

EFFECTIVENESS OF COMBINING E-PSYCHOTHERAPY (COGNITIVE BEHAVIOR THERAPY AND POSITIVE PSYCHOTHERAPY) IN WOMEN WITH DEPRESSION, ANXIETY AND PTSD DURING A STRESSFUL COVID-19 LOCKDOWN: MULTIPLE CASE CLINICAL TRIAL STUDY

Dr. MUNEERA AL-WAHEDI^{1*}, Dr. SANA ANWAR LASHRI² and Dr. SUZILA ISMAIL³

¹ School of Applied Psychology, Social Work and Policy, Sintok, University Utara Malaysia, Kedah, Malaysia

² School of Applied Psychology, Social Work and Policy, Sintok, University Utara Malaysia, Kedah, Malaysia

³ School of Applied Psychology, Social Work and Policy, Sintok, University Utara Malaysia, Kedah, Malaysia

*Corresponding Author: muneera.dhaif@uum.edu.my

Abstract

Background: This multi-case clinical study investigates whether the usage of e-psychotherapy as effective in treating depression, anxiety, and post-traumatic stress disorder (PTSD) during the COVID-19 period with three Arab women who underwent face-to-face psycho-treatment before the epidemic. With the lockdown; they have faced difficulty communicating with therapists, which led to their relapse. The cases have used some psychotropic-substances and despite the slight improvement; they did not tolerate the side-effects. Online-mental health services suggested during the lockdown as the first-aid solution. However, challenges emerged in the application such as the permanent lack of internet availability, lack of time, and implementation commitment.

Method: An e-psychotherapy application based on Cognitive-Behavioral Therapy (CBT) and Positive Psychotherapy (PPT) strategies used combined. The sessions were randomly assigned based on the time of the therapist and the patient's need. Use the Beck's Depression Inventory (BDI), Beck's Anxiety Inventory (BAI), and the PTSD Symptom Scale (PSS) before, during, and after treatment to diagnose and measure outcomes.

Results: Depression, anxiety and after using e-psychotherapy, it is believed that PTSD symptoms would be alleviated (with the combination of CBT and positive psychotherapy strategies). There should be a significant statistical difference between the two groups.

Conclusion: The current study will assess and contribute to the creation of novel psychotherapy options for people who are depressed, anxious, or have post-traumatic stress disorder (PTSD). The findings of this research will open the road for fresh ideas to spread, flexible interventions for individuals suffering from depression, anxiety, and PTSD.

Keywords: PTSD, Depression, Anxiety, E-Psychotherapy, Cognitive Behavior Therapy (CBT), Positive psychotherapy (PPT), COVID-19

Key Practitioner Message

- The combination of e-psychotherapy (CBT and Positive Psychotherapy) can increase the chances of Covid-19 treatment.
- The inclusion of in e-psychotherapy practices will significantly save more by reducing lost productivity automatic travel time and cost.
- The study constitutes an addition to the list of the e-library of clinical psychology, and it is subject to criticism.

1. Introduction

A wide range of psychological impacts were observed at the individual, community, national, and worldwide levels during the Virus outbreak. According to Hall et al. (2008) people are more fearful of becoming ill or dying, of feeling helpless, and of being stereotyped by others. According to Xiang et al. (2011) the epidemic has had a significant impact on public mental health, possibly leading to psychiatric crises. The effectiveness of intervention efforts is improved when people are identified early in the stages of a psychological disorder. Medical practitioners and civilians alike have experienced psychological changes as a result of health crises like the COVID-19 pandemic, which are driven by dread, worry, despair, or uncertainty (Zhang et al. 2020).

Furthermore, anxiety and despair have a huge impact on everyone in a society. According to new research, people who are placed in isolation or quarantine experience a lot of anxiety, fury, confusion, and distress. Rubin and Wessely (2020) found that those who were afflicted had a variety of mental trauma symptoms, including emotional distress, depression, stress, mood swings, irritability, insomnia, attention deficit hyperactivity disorder, post-traumatic stress, and anger, in all of the studies that looked into psychological disorders during the COVID-19 pandemic. In research, frequent media exposure has also been shown to cause distress. Nonetheless, given the current setting, it is difficult to predict COVID-19's psychological and emotional effects. According to research conducted in China, the first country to be impacted by the latest Virus outbreak, people's fear of the unknown nature of the Virus can contribute to mental problems (Shigemura et al. 2020).

