

# Randomized Clinical Controlled Trial on the ASSYST Treatment Intervention Provided to Public Sector Workers During the Covidoid-19 Pandemic



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## Abstract

The aim of this randomized clinical controlled trial and humanitarian psychosocial assistance project was to evaluate the effectiveness of the Acute Stress Syndrome Stabilization Individual Remote (ASSYST-IR) treatment intervention in reducing posttraumatic stress disorder (PTSD), depression, and anxiety symptoms of sixty-one public sector workers during the COVID-19 pandemic. A two-arm randomized controlled trial (RCT) design was applied. PTSD, anxiety, and depression symptoms were measured in three-time points for all participants in the study.

The statistical analyses showed a significant decrease in PTSD, anxiety, and depression symptoms in the treatment group participants, while the control group participants maintained or increased anxiety and depression symptoms, with a discrete improvement in the level of PTSD symptoms.

The statistical results and clinical observations confirmed the effectiveness, efficiency, and safety of the ASSYST-IR in the mental health recovery of the treatment group participants, possibly preventing the development of PTSD and contributing to the collective health of the participants, and people in their work and social environment.

**Keywords:** ASSYST, COVIDoid-19; PTSD; Anxiety; Depression; Exhaustion; Mental Health.

## Introduction

The increase of cases by community transmission and the worsening of COVID-19 in patients with comorbidities caused a growth in the number of people infected in hospitals, also increasing the number of health professionals affected by the disease, especially those who dealt directly with these patients, exposing themselves to a high viral load. According to data from the World Health Organization (WHO) [1]; the percentage of healthcare workers affected by COVID-19 varied between 8% and 10%.

Extreme exhaustion is a trigger for suicidal thoughts among health care workers. However, other factors also contribute to the increase of anxiety and depression in health care teams and in the general population: stress caused by social isolation, limitations in people's ability to work, loneliness, fear of being infected, suffering and dying, or that loved ones will suffer and die, the loss of loved ones, and financial worries [2].

Nowadays, the way work is organized has shown evidence of

the relationship between expressions of human suffering such as depression, suicide attempts, alcohol and drug abuse, stress, anxiety crises, fatigue, and professional burnout, which are becoming increasingly common [2,3]. According to Jacques [4] and Zanelli [5], psychosocial risks are more complex, as they can both lead to illness and aggravate it, and, unlike physical risks, be a byproduct of getting sick. The mental health of workers was affected by several factors, such as uncertainties, work overload, and exposure to risks those professionals experienced in the pandemic, with the increasing care demands required by infected patients who required inpatient nursing and intensive hospital care [6,7].

Among the major causes of illness and absence of workers are stress and emotional exhaustion, resulting from psychological exhaustion, which have been highlighted in research [8-10]. The lack of ability to adapt in the work environment, and the non-fulfillment of the obligations demanded by it characterize occupational stress, which can be damaging to health, resulting in low involvement with work, absences, delays, and frequent search for medical support and pharmacological help [11,12].

According to Whitt-Woosley et al [13], COVID-19 related stressors, such as pandemic concerns and family conflict, were negative predictors for secondary traumatic stress (STS) and burnout (BO) among professionals in a social care system in the USA. In Belgium, fear of COVID-19 contamination for family members among foster care workers was considered indicative of STS and BO [14]. For frontline healthcare workers in Hong Kong, adjustments in institutional practices, such as increased workload and difficult screening decisions, may serve as additional stressors of the clinical work environment, and consisted of the highest occurrence of STS and BO among nurses [15].

Yeung et al., reported that up-to-date information and timely communication with the healthcare system as an organizational action was associated with lower rates of BO [15]. This is consistent with other publications that have demonstrated perceived organizational support with similar results [16,17]. A study in China reports that a greater investment in emotional support than tangible support was associated with higher satisfaction with compassion (CS), lower STS, and lower BO, as was apparent among foreign domestic employees in Hong Kong during the COVID-19 pandemic [18].

Accurately predicted in a recent study, a major psychological impact on mental health across the population may occur as a result of the pandemic [19]. The professional and personal demotivation of employees in the presence of low social support and scarce social skills repertoire in the organizational context can lead to the onset of burnout, poor service performance, and poor quality of life [20-22].

To Siqueira and Russo, telepsychology is a segment of telehealth that employs New Information and Communication Technologies associated with the internet, with the goal of increasing the population's access to high-quality psychological services [23]. These authors mention that there are scientific publications proving the effectiveness and/or efficacy of telepsychology in the treatment of several mental disorders, and that the communication between the patient and the professional can be synchronous; that is, in real time (videoconference) or asynchronous, when there is a time interval between contacts (e-mail, posts on secure websites, or text messages).

The present scientific research and humanitarian psychosocial assistance project was conducted to support the Bahia Diabetes and Endocrinology Center (CEDEBA) employees identified with acute posttraumatic stress disorder symptoms produced by the COVID-19 pandemic. Through this project, first psychosocial care was provided to alleviate the mental suffering of CEDEBA workers and favor the maintenance of human dignity during and after the pandemic crisis. It also constituted a public utility in that it was oriented toward purposes of general interest and provided voluntary services in a disinterested manner with the aim of recovering the psychological health of the workers assisted.

### Acute Stress Syndrome Stabilization Individual Remote Treatment Intervention

The Acute Stress Syndrome Stabilization (ASSYST) Individual Remote treatment intervention was born during humanitarian online-work and is an Adaptive Information Processing (AIP)-informed, evidence-based, carefully field-tested, and user-friendly psychophysiological algorithmic approach, whose reference is the EMDR Protocol for Recent Critical Incidents and Ongoing Traumatic Stress (EMDR-PRECI) [24]. This treatment intervention is specifically designed to provide online support to clients who present Acute Stress Disorder (ASD) or Posttraumatic Stress Disorder (PTSD) intense psychological distress and/or physiological reactivity caused by the disorders' intrusion symptoms associated with the memories of the adverse experience(s) [25].

