualquier lugar y momento del día. Y, por otro lado, la necesidad de llevar a cabo estudios con muestras más grandes y con diseños de investigación de mayor calidad.

Palabra clave: TEPT, aplicaciones móviles, eficacia, revisión sistemática

ABSTRACT

Posttraumatic stress disorder (PTSD) can occur in people who have experienced, witnessed or indirectly exposed to a traumatic event. Information and communication technologies, such as mobile applications, work to bring medical, psychological and psychoeducational information services to people, being considered the future for health services. These apps are known as *mhealth*. The aim of this work was to review the efficacy of mobile applications for treating PTSD symptoms. The PRISMA guidelines were followed. Inclusion criteria were established: scientific articles, published in 2010 - 2020, in English, randomized controlled trial (RCT), using and App for PTSD, adult population meeting diagnostic criteria for PTSD. Next bibliographic searches were made in the following databases: Pubmed, Psycinfo, Psycarticles and Web of science. After removing duplicates and studies not meeting the inclusion criteria for several reasons, a total of 7 RCT were included. Overall, the results showed an improvement on PTSD symptoms after the mobile app intervention. From this review we could conclude, on the one hand, that apps are a promising complement for traditional psychological treatment for PTSD, with the additional advantage of providing psychological assistance anywhere and at any time. And, on the other hand, the necessity to conduct future studies with larger sample sizes and with more quality research designs.

Keywords: PTSD, mobile Apps, efficacy, systematic review

INTRODUCTION

Posttraumatic stress disorder (PTSD) can occur in people who have experienced, witnessed or indirectly exposed to a traumatic event, but relatively few affected individuals receive treatment for it (APA, 2020).

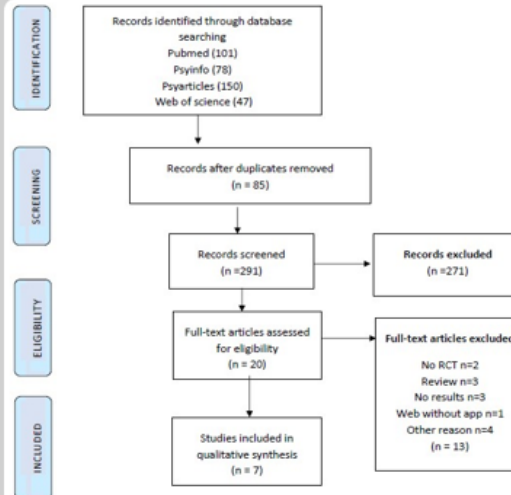
More and more ICTs, such as Apps on smartphones, work to bring medical, psychological and psychoeducational information services to people.

Currently there are many *mhealth*-mobile health- available for download which are considered the future for health services (Owen et al., 2018). However, very few of these Apps are empirically validated.

- The aim of this work is to review the efficacy of mobile applications for treating PTSD symptoms.

METHOD

- Inclusion criteria:** scientific articles, published in 2010-2020, in English, RCT, using and App for PTSD, adult population meeting diagnostic criteria for PTSD.
- The searches for the selection of studies were made in the databases: Pubmed, Psynfo, Psycarticles and Web of science.
- The **keywords** used were (post traumatic stress disorder or PTSD or posttraumatic stress disorder or post-traumatic stress disorder) AND (mobile applications or apps or mobile apps or Smartphone). The search terms were found in the title, abstract, full paper text and keywords.
- Whole process of studies selection is summarized in a flow chart (PRISMA).



DISCUSSION

- There are very few RCT testing the efficacy of apps to treat PTSD symptoms.
- Overall the results obtained in the 7 studies included in the review showed improvement in PTSD symptoms from pre to post-treatment.
- From this review we could conclude that apps are a promising complement for traditional psychological treatment for PTSD.
- Apps have additional benefits over the traditional face-to-face treatments: they can reach more people who may need psychological assistance anywhere and at anytime.
- Future studies with larger sample sizes and with more quality research designs are still very much needed.
- The main limitation of this study was that only one researcher screened the studies for the inclusion criteria.