After experiencing one or more traumatic events, such as actual or threatened death, serious injury, or sexual violence, in situations such as direct experience of the traumatic event, witnessing it as it occurs to others, or learning about a violent or accidental traumatic event, post-traumatic stress disorder (PTSD) develops that occurred to a family member or close friend (DSM-5) by the American Psychiatric Association (2014). Furthermore, according to the DSM-5, PTSD can be triggered by frequent or intense exposure to disagreeable elements of traumatic experiences. However, Kessler et al. (2017) claim that traumatic event exposure is a worldwide issue. can lead to PTSD, the higher transitory acute stress response is experienced by the majority of persons. According to Zohar et al. (2016) in the first month after an occurrence, almost 80% of people recover with no long-term consequences (2011). While Smith et al. (2016) found that in the overall population, occurrence rates range from 3.8 percent to 8.3 percent., Mealer et al. (2016) revealed a diversity of prevalence rates from 14.8 percent to 83 percent in those who work in emergency situations, physicians and nurses, for example. With the global COVID-19 crisis, Yao et al. (2020) point to long-term emotional stress can occur on an unprecedented scale, according to the literature and experience in health care, there are major implications such as job loss, mortality, and social isolation. When someone is exposed to a major sickness, they experience feelings of susceptibility, fear, terror, and hopelessness.

Moreover, Cusi et al. (2020) found no previous catastrophic catastrophes that could be equated to in terms of geographic scope, the COVID-19 epidemic. For example, the geographical scope of World Wars I and II, as well as subsequent pandemics, was limited, allowing Lyanda et al. (2020) to save some continents. During the first decades of the twentieth century, there was a lot going on, the Spanish flu, which had significant mortality rates, did not spread globally. Furthermore, there is a scarcity of literature to help individuals cope with traumatic experiences like quarantine, mass disasters, and persistent stressors, making large-scale mental health damage seem inevitable. According to Brooks et al. (2020) those who have been quarantined are more prone to acquire a vast spectrum of indications of depression and post-traumatic stress symptoms are examples of psychological stress and discomfort. As a result, it's critical to seek out effective psychotherapy treatments for persons with PTSD that may be delivered online, allowing for quick access to mental health care regardless of location. Cognitive behavioral therapy (CBT) by Kar (2011) and prolonged exposure therapy (PE) by Zahou et al. (2020) are presently the first-line therapies for PTSD due to the empirical support they have received (Duran et al. 2020).

However, CBT is a new and cutting-edge transdiagnostic strategy found to be beneficial in the treatment of depression by Hemanny et al. (2020), social anxiety illness by Powell et al. (2013), PTSD by Delavechia et al. (2016) and obsessive-compulsive disorder. CBT is distinct from other psychotherapies in that it brings a fresh, a systematized and methodical strategy to resolving negative core assumptions that are unhealthy (CBs) that lets for simultaneous mental, expressive, and empirical treatment. CBT is an illustration of assimilating psychotherapy combination that builds on Beckian CBT whereas using a courtroom comparison to treat dysfunctional CBs showed like self-accusations (Oliveira, 2016).

Furthermore, E-psychotherapy based on CBT is a first-line behavioral approach to treating anxiety, depression and PTSD, which depends on its application on the conference, audio, video, or chat, it is also a lower-cost alternative, faster to reach, and easier to deal with by Wahedi (2020). The meta-analytical studies evidence supports the efficacy of e-psychotherapy and in particular, it is based on CBT in both short- and long-term follow-ups by Wahedi (2020). Luo et al. (2020) for instance, revealed that face-to-face CBT was found to be less effective than eCBT in lowering the severity of depressive symptoms in a recent analysis of 17 research. In addition, Meta-analytical studies of Xiang, et al. (2020) gave the same result of eCBT potency value in reducing the intensity of depressive anxiety, and PTSD indications. Moreover, Uwaoma et al. (2020) indicated that e-psychotherapy has achieved high effectiveness in treating disorders in the elderly, and there is no statistical indication that age affects treatment outcomes.

Though, Positive psychotherapy, as defined by Seligman et al. (2005) aims to get a better understanding of pleasant feelings, emotional potentials, and strong social/communal/formal working in order to help people and organizations. Positive psychotherapy used to be very focused on wellbeing and subjective happiness. In a next

stage, the research obtained a larger perspective on emotional happiness, as well as another same concept known as PERMA, which is made up of the five scopes listed below: P stands for optimistic emotions, E stands for engagement, R stands for relationships, and M stands for meaning, and A for Ryff's (2014) achievement. Although positive psychotherapy strives certain psychotherapy treatments to become a way of life have been established, such as positive psychotherapy (PPT), and clinical investigations have been reproduced in many therapeutic and social backgrounds (Rashid & Seligman, 2019).

