

# The preliminary efficacy and clinical applicability of Brainspotting among Filipino women with severe posttraumatic stress disorder

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## Abstract

**Introduction:** Brainspotting (BSP) is a relatively new neurophysiological-based approach to PTSD treatment that recognizes the relevance and correlation of eye position to neurological and emotional experience. This paper aims to examine the efficacy of BSP in ameliorating severe PTSD symptoms among female residential patients across three-time points.

**Methods:** This study employed a one-group pretest-posttest with delayed posttest quasi-experimental design to establish and determine causal change among different conditions. Different versions of gold-standard measures were administered to individuals with trauma exposure; the Clinician-Administered PTSD Scale 5 (CAPS-5) and the Posttraumatic Stress Disorder Checklist 5 (PCL-5). The sample comprised 13 participants at the Marillac Hills Alabang who incurred severe interpersonal trauma and suffered markedly elevated PTSD symptoms for at least two years. They received three sessions of BSP guided by a therapist's manual and were assessed at three-time points – pretreatment, posttreatment, and two weeks after the treatment completion. Primary data include self-report posttraumatic stress symptoms, which were analyzed using repeated-measures ANOVA with a Greenhouse-Geisser correction and post-hoc test with a Bonferroni correction.

**Results:** Results showed significant improvements in both measures with large effect sizes from 0.859 to 0.979.

**Conclusion:** At  $\alpha 0.01$  (99%) confidence interval, the results suggest that BSP has significant efficacy in decreasing posttraumatic stress symptoms. After the three BSP sessions, all participants were assessed with absent to mild PTSD symptoms. The effects of the treatment persisted during the short-term follow-up evaluation.

**brainspotting therapy; treatment efficacy; Posttraumatic Stress Disorder (ptsd)**

## INTRODUCTION

Exposure to highly prevalent and potentially traumatic situations predisposes an individual to develop an importunate and potentially debilitating psychological condition called Post-

traumatic Stress Disorder (PTSD) [1]. The cardinal symptoms of PTSD include intrusion, avoidance, mood and cognition changes, atypical reactivity [2], and the disruption of psychological states, behavioral processes, and physiological conditions required to respond to environmental demands effectively [3]. In addition, the prolonged effect of these abnormal oscillations in autonomic responses largely contributes to health deterioration, which is commonly man-

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ifested in brain impairments, particularly in areas that mediate alteration in memory [4,5] cardiovascular disease [6] and other physiological consequences [7].

Mental health surveys across 24 nations found that some of the most prevalent traumatic events that include PTSD risk include rape and sexual assault [8] of which are typical of women's experiences. Most research in posttraumatic stress disorder (PTSD) prevalence revealed that women are reported to be diagnosed with PTSD following a trauma [9] experience long duration [10] and greater PTSD symptoms [11]. Lebron-Milad and colleagues [12] observed that women exhibit more activation in the right amygdala, right rostral anterior cingulate cortex (rACC), and dorsal anterior cingulate cortex (dACC) and greater skin conductance response [13] in the course of fear acquisition. Their findings imply that women learn to fear quickly, which could be a risk factor for PTSD.

Sippel and colleagues [14] underlined that the absence of social support after the traumatic incident substantially impacts the development and treatment outcome of PTSD. Paradoxically, throughout stress and trauma, the social engagement system is predominantly disturbed, therefore hindering a person's capacity to experience a level of safety and, eventually, feel connected [15]. Porges' polyvagal theory [16] posited that the critical elements of patient-therapist contact and mind-body practices aimed at controlling physiological state might efficiently enable the restoration of adaptive attachment and social engagement. This novel paradigm emphasized the brain-viscera connection and clarified the therapeutic claims of accessing or revival of the neuropathways.

In light of this, David Grand developed Brainspotting (BSP), a new psychotherapy that deviates from traditional behavioral models. BSP is a technique that recognizes the relevance and correlation of eye position to neurological and emotional experience. Hence the foundational premise of "where you look affects how you feel" was etched. In many trauma cases, the brain's experiences or information that has failed to integrate [17] is stored in the oculomotor orientation called Brainspot [18]. Neurological bases support Brainspot. Research has shown that the attunement and focus to physical cues

such as the minuscule movement of the eyes and its relevant position are essential in accessing the trauma memory [19]. The Brainspot is actually a physiological subsystem in the body and nervous system that serves as an entry point where trauma, emotional stress, habits, repetitive patterns, sensory experiences hold emotional experience, sensory in memory form—accessing the Brainspot recruits the superior colliculi and brainstem to allow the activation to be processed to integrate the unassimilated events [20]. Of all treatment approaches, BSP is the most subcortical that anchors and recruits the brainstem component of trauma, allowing the client to access remotely stored traumatic memories without aggravation from more cortical processes impelled by the conventional treatments.