The objective of this treatment intervention is focused on the patient's Autonomic Nervous System sympathetic branch hyperactivation regulation through the reduction or removal of the activation produced by the sensory, emotional, or physiological components of the pathogenic memories of the adverse experience(s) to achieve optimal levels of Autonomic Nervous System activation, stop the three major stress hormones [adrenaline (epinephrine), noradrenaline (norepinephrine), and cortisol] secretion, and reestablish the Prefrontal Cortex functions (e.g., processing of information); thus, facilitating the AIP-system and the subsequent adaptive processing of information [26].

## Previous ASSYST Individual and Group Treatment Intervention Studies

Six previous studies on the Individual and Group ASSYST treatment interventions have proven their efficacy and safety with different populations: (I) General population in lockdown and with ongoing traumatic stress during the COVID-19 Pandemic. (II) TeleMental Health counseling to the general population after adverse experiences. (III) Mental Health Professionals working during the COVID-19 pandemic with patients suffering from trauma-related disorders and stressors. (IV) General population with non-recent pathogenic memories. (V) Adult Syrian refugees living in Lebanon. (VI) Adult females with adverse childhood experiences [27-32].

## Objective

The objective of this randomized clinical controlled trial and humanitarian psychosocial assistance project was to evaluate the effectiveness of the Acute Stress Syndrome Stabilization Individual Remote (ASSYST-IR) treatment intervention in reducing posttraumatic stress disorder (PTSD), depression, and anxiety symptoms in public sector workers during the COVID-19 pandemic.

## Methodology

### Study Design

To measure the effectiveness of the ASSYST-IR on the dependent variables PTSD, Anxiety, and Depression, this study used a two-arm randomized controlled trial design with a treatment group and a wait-list control group. PTSD, anxiety, and depression symptoms were measured in three-time points for all participants in the study: Time 1. Pre-treatment assessment; Time 2. Post-treatment assessment; and Time 3. Follow-up assessment.

To have a representative sample, we used the concept of probability sampling, as it is considered a rigorously statistical sample [33]. The defined sample (n) for the ASSYST-IR was of 68 participants. Thirty-four participants were assigned to the Treatment Group (TG) and the same number to the Control Group (CG). We opted for a quantitative study because of the humanitarian aid plan established a priori, with clearly specified and operationally defined propositions [34].

### Research Ethics

The research project followed the CNS Resolution No. 466/2012, which approves the guidelines and standards regulating research involving human beings in Brazil, with the CONEP - National Council for Research Ethics, as responsible for supervising and monitoring the application of its normative provisions [35]. The research was set up so that all participants underwent the ASSYST-IR treatment intervention, constituting a

Randomized Cross-Over Clinical Trial [36].

### Participants

This study was conducted in Brazil from March 22, 2021 to October 28, 2022, with the Brazilian (Latino) adult general population. The implementation of the research began with the recruitment and selection of the participants by psychologists from the Integrated Service for Attention to Worker's Health - SIAST, who used the interview form conducted during the pandemic period due to COVID-19. Employees who did not meet the criteria for inclusion in the survey were referred to SIAST for follow-up.

The selected participants received pertinent information about the research, signed the Free and Informed Consent Form, and filled out the identification form, signing the commitment to participate. Then, participants carried out the Time 1 pre-treatment assessment by answering the Posttraumatic Stress Disorder Checklist- 5 (PCL-5) and the Hospital Anxiety and Depression Scale (HADS) online through Google forms.

The profile of the research participants consisted of 55 females and 06 males, with ages ranging from 21 to 67 years old (M=47). Regarding education, 14 participants were high school level, 03 technical level, and 44 higher education level; regarding occupations, 18 participants were from the administrative area, 06 social workers, 06 nutritionists, 05 doctors, 04 attendants, 04 nurses, 04 nursing technicians, 03 pharmacists, 03 psychologists, 02 physiotherapists, 01 cleaning assistant, and 05 with other occupations. Regarding religion, 23 participants declared themselves Catholic, 12 Evangelical, 10 Spiritualist, 09 had no religion, 03 Jehovah's witnesses, 02 Christians, 01 Buddhist, and 01 Catholic/Spiritualist.

### Instruments for Psychometric Evaluation

a) To measure PTSD symptom severity and treatment response, we used the Posttraumatic Stress Disorder Checklist for DSM-5 (PCL-5) provided by the National Center for PTSD (NCPTSD) with the time interval for symptoms to be the past week. The instrument was translated and back-translated to Portuguese. It contains 20 items, including three new PTSD symptoms (compared with the PTSD Checklist for DSM-IV) [37,38]: blame, negative emotions, and reckless or self-destructive behavior. Respondents indicated how much they have been bothered by each PTSD symptom over the past week (rather than the past month), using a 5-point Likert scale ranging from 0=not at all, 1=a little bit, 2=moderately, 3=quite a bit, and 4=extremely. A total symptom score of zero to 80 can be obtained by summing the items. The sum of the scores yields a continuous measure of PTSD symptom severity for symptom clusters and the whole disorder. Psychometrics for the PCL-5, validated against the Clinician-Administered PTSD Scale-5 (CAPS-5) diagnosis, suggest that a score of 31-33 is optimal to determine

probable PTSD diagnosis, and a score of 33 is recommended for use at present [39,40].

b) To measure anxiety and depression symptom severity and treatment response, we used the Hospital Anxiety and Depression Scale (HADS), which has been extensively used to evaluate these psychiatric comorbidities in various clinical settings at all levels of healthcare services and with the general population. The instrument was translated and back-translated to Portuguese. It is a 14-item self-report scale to measure the Anxiety (7 items) and Depression (7 items) of patients with both somatic and mental problems using a 4-point Likert scale ranging from 0 to 3. The response descriptors of all items are Yes, definitely (score 3); Yes, sometimes (score 2); No, not much (score 1); No, not at all (score 0). A higher score represents higher levels of Anxiety and Depression: a domain score of 11 or greater indicates Anxiety or Depression; 8–10 indicates borderline case; 7 or lower indicates no signs of Anxiety or Depression [41-43].

### Procedure

A computer-generated simple randomization with a 1:1 allocation ratio was used. After this randomized selection of the Treatment Group (TG) and the Control Group (CG) participants, the Project Coordination received all the intake interview information and made the treatment schedules. During the intake interview, data from a family member or close friend of the employee was recorded to be used when necessary. They were given instructions on how to proceed to participate in the session and were allowed to contact the therapist/research coordinator by phone and/or send messages when necessary.