The proposed study is a clinical experiment that compares CBT and positive psychology in the treatment of individuals with anxiety, depression and PTSD like an outcome of traumatic contact to COVID-19 during the pandemic. Given that no research evaluating CBT's efficacy in PTSD patients have been found, we believe it is at least as effective as positive psychology. Our main goals are to evaluate the efficacy of e-psychotherapy (CBT and Positive Psychotherapy) for patients with PTSD who developed it as a result of or throughout the COVID-19 epidemic, and to comparison its effectiveness with pre-post assessments, using the same sample for all therapies given online. Second, we want to examine the severity of PTSD symptoms as well as the therapeutic alliance's strength quantitatively.

1.1 Study Objectives

- i. To test the effectiveness of a combination of e-psychotherapy (CBT and Positive Psychotherapy) in treating three women with depression, anxiety and PTSD disorders.
- ii. To study the effectiveness of CBT strategies in treating three women with depression, anxiety and PTSD disorders.
- iii. To observe the effectiveness of Positive Psychotherapy in treating three women with depression, anxiety and PTSD disorders.

2. Method

2.1 Study Design

The research design follows a multi-case clinical study. The study design and procedures are determined based on the number of advanced cases of treatment that were identified by three Arab women who diagnosed with depression, anxiety and PTSD. The treatment will last 10 weeks, with two to three months of follow-up. The 12 sessions of online psychotherapy (CBT and Positive Psychotherapy) will be conducted individually and weekly. Before the first session, the seventh session, and the fourteenth session, as well as at 3, 6, and twelve months, outcome measurements will be taken.

2.2 Participants and Sample Size

Following media coverage of the study, participants seeking online counselling as a result of COVID-19 were chosen using a questionnaire that is self-administered called the PTSD symptom scale (PSS), which includes a list of PTSD symptoms. Patients were called by

professional evaluators who used the Structured Clinical Interview for DSM-5 (SCID-5) to confirm the diagnosis based on DSM-5 criteria. The study's purpose and how psychotherapy works were explained to the participants. Those who agreed to take part were required to sign an informed consent form, which included authorization for the sessions to be recorded. Three Arab women who diagnosed with depression, anxiety and PTSD were selected for intervention. Patients were randomized for intervention after completing the self-assessment questionnaires.

2.3 Inclusion Criteria

Adults are eligible to take part in this research, only females, diagnosed with PTSD on the PTSD symptom scale COVID-19 exposure, whether direct or indirect (e.g., those who quarantined or isolated themselves). Participants must be able to read, write, and understand and follow directions in addition to having Internet access. Candidates who met any of the following criteria were not eligible to take part in this research: significant suicide risk (in the previous 12 months, suicide plans, attitudes, or attempts), self-mutilation activity in the preceding 12 months, already receiving psychotherapy, exhibiting psychotic symptoms, and substance use disorder in the last 12 months.

2.5 Instruments

2.5.1 Diagnostic Assessment

The DSM-5 structural clinical interview is a semi-structured psychiatric examination that tries to establish a diagnosis based on the DSM-5.

2.5.2 PTSD Symptoms Scale (PSS; Riggs et al. 1993):

PTSD symptoms measure was originally established by Riggs et al. (1993). PSS is a semi-structured 17 questions questionnaire that aids in measuring the existence and severity of PTSD symptoms as defined by the DSM-IV. It was initially published in 1993. In a person with a known trauma history, the symptoms would be linked to a specific traumatic event. The Cronbach alpha reliability of this scale is ($\alpha = .82$).

2.5.3 Beck Anxiety Inventory (BAI; Beck et al. 1961)

BAI was originally established by Beck et al. (1961). The Beck Anxiety Inventory (BAI) has 21-questions, self-report assessment checklist that measure characteristic attitudes and symptoms of anxiety. The Cronbach alpha reliability of this scale is ($\alpha = .79$).

2.5.4 Beck Depression Inventory (BDI-II; Beck et al. 1996)

BDI was formerly established by Beck et al. (1996). BDI has 21-questions, self-report assessment checklist that measure characteristic attitudes and symptoms of depression. The Cronbach alpha reliability of this scale is ($\alpha = .80$).

2.6 Interventions

The two psychotherapeutic group interventions (CBT and Positive Psychotherapy) where a total of 12 sessions were provided via Skype or Google Meeting platforms (between 8

and 10 weeks) The sessions were audiotaped to verify authenticity of the intervention and to allow qualified supervisors to inspect it.