Grand [21] proposed the Dual Attunement Frame, highlighting the essence of the therapist's attuned presence with the client. It is unique to BSP since it attempted to use the biological and neural workings of the client's visual orienting reflexes to go beyond relational attunement neurologically [18]. The BSP therapist establishes neurological attunement to the client in a variety of ways, including marking the eye position where the client exhibits arousal and sustained reflexive response (Outside Window), determining the eye position through self-reported felt sensation (Inside Window), guiding the client to fix the eye position where they spontaneously gaze (Outside Window), and utilizing the bodily felt sensation as the springboard for processing (Body Resource). After that, the client is encouraged to gaze on a spot or pointer while becoming curious and observant of their emotional response and inner experience over time (focused mindfulness).

The dual attunement frame of BSP activates regulation by assisting clients in re-consolidating traumatic energy and memory and re-establishing homeostasis. This therapeutic processing is optimized using bilateral sound to promote relaxation, activate the left and right brain hemispheres, and aid emotional processing [22]. Healing begins deep inside the unconscious by instilling a sense of safety in the client and facilitating caring support [15]. The success of the treatment is deeply grounded in fostering safe and compassionate relationships with the client.

The first results indicated that BSP was an efficient therapy for individuals with trauma exposure and other anxiety-related disorders after only three sessions [23,24]. In addition, several systematic reviews conducted have proven the efficacy of BSP for treating posttraumatic syndromes associated with life-threatening events [25-28]. However, the conclusions of the preceding studies suggest that a well-controlled method is necessary for conducting studies on the efficacy of this PTSD treatment. Hence, it remains to be seen if this therapy will persist in establishing a solid evidence base.

### Research Objectives

This current study sought to examine the preliminary efficacy and clinical applicability of Brainspotting among Filipino women with severe PTSD symptoms. Specifically, it intended to determine the significant difference among participants' levels of PTSD symptoms across three-time points – pretreatment, posttreatment, and follow-up.

## METHODS

In this study, a one-group pretest-posttest with delayed posttest quasi-experimental design was employed to establish and determine causal change among different conditions. In the absence of an available comparison group, the study emphasized estimating the magnitude of

treatment effect from before treatment to termination and follow-up.

Participants were screened based on the following criteria: existing and unremitting PTSD diagnosis or a 'Severe or Markedly Elevated' overall baseline score in the CAPS-5 and PCL-5 past month version; confinement in the treatment facility for at least one month; at least 18 years old at baseline; able to comprehend basic English instructions; signed in for the study. The following exclusion criteria were used to limit participation in the study: active and severe substance abuse before participation; high and imminent risk of suicide at baseline; organic cognitive deficits; psychotic episode or breakdown at baseline; commitment to other manualized or structured psychotherapy at baseline; and other reasons to void participation such as migration to another place before or during the treatment, pregnancy, and diagnosis of severe physical illness and cardiovascular disease that could prevent adherence during treatment sessions. Self-referrals from beyond the study's target centers were not accepted due to the study's criterion and objective.

Participants were recruited at the DSWD Marillac Hills, a rehabilitation center for young women that cater to battered/abused, sexually exploited victims of armed conflicts or conflict with the law. This institution houses 255 children and adolescents.