The Treatment Group (TG) received the ASSYST-IR while the Control Group (CG) participated in two sixty-minute psycho-emotional self-care sessions. At the end of the TG intervention, and after Time 3 assessment, participants received the two sixty-minute psycho-emotional self-care sessions; and for ethical reasons the CG participants received the ASSYST-IR intervention.

### Withdrawal from The Study

All research participants had the right to withdraw from the study without justification at any time and with assurances of no prejudicial result for his or her work at CEDEBA. Refusal to participate also did not entail any penalty or change in the way they were assisted by the researcher therapist. If participants decided to withdraw from the study, they were no longer followed up in the research protocol. There were seven withdrawals during the study. Six due to personal illness or illness of a family member, and one was not located after treatment. See Flow-Diagram.

### Treatment

The four ASSYST-IR sixty-minute weekly sessions for each participant were conducted by eleven mental health professionals formally trained in the ASSYST-IR administration in a secure and

reserved virtual environment. Those sessions were regulated by CFP Resolution nº 11/2018 [44] which regulated the provision of psychological services performed by means of information and communication technologies during the COVID-19 pandemic, and the CREMEB Resolution nº 367/2020 [45] which provides medical assistance using telemedicine tools during a state of public calamity that determines isolation.

The ASSYST-IR sessions (by videoconference) were carried out weekly by a team of volunteer physicians and psychologists responsible for the psychological care of the participants, recording the pertinent information in medical records, and observing the guidelines of the Codes of Professional Ethics (CFM Resolution nº 1931/2009, and CFP Resolution nº 10/2005) of the respective Class Councils [46,47]. The data necessary for the research was downloaded in the form Worksheet - ASSYST-I Remote and the participant's subjective units of disturbance scale (SUDs) for each participant were taken during the individual sessions [48].

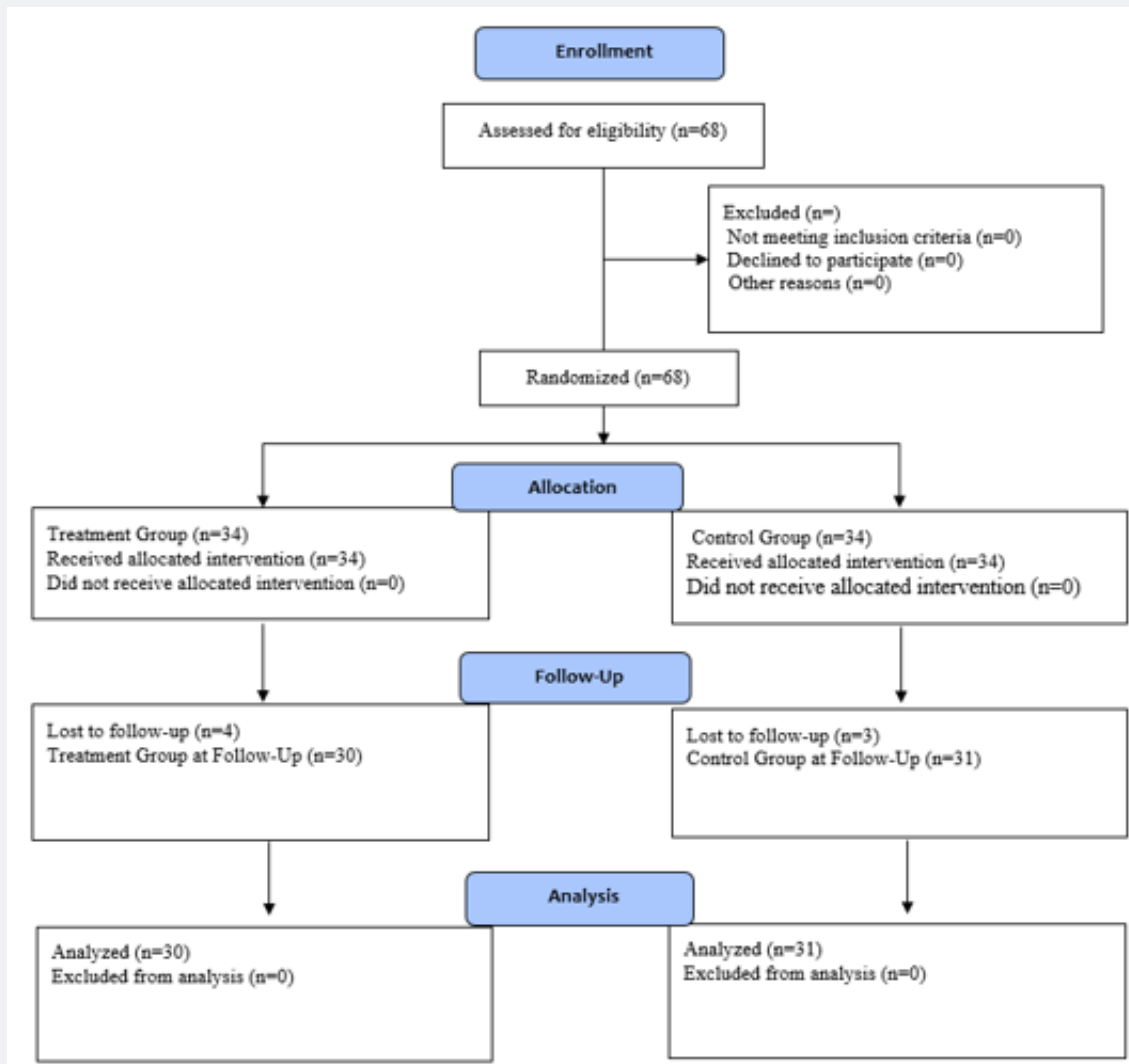
Assessment Time 2 (eight days post-treatment) and Time 3 (sixteen days follow-up) were self-administered through Google forms using the PCL-5 and HADS instruments. Because the research was developed in the middle of the pandemic, with several scheduling difficulties, the clinical team developed a consistent workflow, using flexible scheduling strategies to enable the participation of all. The lead researcher, a certified trainer in the ASSYST protocol by EMDR Mexico, held weekly clinical supervision meetings with the mental health professionals who participated in the project via videoconference over 2 two years. The clinical supervision meetings were held to evaluate treatment fidelity, participant's clinical progress, and future activities.