The therapies have some similarities and some variances. First and foremost, CBT tries to identify views, feelings, and behaviors on three levels of cognition in order to modify them, notably at the third level, where it aims to discover and change CBs, which balance the alteration of symptoms-related ideas and actions. Positive psychotherapy is not intended to identify or change disrupted cognitions, unpleasant feelings, or dysfunctional behaviors are all examples of distorted cognitions. Positive psychotherapy aims to improve personal strengths, thankfulness, compassion, and gratitude behaviors, and happiness-associated thinking. As a result, each intervention promotes a distinct change process: Positive psychotherapy supports the patient in building personal strengths and virtues, whereas CBT modifies CBs.

2.7 Ethical Concerns

The Clinical-ethical considerations were taken into consideration in terms of agreeing with the cases on all treatment steps, such as informing them of information related to the type of psychotherapy used and positive psychotherapy and providing them with sites that provide complete data on the therapies' action, benefits and side effects, as well as case reports indicating the remedy's effectiveness without risks. Oral consent was obtained during the initial interview and written in the clinical interview form the patients.

3. Results

The statistical analyses were performed with IBM SPSS Statistics: version 26 with a significance level of $p < 0.05$. Mean, standard deviation, frequencies, and percentages were used to determine the demographic variables. Means, standard deviations, and reliability values (i.e. Cronbach alphas) were determined for the primary study variables. It can be seen that all of the variables were within 2 standard deviations (Field, 2013).

TABLE 1

CASE DESCRIPTION, DISORDER HISTORY AND TREATMENT PRE-COVID-19

	Disorder type	Nationality	Age	Occupation	Social Status	Family Members	Age of Disorder	History and Treatment
CASE ONE	DEPRESSION	Iraqi	23 years	Bachelor	House wife	2 children with husband	Age of Disorder 2/5 years	The disorder appeared after being exposed to marital violence and she received medical treatment for a year in the beginning, then psychological treatment for a year and a half.
CASE TWO	ANXIETY	Saudi	40 years	Secondary	House wife	5 children with husband	Age of Disorder 4 years	She complained about her husband's arrest, and she received psychological treatment for a year and a half, and then joint medical with psychotherapy for two and a half years.

CASE THREE	PTSD	Yemeni	27 years	Bachelor	Single, not working	Mother	Age of Disorder 3 years	Resulting from the deaths of her father and brother in the war that traumatized her. She received two years of medical treatment, then psychological treatment along with medical treatment for one year.
-------------------	------	--------	----------	----------	---------------------	--------	-------------------------	---