RESULTS

| AUTHORS | INTERVENTION | MEASURES | SAMPLE | RESULTS |
|---------------------------|---|----------|---|--|
| Busch et al., 2016 | Implement a Virtual Hope Box for augment CBT for patients that are experiencing periods of acute or significant distress, emotional disequilibrium, or suicidal ideation. Over a 12-week period. | CSE | Treatment group (n=58) Control group (n=80) | VHB users reported significantly greater ability to cope with unpleasant emotions and thoughts (Coping Self-Efficacy Scale), compared with the control group. |
| Elbogen et al., 2019 | Use CALM for testing the effects of a cognitive rehabilitation with mobile technology which combines GMT, content-free cueing, and the n-back task. Involves support of a family member or friend. 6-month intervention period. | DAR | Treatment group (n=57) Active control group (n=55) | The emotion dysregulation, 25% decrease in anger over 6 months compared with 8% reduction in the control group. Family/friends reported 28% fewer maladaptive interpersonal behaviors (e.g., aggression) over 6 months compared with 6% reduction in the control. |
| Koffel et al., 2016 | CBT-I plus CBT-I Coach. Treatment consisted of weekly 1-h individual therapy sessions based on the CBT-I manual developed by VA. | ISI | App group (n=9) Non-app group (n=9) | Both groups had significantly improved sleep outcomes following treatment. Feedback was positive and focused on the personalized feedback provided by the app, particularly as it related to the sleep diary information. App improving care and increasing adherence. |
| Kuhn et al., 2017 | PTSD Coach for self-management of PTSD symptoms which offering sound psychoeducational information and evidence-based cognitive behavioral coping tool for 3 months. | PCL-C | Treatment group (n=82) Waitlist group (n=58) | PTSD Coach participants had significantly greater improvements in PTSD symptoms, depression symptoms, and psychosocial functioning than did waitlist participants. |
| Possemato et al., 2016 | Clinical-Supported (CS) PTSD Coach consisting of four 20-min sessions focused on setting symptom reduction goals and helping fully engage with application content or Self-Managed (SM) PTSD Coach. | PCL | SM PTSD Coach (n=10) CS PTSD Coach (n=10) | Both treatments resulted in reductions in PTSD symptoms. The addition of clinician support appears to increase the effectiveness of self-management alone. |
| Roy et al., 2017 | Six apps ¹ which reduce symptoms of PTSD promoting psychoeducation, social engagement, and relaxation to 6 weeks of resilience enhancement. | PCL | Treatment group (n=72) Control group (n=72) | Both groups reported reductions in PTSD, anxiety, and depression symptoms during the 6-week intervention. App use, with or without specific direction, feasibly and effectively reduces symptom severity. |
| Van der Meer et al., 2020 | One month of access to SUPPORT Coach, which is a self-help app to reducing PTSD symptoms, negative trauma-related cognitions, lack of social support, and enhancing psychological resilience. | PCL-5 | Treatment group (n=124) Control group (n=135) | Intervention condition showed a greater decline in negative trauma-related cognitions and a larger increase in psychological resilience at post-treatment, compared to the control condition. |

Abbreviations: CBT: Cognitive Behavioral Therapy; CALM: Cognitive Applications for Life Management; GMT: Goal Management Training; CBT-I: Cognitive Behavioral Therapy for Insomnia; VA: Veterans Affairs; PTSD: Post Traumatic Stress Disorder. Measures: CSE: Coping self-efficacy scale; DAR: Dimensions of Anger; ISI: Insomnia Severity Index; PCL: PTSD checklist; PCL-5: PTSD checklist for DSM-5; PCL-C: PTSD Checklist-Civilian.
¹Six apps: LifeArmor, PE Coach (Prolonged Exposure), Positive Activity Jackpot, Tactical Breather, Virtual Hope Box and Daily Yoga.

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