### Statistical Analyses

Of the 68 potential participants recruited, the statistical analysis was conducted for 61. Thirty-one participants in the Control Group - CG, and thirty participants in the Treatment Group. The data was organized in the Statistical Package for the Social Sciences (SPSS) version 21.0. Initially, the quantitative data was submitted to descriptive statistics, T-tests, and ANOVA to check for differences. The statistical significance level adopted in this study was 5% or 0.05. The proponent was responsible for the Research Database (SPSS) issuance of statistical reports, including monitoring of the participants' attendance to the therapy sessions, with feedback to the partner institution. CEDEBA promoted the stimulus for adherence to and attendance of participants in the ASSYST-I Remote Project.

### Results

The HADS and PCL-5 scores statistical analysis are shown in the following graphs and statistical comments:



Flow Diagram:

The robust linear regression model shows a mean reduction of -1.03[-2.18; 0.12] 95% CI in HADS scores for Anxiety, between Treatment and Control Group, with statistical significance ( $p=0.080$ ). In general, regardless of the occasion (pre, post at 8 days or follow-up at 16 days), the intragroup mean for the Treatment Group varied from 7.97 (pre) to 6.30 (post 16), showing a reduction of 20.95%, while in the Control Group there was an increase from 7.93 to 8.03, a percentage variation of +1.26% (Figure 1).

The ordinal logistic regression model shows 47.0% less chance of Anxiety  $-(1-0.53) \times 100$  of the Treatment Group compared to the Control Group, with statistical significance ( $p=0.030$ ).

Descriptively, it was observed, that regardless of the occasion (pre, post 8 days or follow-up at 16 days) and level (0-7, 8-10, 11-21), for example, the prevalence of Anxiety (HADS) within the Treatment Group in the pre occasion had index of 50.0% (level 0-7) and 36.67% (level 11-21), and in the post 16 days presented index of 66.67% (level 0-7), and 13.33% (level 11-21), showing substantial reduction of Anxiety of -33.4% and -63.7%, respectively. The behavior observed in the Control Group was 45.16% (level 0-7) and 22.58% (level 11-21) preoperatively, and 45.16% and 29.03% postoperatively, with maintenance at level 0-7, and percentage variation of +35.7% at level 11-21, indicating worsening of the anxiety symptom (Figure 2).

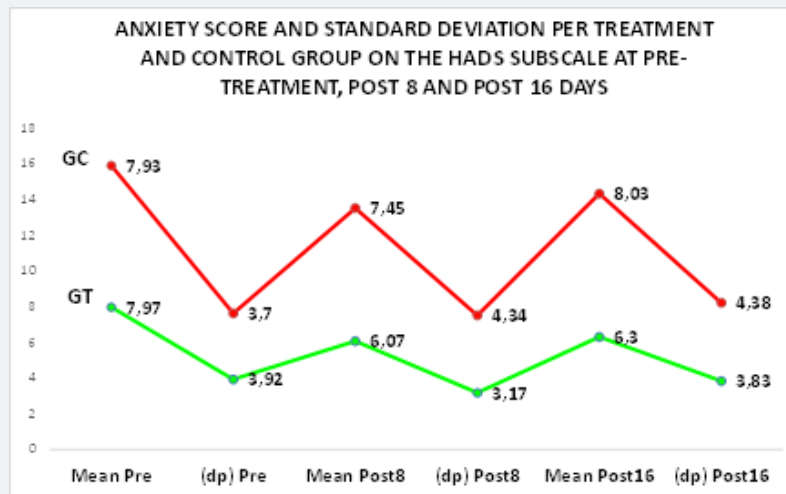


Figure 1: Regression model and statistics of the HADS Anxiety scores for both groups during the three assessment times.

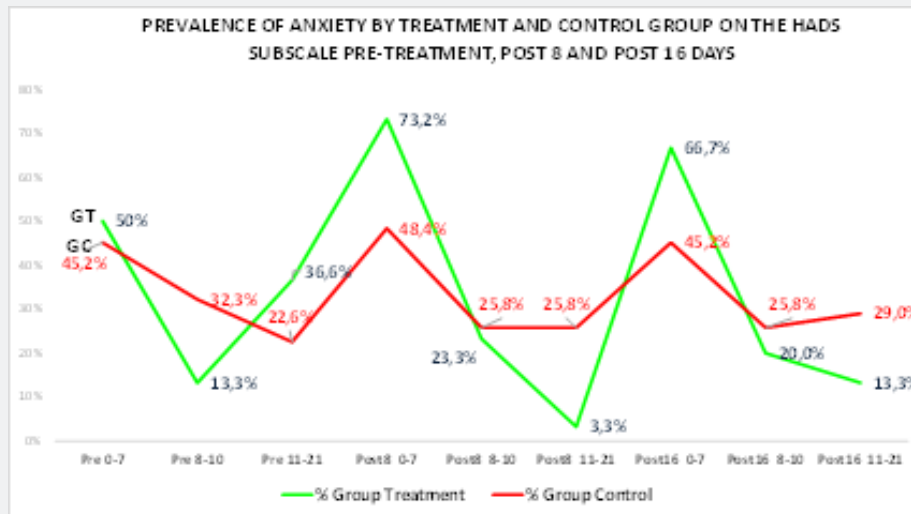


Figure 2: Prevalence of HADS Anxiety scores for both groups during the three assessment times.

The robust linear regression model shows a mean reduction of -0.31 [-1.26; 0.63] 95% CI in the HADS subscale score for Depression, between the Treatment and Control Group, without statistical significance (p=0.510). In general, we observed descriptively that, regardless of the occasion (pre, post 8 days or 16 days), the intra-treatment group mean ranged from 4.67 (pre) to 4.83 (post 16 days), showing a slight increase of 3.4%, while in the Control Group it ranged from 4.61 (pre) to 5.26 (post 16 days), showing a substantial increase of 14.1% (Figure 3).

The ordinal logistic regression model shows a 42.0% less chance (1-0.58) x100 of occurrence of Depression according to the HADS subscale in the Treatment Group in relation to the control group, with statistical significance (p=0.030) (Figure 4).