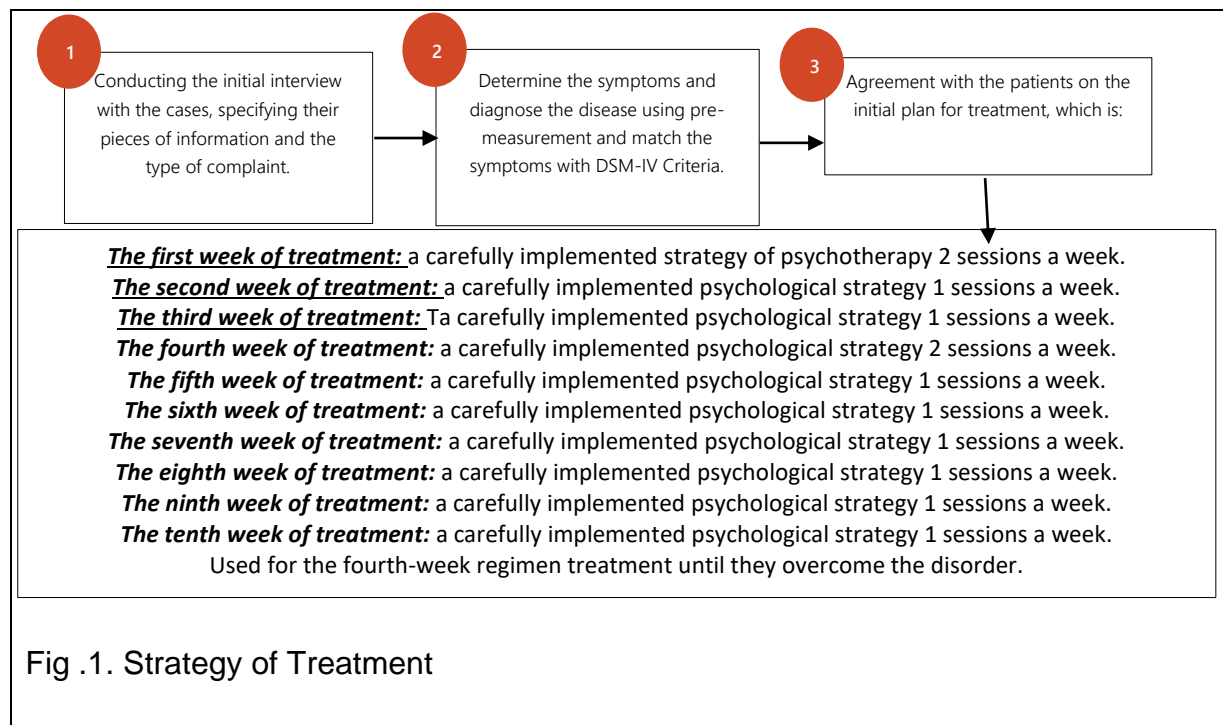


TABLE 2

PSYCHOMETRIC PROPERTIES OF QUESTIONNAIRE

Variables	<i>k</i>	α
Beck Depression Inventory (BDI)	21	.82
Beck Anxiety Inventory (BAI)	21	.79
PTSD Symptom Scale (PSS)	17	.80

Note. *k*= Number of Items in the subscales, α = Cronbach Alpha Reliability Co-efficient.

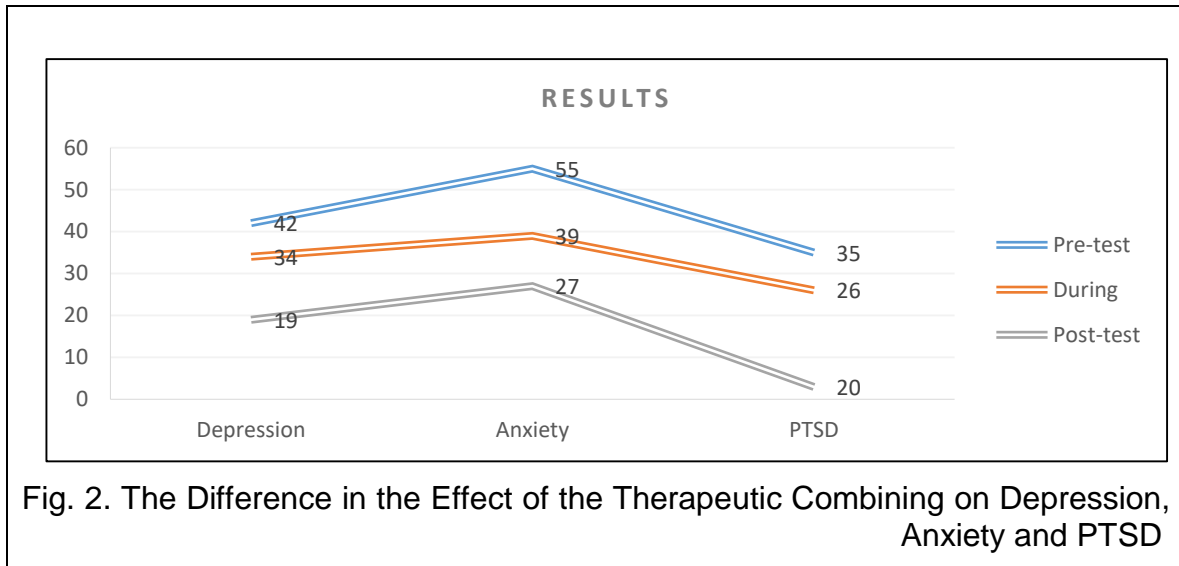
Psychometric properties result of the current research were shown in table 1. Results explained the Cronbach alpha of Beck Depression Inventory that this scale has high reliability .82. Beck Anxiety Inventory has moderate reliability .79. However, PTSD Symptom Scale has high reliability .80.

TABLE 3

SHOWING PRE, DURING AND POST TREATMENT SCORES ON SALES AS REPORTED BY PATIENTS

Scales	Pre-Assessment	During Assessment	Post-Assessment
Beck Depression Inventory (BDI)	42	14	19
Beck Anxiety Inventory BAI	55	39	27
PTSD Symptoms Scale (PSS)	35	26	20

Results showed significant improvement in both the severity of disorder and use of e-psychotherapies. There are differences in the level of disorders between before, during and after treatment. The pre-test depression score is 42, while the test score during treatment is 34, and the post-test score is 19. While the pre-test anxiety score is 55, while the test score during treatment is 39, and the post-test score is 27. The PTSD score on the pre-test is 35, while the test score during treatment is 26, and the post-test score is 20.



4. Discussions

Dealing with mental health issues varies according to the biological, environmental and social conditions, and dealing with them requires categories commensurate with the emergency changes. The circumstance caused by the emergence of the Coronavirus in 2020 has repercussions on normal and abnormal individuals. The quarantine had an effect on troubled mental health, and it differed according to the level and type of disorder and the method of treatment used. The idea that the patient has free space to receive treatment important in reducing the level of tension, and the patient's feeling that he is surrounded by restrictions that disturb his comfort increases his psychological imbalance. Anxiety, depression and PTSD are common disorders in the population. The therapeutic approach in helping these conditions varies, and despite the positive effectiveness now. The scientific literature has strong evidence about the effectiveness of e-psychotherapies (CBT and Positive Psychotherapy). This is the first international study to examine the effects of two different psychosocial therapies on depression, anxiety, and PTSD symptoms, to our knowledge. Furthermore, the present pandemic, which is being The emergence of the COVID-19 virus has raised concerns and has far-reaching consequences on death rates, the economy, and mental health.

However, the effect on the last has been well established, with anxiety and depression symptoms, including suicidal conduct, skyrocketing in the general population as a result of the Li et al (2020) pandemic. Disturbing, overblown, and untrustworthy news; the dangers of contamination; the chances of it damaging the individual's or their loved ones' lives; and activity limits and financial losses all have a direct effect on symptoms. Uncertainty, insecurity, and feelings of inefficacy for long periods of time, all of which are considered trauma predictors, cause misery and anxiety. According to Li et al. (2020),

those frontline health personnel are more affected than those who work with the most vulnerable patients, since, while the health care setting entails more dangers, it also entails more contamination control procedures. In any case, according to Galea et al. (2020) the general public is more sensitive to trauma and stress-related illnesses, particularly PTSD. This is unmistakably a stress-related illness characterized by well-defined cognitive causes (Bo et al. 2021).

Psychotherapy is now the only therapeutic it's a good option for PTSD because it restructures trauma-related cognitions and reduces symptoms that have an influence on quality of life, such as worry, tension, and insomnia. We innovated in our study using a randomized and controlled design, integrating quantitative and qualitative measures, and a sample with good statistical power, researchers tested and compared two new interventions that proved effective for mental disorders and positive psychology, which has the potential to bring relevant new clinical information to the international literature. Patients' and therapists' viewpoints on the pandemic as a whole, as well as online therapy, will be studied qualitatively. Although Liu et al. (2020) released data on the pandemic's influence on health workers, there have been no qualitative studies on online psychotherapy throughout the epidemic.

A recent clinical experiment found that CBT is no different from prolonged exposure therapy in terms of lowering symptoms, but it has higher compliance rates, suggesting that it could be used to treat PTSD by Duran et al. (2021). The same can be said about positive psychotherapy by Karatzias et al. (2013), both have been revealed to be effective in the treatment of trauma and stress-related disorders.

Conclusion

The possibility of combining e-psychotherapy based on CBT strategies with positive psychotherapy achieves a faster result in overcoming depression, anxiety and PTSD, which conclude that the combination of two psychological treatment methods is effective whether it is direct (face to face) or indirect (electronic) treatment. We expect that this research will offer light on the impact of online psychotherapy use in the situation of the epidemic and for psychological well-being in overall. This research was precisely prepared for today's circumstances and in compliance with social distancing health criteria. We believe it will benefit people with depression, anxiety, and post-traumatic stress disorder (PTSD), which appear to be among the most common problems induced by COVID-19. The findings will also contribute to the growing body of information on the efficacy of CBT and Positive Psychotherapy online, as these therapies are becoming more popular yet lack evidence.