Descriptively, it was observed that, regardless of the occasion (pre, post at 8 days or follow-up at 16 days) in level 0-7, which corresponds to the absence of Depression, the prevalence (HADS) within the Treatment Group varied from 76.67 (pre) to 86.70 (follow-up at 16 days), showing that 13.0% of the participants improved their level of Depression, while within the Control Group, there was a decrease from 74.2 to 71.0, with a percentage variation of -4.3%. The PCL-5 is a questionnaire that evaluates the 20 symptoms of Posttraumatic Stress Disorder (PTSD) from DSM-5, which was applied to all research participants. The statistical results are described and analyzed below: (Figure 5)

The random effect regression model shows Coefficient of -0.57, 95% CI - Range -5.90 to 4.76, P-value 0.83, standard error 2.72 in

PTSD scores, between Treatment and Control Group. In general, it is observed that, regardless the occasion (pre, post at 8 days or 16 days follow-up), the intra-treatment group mean ranged from

20.79 (pre) to 16.55 (post 16), showing a reduction of -20.39%, while in the Control Group it ranged from 19.84 (pre) to 16.35 (post 16), with a percentage variation of -17.59% (Figure 6).

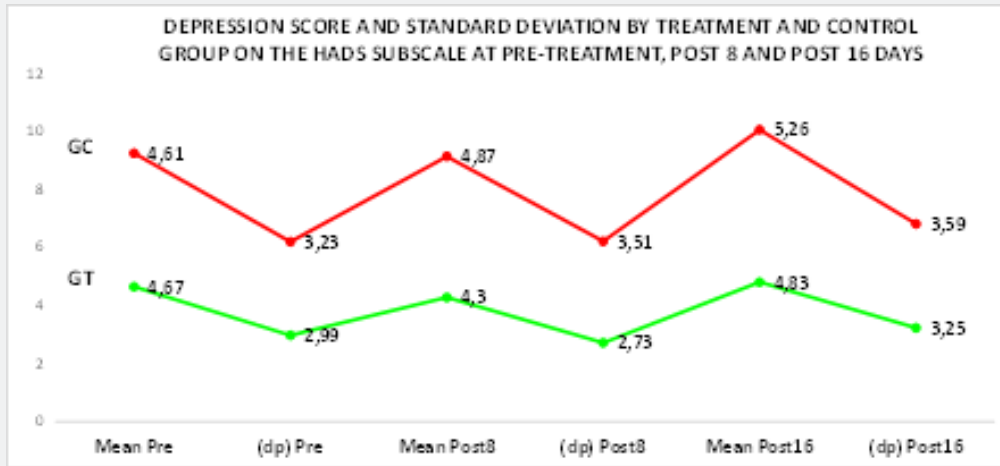


Figure 3: Regression model and statistics of the HADS Depression scores for both groups during the three assessment times.

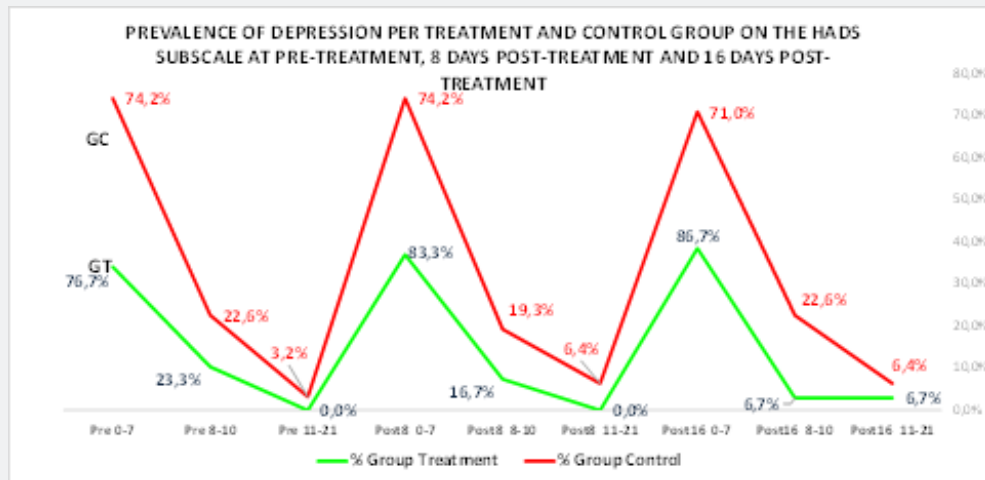


Figure 4: Prevalence of HADS Depression scores for both groups during the three assessment times.

The robust logistic model shows Odds ratio 0.73; 95% CI - Range 0.36 to 1.46; with statistical significance  $p = 0.37$ . Descriptively, it was observed that, regardless the occasion (pre, post at 8 days or post at 16 days), there was a decrease in the PTSD indices in both groups, being that for the Treatment Group - TG the reduction from pre to follow-up at 16 days was of 44.43%, and in the Control Group - CG the reduction was of 22.22%; it can be concluded that the efficacy of the ASSYST-IR intervention in the TG was 50.0% higher in relation to the CG.

### Discussion

The aim of this randomized clinical controlled trial and humanitarian psychosocial assistance project was to evaluate the effectiveness of the Acute Stress Syndrome Stabilization Individual Remote (ASSYST-IR) treatment intervention in reducing posttraumatic stress disorder (PTSD), depression, and anxiety symptoms of 61 public sector workers during the COVID-19 pandemic.