References

- American Psychiatric Association. (2014). *DSM-5: Manual Diagnóstico e Estatístico DE Transtornos Mentais*; American Psychiatric Association: Porto Alegre, Brazil.
- Al-Wahedi, M. D. A. (2020). The effectiveness of automated e-cognitive behavioral therapy for PTSD among sexual abuse victims during childhood. University of Science Malaysia (USM). Gelugor, Penang, Malaysia.
- Bo, H.-X.; Li, W.; Yang, Y.; Wang, Y.; Zhang, Q.; Cheung, T.; Wu, X.; Xiang, Y.-T. (2021). Posttraumatic stress symptoms and attitude toward crisis mental health services among clinically stable patients with COVID-19 in China. *Psychol. Med.* 51, 1052–1053.
- Brooks, S.K.; Webster, R.K.; Smith, L.E.; Woodland, L.; Wessely, S.; Greenberg, N.; Rubin, G.J. (2020). The psychological impact of quarantine and how to reduce it: Rapid review of the evidence. *Lancet*, 395, 912–920.
- Berke, D.S.; Yeterian, J.; Presseau, C.; Rusowicz-Orazem, L.; Kline, N.K.; Nash, W.P.; Litz, B.T. (2019). Dynamic changes in marines' reports of PTSD symptoms and problem alcohol use across the deployment cycle. *Psychol. Addict. Behav.* 33, 162.
- Butollo, W.; Karl, R.; König, J.; Rosner, R. (2016). A randomized controlled clinical trial of dialogical exposure therapy versus cognitive processing therapy for adult outpatients suffering from PTSD after type I trauma in adulthood. *Psychother. Psychosom.* 85, 16–26.
- Cosić, K.; Popović, S.; Šarlija, M.; Kesedžić, I. (2020). Impact of human disasters and COVID-19 pandemic on mental health: Potential of digital psychiatry. *Psychiatr. Danub.* 32, 25–31.
- Duran, É.P.; Menezes, C.H.; Neto, F.L.; Savóia, M.G.; de Oliveira, I.R. (2020). Perfil de pacientes com diagnóstico de transtorno de estresse pós-traumático atendidos em um ambulatório de ansiedade e trauma. *Rev. Ciênc. Méd. Biol.* 19, 597–601.
- Delavechia, T.R.; Velasquez, M.L.; Duran, É.P.; Matsumoto, L.S.; Oliveira, I.R. de. (2016). Changing negative core beliefs with trial-based thought record. *Arch. Clin. Psychiatry*, 43, 31–33.
- De Oliveira, I.R. (2016). *Trial-Based Cognitive Therapy: Distinctive Features*; Routledge: London, UK, ISBN 1317532651.
- Duran, É.P.; Corchs, F.; Vianna, A.; Araújo, Á.C.; Del Real, N.; Silva, C.; Ferreira, A.P.; De Vito Francez, P.; Godói, C.; Silveira, H.; et al. (2021). A randomized clinical trial to assess the efficacy of trial-based cognitive therapy (TBCT) compared to prolonged exposure for post-traumatic stress disorder: Preliminary findings. *CNS Spectr.*, 26, 427–434.
- Goetter, E.M.; Bui, E.; Ojserkis, R.A.; Zakarian, R.J.; Brendel, R.W.; Simon, N.M. (2015). A systematic review of dropout from psychotherapy for posttraumatic stress disorder among Iraq and Afghanistan combat veterans. *J. Trauma. Stress*, 28, 401–409.
- Galea, S.; Merchant, R.M.; Lurie, N. (2020). The mental health consequences of COVID-19 and physical distancing: The need for prevention and early intervention. *JAMA Intern. Med.* 180, 817–818.
- Hall, R. C., Hall, R. C., & Chapman, M. J. (2008). The 1995 Kikwit Ebola outbreak: lessons hospitals and physicians can apply to future viral epidemics. *General hospital psychiatry*, 30(5), 446-452.
- Hemanny, C.; Carvalho, C.; Maia, N.; Reis, D.; Botelho, A.C.; Bonavides, D.; Seixas, C.; De Oliveira, I.R. (2020). Efficacy of trial-based cognitive therapy, behavioral activation and treatment as usual in the treatment of major depressive disorder: Preliminary findings from a randomized clinical trial. *CNS Spectr.* 25, 535–544.
- Iyanda, A.E.; Adeleke, R.; Lu, Y.; Osayomi, T.; Adaralegbe, A.; Lasode, M.; (2020). Chima-Adaralegbe, N.J.; Osundina, A.M. A retrospective cross-national examination of COVID-19 outbreak in 175 countries: A multiscale geographically weighted regression analysis (11 January–28 June 2020). *J. Infect. Public Health*, 13, 1438–1445.
- Karatzias, T.; Chouliara, Z.; Power, K.; Brown, K.; Begum, M.; McGoldrick, T.; MacLean, R. (2013). Life satisfaction in people with post-traumatic stress disorder. *J. Ment. Health*. 22, 501–508.
- Kar, N. (2011). Cognitive behavioral therapy for the treatment of post-traumatic stress disorder: A review. *Neuropsychiatr. Dis. Treat.* 7, 167–181.