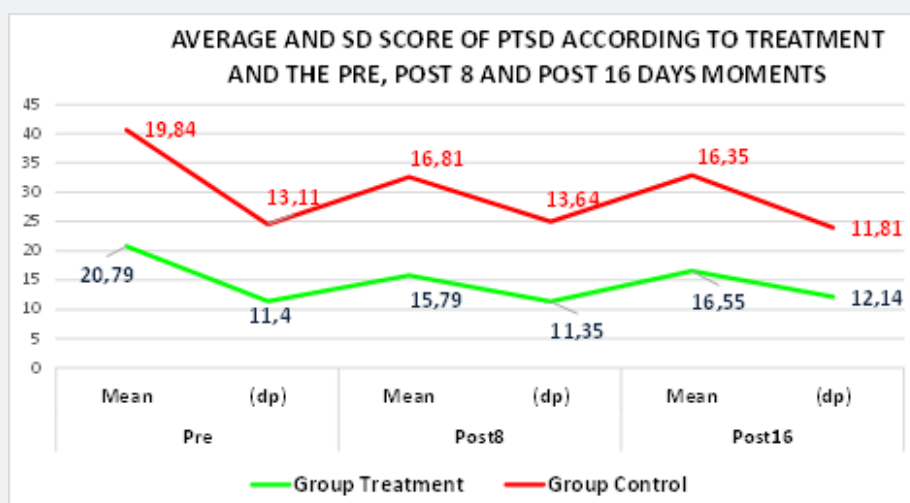


Figure 5: Regression model and statistics of PTSD scores for both groups during the three assessment times.

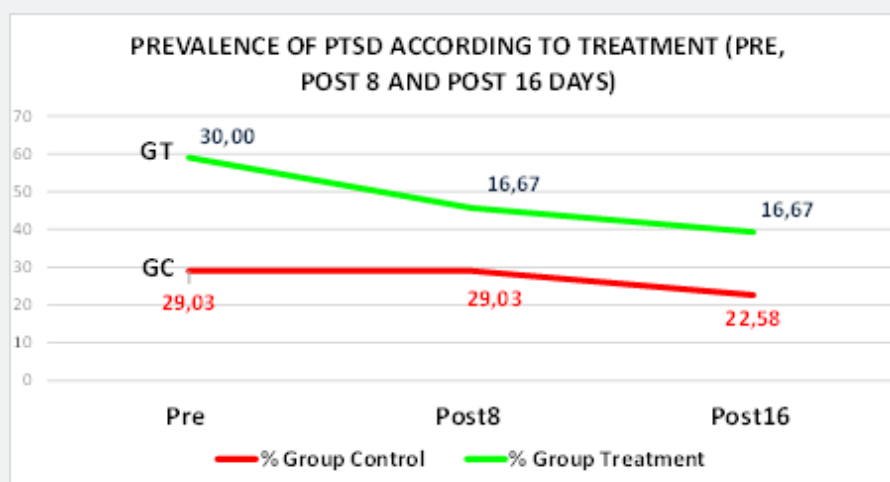


Figure 6: Prevalence of PTSD scores for both groups during the three assessment times.

The statistical analyses showed that there was a decrease in anxiety, depression, and PTSD levels in the TG participants; maintenance or worsening of anxiety and depression levels, with a slight improvement in PTSD levels in the CG. The reduction in acute stress was statistically proven, as well as in the participants' testimonies. The results were presented via videoconference, using the Zoom tool, and in a working meeting with CEDEBA's top management.

This was a unique and innovative action carried out in a public institution (CEDEBA) in Bahia, Brazil. It was an appropriate intervention for the atypical moment in which it was developed, given that the COVID-19 pandemic had a negative impact on mental health. Moreover, there was a dramatic increase in the

prevalence of anxiety and depression in the world by 2020, around 25% according to WHO [1].

The early psychosocial care provided with the ASSYST-IR intervention increased the CEDEBA workers' mental health. Moreover, it favored the maintenance of human dignity during and after the pandemic crisis: a 20.95% reduction in anxiety (Figure 1); and in level 0-7, the prevalence (HADS) varied from 76.67 (pre) to 86.70 (follow-up), showing a 13.0% increase in participants who did not present depression (Figure 3).

As a result of our findings, we can infer that a 44.43% (Figure 6) reduction in PTSD symptoms in workers in a public organization in the middle of a pandemic is a powerful result, considering the number of interventions (04 sessions per participant), achieving



this randomized clinical controlled trial and humanitarian psychosocial assistance project's objectives and possibly preventing the development of PTSD.

The impact on the mental health of the participants is evident as shown in figures 1 through 6. The WHO states that the burden of depression alone will be the greatest cause of loss to the population among all health problems by 2030. Therefore, we can state that the ASSYST-IR treatment is a focal brief intervention with robust effectiveness and efficacy and ideal for the world of public and private organizations.

In the medical records and feedback reports analysis, the research coordination could verify that beyond the expected results, more benefits were achieved, which are: a) performance of work activities with a level of professional performance equal to or higher than the previous period of illness; b) focus on preventive behaviors that are under your control, relaxing activities, and cultivation of affective bonds in moments of family and social interaction; c) acceptance of the present moment, with the memory that it will pass; d) management of feelings to achieve a satisfactory level in interpersonal and social relationships.

### Conclusion

The benefits of the participants' mental health improvement work in favor of a better adaptation in the work and social family environment, which constitutes an undeniable gain from the human point of view, and in interpersonal relationships, with an increase in the general well-being of the individuals who make up the employee's nucleus of coexistence.

This scientific research within the humanitarian psychosocial assistance project allowed the knowledge of the situation experienced by workers from different professional categories, social groups, often different views on a given situation, and different experiences, which facilitated the construction of a varied and broad knowledge of the pandemic situation and its impact on the mental health of the participants.

After the end of the research, CEDEBA/SIAST made a presentation about the project, selected as a successful action by the Bahia State Secretary of Health - SESAB, in the closing event of 2022, where the experience was reported, explaining the gains obtained in the quality of work and life of the participants through testimonials written by them.

The accumulation of this knowledge can contribute to the construction of strategies that will minimize the harmful effects of pandemics like COVID-19 on the mental health of workers and society, translating into a contribution of the group to the academic world and to public and private institutions in health.

The Integra ASSYST-I Remote Project constituted a Multilateral Cooperation initiative between the Research Group of Bahia, Brazil and EMDR Mexico, enabling the exchange of experiences and knowledge of facets of the impact of the COVID-19 pandemic

on the mental health of the residents of the two participating countries. This cross-cultural partnership has added value and greater knowledge for managing situations arising from incidents, catastrophes, and epidemics, among others with multiple victims.

Its accomplishment was justified by the positive results in collective health, humanitarian aid provided to the participants, people from their working and social environment, and by the recovery of the emotional health of the participants treated with the ASSYST-IR intervention, reaching the objective defined for the research and reestablishing their professional and social activities, possibly preventing the development of PTSD in the treated target population.