- Kessler, R.C.; Aguilar-Gaxiola, S.; Alonso, J.; Benjet, C.; Bromet, E.J.; Cardoso, G.; Degenhardt, L.; de Girolamo, G.; Dinolova, R.V.; Ferry, F. (2017). Trauma and PTSD in the WHO world mental health surveys. *Eur. J. Psychotraumatol.* 8, 1353383.
- Luo, C., Sanger, N., Singhal, N., Pattrick, K., Shams, I., Shahid, H., ... & Puckering, M. (2020). A comparison of electronically-delivered and face to face cognitive behavioural therapies in depressive disorders: A systematic review and meta-analysis. *EClinicalMedicine*, 24, 100442
- Li, Z.; Ge, J.; Yang, M.; Feng, J.; Qiao, M.; Jiang, R.; Bi, J.; Zhan, G.; Xu, X.; Wang, L. (2020). Vicarious traumatization in the general public, members, and non-members of medical teams aiding in COVID-19 control. *Brain. Behav. Immun.* 88, 916–919.
- Liu, Q.; Luo, D.; Haase, J.E.; Guo, Q.; Wang, X.Q.; Liu, S.; Xia, L.; Liu, Z.; Yang, J.; Yang, B.X. (2020). The experiences of health-care providers during the COVID-19 crisis in China: A qualitative study. *Lancet Glob. Health*, 8, e790–e798.
- Mealer, M.; Burnham, E.L.; Goode, C.J.; Rothbaum, B.; Moss, M. (2009). The prevalence and impact of post-traumatic stress disorder and burnout syndrome in nurses. *Depress. Anxiety*, 26, 1118–1126.
- Powell, V.B.; de Oliveira, O.H.; Seixas, C.; Almeida, C.; Grangeon, M.C.; Caldas, M.; Bonfim, T.D.; Castro, M.; Galvao-de Almeida, A.; de Moraes, R.O.; et al. (2013). Changing core beliefs with trial-based cognitive therapy may improve quality of life in social phobia: A randomized study. *Rev. Bras. Psiquiatr.* 35, 243–247.
- Rubin, G. J., & Wessely, S. (2020). The psychological effects of quarantining a city. *Bmj*, 368.
- Ryff, C.D. (2014). Psychological well-being revisited: Advances in the science and practice of eudaimonia. *Psychother. Psychosom.* 83, 10–28.
- Rashid, T.; Seligman, M. *Psicoterapia Positiva*: (2019). Manual do Terapeuta; Artmed Editora: Porto Alegre, RS, Brazil, ISBN 8582715501.
- Seligman, M.E.P.; Steen, T.A.; Park, N.; Peterson, C. (2005). Positive psychology progress: Empirical validation of interventions. *Am. Psychol.* 60, 410.
- Schottenbauer, M.A.; Glass, C.R.; Arnkoff, D.B.; Tendick, V.; Gray, S.H. (2008). Nonresponse and dropout rates in outcome studies on PTSD: Review and methodological considerations. *Psychiatry Interpers. Biol. Process.* 71, 134–168.
- Smith, S.M.; Goldstein, R.B.; Grant, B.F. (2016). The association between post-traumatic stress disorder and lifetime DSM-5 psychiatric disorders among veterans: Data from the National Epidemiologic Survey on Alcohol and Related Conditions-III (NESARC-III). *J. Psychiatr. Res.* 82, 16–22.
- Shigemura, J., Ursano, R. J., Morganstein, J. C., Kurosawa, M., & Benedek, D. M. (2020). Public responses to the novel 2019 coronavirus (2019-nCoV) in Japan: Mental health consequences and target populations. *Psychiatry and clinical neurosciences*, 74(4), 281.
- Xiang, X., Wu, S., Zuerink, A., Tomasino, K. N., An, R., & Himle, J. A. (2020). Internet-delivered cognitive behavioral therapies for late-life depressive symptoms: a systematic review and meta-analysis. *Aging & Mental Health*, 1-11.
- Xiang, Y. T., Yang, Y., Li, W., Zhang, L., Zhang, Q., Cheung, T., & Ng, C. H. (2020). Timely mental health care for the 2019 novel coronavirus outbreak is urgently needed. *The lancet psychiatry*, 7(3), 228-229.
- Yao, H.; Chen, J.-H.; Xu, Y.-F. (2020). Rethinking online mental health services in China during the COVID-19 epidemic. *Asian J. Psychiatr.* 50, 102015.
- Zohar, J.; Juven-Wetzler, A.; Sonnino, R.; Cwikel-Hamzany, S.; Balaban, E.; Cohen, H. (2011) New insights into secondary prevention in post-traumatic stress disorder. *Dialogues Clin. Neurosci.* 13, 301.
- Zhou, Y.; Sun, L.; Wang, Y.; Wu, L.; Sun, Z.; Zhang, F.; Liu, W. (2020). Developments of prolonged exposure in treatment effect of post-traumatic stress disorder and controlling dropout rate: A meta-analytic review. *Clin. Psychol. Psychother.* 27, 449–462.
- Zhang, J., Lu, H., Zeng, H., Zhang, S., Du, Q., Jiang, T., & Du, B. (2020). The differential psychological distress of populations affected by the COVID-19 pandemic. *Brain, behavior, and immunity*, 87, 49.