With workers exposed to various stressors, it is of fundamental importance that public and private institutions adopt measures to minimize the negative effects of the pandemic on a continuous basis, offering services that treat workers with stress symptoms, and to promote emotional and psychosocial health.

### Limitations and Future Directions

We have noticed that the limitations were due to the second wave of the COVID-19 pandemic; many participants were away from work, either because they had a chronic disease, because they had COVID-19, or because they were quarantined because their family members had been infected. The difficulty of connectivity for some participants was solved by CEDEBA's Board of Directors, together with the research coordinators, by establishing a private room for the online sessions. We can say that the limitations became difficulties because they were solved.

We suggest the use of the ASSYST Remote Group intervention [27], which brings the possibility of an intervention with a larger number of workers per session for the resolution of acute posttraumatic stress, in the perspective of providing better emotional health in public and private organizations, for future studies.

### Conflict of Interest and Funding

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest. No remuneration of any kind was due to any of the parties for its execution.

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identified with stress due to the pandemic by COVID-19, and for promoting the reduction of distress and ensuring the quality in their work and social activities, which was proven in the results presented.

### References

1. World Health Organization. Mental Health and Psychosocial Considerations During COVID-19 Outbreak (2022) COVID-19 pandemic triggers 25% increase in prevalence of anxiety and depression worldwide.
2. Souza HA, Bernardo MH (2019) Preventing Work-Related Mental Illness: the praxis of Unified Health System professionals committed to workers' health. *Revista Brasileira de Saúde Ocupacional*.
3. Stuijzand S, Deforges C, Sandoz V, Sajin CT, Jaques C, et al. (2020) Psychological impact of an epidemic/pandemic on the mental health of healthcare professionals: a rapid review. *BMC Public Health* 20(1): 1230.
4. Jacques MG (2007) The causal nexus on mental health/illness related to work: a new demand for psychology. *Psychology & Society* 19: 112-119.
5. Zanelli JC (2015) Risks and psychosocial intervention in work organizations. In: Bensassolli P, Borges-Andrade J (Eds), *Dicionário de psicologia organizacional e do trabalho*, São Paulo: Casa do Psicólogo, pp. 642-650.
6. Ribeiro AP, Oliveira GL, Silva LS, Souza ER (2020) Health and safety of health care workers in patient care in the context of the Covid-19 pandemic: a literature review. *Rev bras saúde ocup*, p. 45.
7. Serrão C, Martins V, Ribeiro C, Maia P, Pinho R, et al. (2022) Professional Quality of Life Among Physicians and Nurses Working in Portuguese Hospitals During the Third Wave of the COVID-19 Pandemic. *Front Psychol* 13:814109.
8. Brooks SK, Webster RK, Smith LE, Woodland L, Wessely S, et al. (2020) The Psychological Impact of Quarantine and How to Reduce it: Rapid Review of the Evidence. *Lancet* 395(10227): 912-920.
9. Silva Filho OCD, Minayo MCS, Huremović D (2020) Psychiatry of Pandemics: A Mental Health Response to Infection Outbreak. *Ciência & Saúde Coletiva* 25(suppl 1): 2499-2500.
10. Ornelas-Mejorada RE, Tufiño TMA, Sánchez-Sosa JJ (2023) Ansiedad y depresión en mujeres con cáncer de mama en radioterapia: Prevalencia y factores asociados. *Acta de investigación psicol* 1(3): 401-414.
11. Pie ACS, Fernandes RCP, Carvalho FM, Porto LA (2020) Factors associated with presenteeism in industrial workers. 2020. *Revista Brasileira de Saúde Ocupacional* 45: e13.
12. Sadir MA, Bignotto MM, Lipp MEN (2010) Stress and quality of life: influence of some personal variables. *Paidéia (Ribeirão Preto)* 20(45): 73-81.
13. Whitt-Woosley A, Sprang G, Eslinger J (2022) The impact of COVID-19 and experiences of secondary traumatic stress and burnout. *Psychol Trauma* 14(3): 507-515.
14. Verheyden C, Van HF, West D, Vanderfaellie J (2020) Secondary traumatic stress, burnout and compassion satisfaction among Flemish foster care workers during the COVID-19 lockdown. *Developmental Child Welfare* 2(4): 227-243.
15. Yeung NCY, Tang JLT, Lau STY, Hui KH, Cheung AW, et al. (2023) "Caring for the helpers": factors associated with professional quality of life among Hong Kong nurses during the fifth wave of the COVID-19 pandemic. *Eur J Psychotraumatol* 14(1): 2183454.
16. Kim MN, Yoo YS, Cho OH, Hwang KH (2022) Emotional Labor and Burnout of Public Health Nurses during the COVID-19 Pandemic: Mediating Effects of Perceived Health Status and Perceived Organizational Support. *Int J Environ Res Public Health* 19(1): 549.
17. Reitz KM, Terhorst L, Smith CN, Campwala IK, Owoc MS, et al. (2021) Healthcare providers' perceived support from their organization is associated with lower burnout and anxiety amid the COVID-19 pandemic. In: Mortazavi F (Ed.), *PloS one* 16(11): e0259858.
18. Yeung NCY, Huang B, Lau CYK, Lau JTF (2021) Finding the silver linings in the COVID-19 pandemic: Psychosocial correlates of adversarial growth among Filipina domestic helpers in Hong Kong. *Psychological Trauma* 14(2): 291-300.
19. Gunnell D, Appleby L, Arensman E, Hawton K, John A, et al. (2020) Suicide risk and prevention during the COVID-19 pandemic. *The Lancet Psychiatry* 7(6): 468-471.
20. Souza MB, Helal DH, Paiva KCM de (2019) Descriptive analysis of the dimensions of burnout: a study with young workers. *Cadernos Brasileiros de Terapia Ocupacional* 27(4): 817-827.
21. Torres ARA, Chagas IOM, Moreira ACA, Barreto ICHC, Rodrigues EM, et al. (2013) Work-related illness: repercussions on the lives of workers and their families. *Sanare* 10(1).
22. Trumello C, Bramanti SM, Ballarotto G, Candelori C, Cerniglia L, et al. (2020) Psychological Adjustment of Healthcare Workers in Italy during the COVID-19 Pandemic: Differences in Stress, Anxiety, Depression, Burnout, Secondary Trauma, and Compassion Satisfaction between Frontline and Non-Frontline Professionals. *Int J Environ Res Public Health* 17(22): 8358.
23. Siqueira CCA, Russo, MN (2018) Online psychotherapy: ethics, safety and scientific evidence on technology-mediated clinical practice. São Paulo: Zagodoni, Brazil.
24. Jarero I, Artigas L, Luber M (2011) The EMDR protocol for recent critical incidents: Application in a disaster mental health continuum of care context. *Journal of EMDR Practice and Research* 5(3): 82-94.
25. American Psychiatric Association (2013) Diagnostic and statistical manual of mental disorders. In: (5<sup>th</sup> edn.), In: Arlington VA, (Ed.).
26. Jarer I (2021) ASSYST Treatment Procedures Explanation. Technical Report.
27. Becker Y, Estévez ME, Pérez MC, Osorio A, Jarero I, et al. (2021) Longitudinal Multisite Randomized Controlled Trial on the Provision of the Acute Stress Syndrome Stabilization Remote for Groups to General Population in Lockdown During the COVID-19 Pandemic. *Psychology and Behavioral Science International Journal* 16(2): 1-11.
28. Smyth-Dent K, Becker Y, Burns E, Givaudan M (2021) The Acute Stress Syndrome Stabilization Remote Individual (ASSYST-RI) for Tele Mental Health Counseling After Adverse Experiences. *Psychology and Behavioral Science International Journal* 16(2): 1-7.
29. Magalhães SS, Guimarães ACF, Silva CN, Souza JSS, Carasek L, et al. (2021) Nascimento UJA, Capuano VQC, Jarero I, Toralles MBP. Psychological Assistance Project in COVID-19: Integra ASSYST-I Remote. *Plataforma Brasil, Brazil*.
30. Mainthow N, Pérez MC, Osorio A, Givaudan M, Jarero I (2022) Multisite Clinical Trial on the ASSYST Individual Treatment Intervention Provided to General Population with Non-Recent Pathogenic Memories. *Psychology and Behavioral Science International Journal* 19(5).
31. Smith S, Todd M, Givaudan M (2023) Clinical Trial on the ASSYST for Groups Treatment Intervention Provided to Syrian Refugees living in Lebanon. *Psychology and Behavioral Science International Journal* 20(2): 1-8.

32. Mainthow N, Zapien R, Givaudan M, Jarero I (2023) Longitudinal Multicenter Randomized Controlled Trial on the ASSYST Individual Treatment Intervention Provided to Adult Females with Adverse Childhood Experiences. *Psychology and Behavioral Science International Journal* 20(3): 556040.
33. Pereira G, Ortigão MIR (2016) Quantitative research in education: some considerations. *Periferia* 8(1).
34. Schneider EM, Fujii RAX, Corazza MJ (2023) Qualitative-quantitative research: contributions to research in science education. *Rev Pesq Qual* 5(9): 569-84.
35. Resolution N° 466, of December 12, 2012. Updates resolution N° 196/96, of the National Health Council, Ministry of Health, which approves guidelines and norms regulating research involving human beings. Ministry of Health (BR). National Council of Health. Official Gazette of the Federative Republic of Brazil.
36. Hulley SB, Cummings SR, Browner WS, Grady DG, Newman TB (2013) *Designing clinical research*. 4<sup>th</sup> edn. Philadelphia: Wolters Kluwer/Lippincott Williams & Wilkins.
37. Weathers FW, Litz BT, Keane TM, Palmieri PA, Marx BP, et al. (2013) The PTSD Checklist for DSM-5 (PCL-5). Scale available from the National Center for PTSD.
38. Bovin MJ, Marx BP, Weathers FW, Gallagher MW, Rodriguez P, et al. (2016) Psychometric properties of the PTSD checklist for diagnostic and statistical manual of mental disorders- Firth edition (PCL-5) in veterans. *Psychol Assess* 28(11): 1379-1391.
39. Weathers FW, Blake DD, Schnurr PP, Kaloupek DG, Marx BP, et al. (2013<sup>a</sup>) Clinician-administered PTSD Scale for DSM-5. National Center for Posttraumatic Stress Disorder, Boston.
40. Franklin CL, Raines AM, Cucurullo L-A, Chambliss JL, Maieritsch KP, et al. (2018) 27 ways to meet PTSD: Using the PTSD-checklist for DSM-5 to examine PTSD core criteria. *Psychiatry Research* 261: 504-507.
41. Zigmond AS, Snaith RP (1983) The Hospital Anxiety and Depression Scale. *Acta Psychiatrica Scandinavica* 67(6): 361-370.
42. Ying Lin C, Pakpour AH (2017) Using Hospital Anxiety and Depression Scale (HADS) on patients with epilepsy: Confirmatory factor analysis and Rasch models. *Seizure* (45): 42-46.
43. Rico JL, Restrepo M, Molina M (2005) Adaptation and validation of the Hospital Anxiety and Depression Scale (HAD) in a sample of cancer patients from the National Cancer Institute of Colombia. *Avances med* 3: 73-86.
44. CFP Resolution N° 11/2018. Cadastro e-Psi. Regulates the provision of psychological services performed by means of information and communication technologies and revokes CFP Resolution No. 11/2012.
45. Resolution CREMEB N° 367/2020, of July 10, 2020. Diário Oficial [da] República Federativa do Brasil. 2020 jul [accessed 2022 mar 15]. Session 1, p.81. Provides for medical assistance from telemedicine tools, during state of public calamity that determines isolation, quarantine and social distancing and revokes CREMEB resolutions N° 363 and 365/2020.
46. M Resolution (2009) Provides on the physician's professional code of ethics.
47. CFP Resolution (2005) Approves the code of professional ethics of the psychologist. In: XIII Plenário do Conselho Federal de Psicologia, Brasília.
48. Shapiro F (2017) *Eye Movement Desensitization and Reprocessing (EMDR) Therapy*. In: (3<sup>rd</sup> Edn), Guilford Publications, USA.



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