**Table 1.** Profile and Trauma History of the Participants (n=13)

Demographic Profile	n	%	Trauma History	n	%
Age			Event (All are directly experienced)		
18-24 years old	11	84.6	Sexual Assault	7	53.8
25-31 years old	1	7.7	Sexual and Physical Assault	3	23.1
32-39 years old	1	7.7	Sexual Assault with a weapon and/or homicide	2	15.4
			Severe Suffering	1	7.7
Educational Attainment					
Secondary Level	5	38.5	Age Trauma Incurred		
Vocational Course	6	46.2	8 years old	2	15.4
Tertiary Level	1	7.7	9 years old	2	15.4
Alternative Learning System	1	7.7	10 years old	1	7.7
			12 years old	2	15.4

			13 years old	4	30.8
			16 years old	1	7.7
			19 years old	1	7.7

There were 14 women between the ages of 18 and 39 who qualified and expressed an interest in participating in the study; one withdrew after one BSP session. The demographic profile and trauma history of the individuals are shown in Table 1. As shown in Table 1, most participants (11 or 84.6%) are between 18 and 24 years old and have completed a vocational course (6 or 46.2%). It is also worth noting that most of them have directly suffered sexual assault (7 or 53.8%) and co-occurring physical assault (3 or 23.1%). They had all been through the traumatic occurrence at a young age; four of them were 13 years old (30.8%), and two had been through it as young as eight years old (15.4%).

## ASSESSMENT

*Posttraumatic Stress Disorder Checklist (PCL-5).* The PCL-5 is a self-report measure with 20 items that gauges the presence and severity of PTSD symptoms corresponding to the DSM-5 criteria for PTSD, namely stressor, intrusion symptom, avoidance, negative alteration in mood and cognition, and alteration in arousal and reactivity.

This instrument is useful in screening and quantifying PTSD symptom severity, aids in a provisional diagnosis of PTSD, and is sensitive to change over time. Good psychometric properties with Cronbach Alpha test coefficients of 0.95, 0.94, and 0.97 have been established in Filipino and other Asian samples [29-31]. Furthermore, this measure evinced good temporal stability ( $r=.88$ ) in a one-week interval and demonstrated a strong correlation ( $r>.75$ ) with other PTSD measures.<sup>32</sup> The PCL-5 was found efficient in diagnosing clinical samples with a history of vehicular accident and sexual assaults, and has a quite good correlation with the CAPS 5 scale as the criterion.<sup>33</sup> Overall, because the PCL-5 has a high reputation as a standardized instrument in PTSD assessment, PhenX PTSD strongly recommends this instrument for trauma assessments [34].

*Clinician-Administered PTSD Scale for DSM-5 (CAPS-5).* The Clinician-Administered PTSD

scale (CAPS) is the most widely used criterion measure of PTSD and has served as the primary diagnostic measure in more than 200 empirical studies on PTSD [35]. The CAPS-5 is a 30-item semi-structured interview used to assess PTSD symptom severity and diagnose cases of PTSD. As reviewed by Weathers, Keane, and Davidson,<sup>36</sup> CAPS-5 diagnoses demonstrated excellent reliability, yielding consistent scores across items ( $k=.88$ ), raters ( $k=.91$ ), and testing occasions ( $k=.83$ ). The PCL-5 and CAPS-5 demonstrated good convergent validity ( $r=.66$ ) and good value of discriminant validity with other measures outside the main trauma symptoms ( $r_s = .02$  to  $.54$ ). The properties mentioned above indicate that the CAPS-5 is a sound psychometric measure to assess and diagnose the severity of PTSD.

To explore Criterion A of PTSD, this study utilized the latest version of PCL-5 with Life Events Checklist 5 (LEC-5), which determines the prevalence of different potentially traumatic life events and to verify both the PTSD diagnosis and severity; and past week version of PCL-5 to monitor effects of the treatment during the experimentation phase. Using the guidelines of QUADAS-2,<sup>37</sup> the CAPS-5 and PCL-5 were administered within the same time reference by a trauma-informed clinician who had received online training from the instrument's developers.

## PROCEDURE

### *Pre-Experimentation Phase*

David Grand, the innovator of BSP, granted permission and authorization to administer the therapy for research purposes. The BSP community, comprising trainers and other BSP professionals, provided further help and oversight to the researcher. The four interventionists involved in this study are licensed and internationally certified BSP practitioners of BSP International Trainings Inc. Standard instructions were given to them, as well as a package containing all of the study materials – detailed in-

troduction and elaborated development of BSP; consent forms; behavioral feedback forms; issues and considerations in evaluating patients for therapy; ethical guidelines for the practice of therapy; supervising forms; standardized measures; and debriefing forms.

Residential patients were assessed using the PCL-5 with Life Events Checklist-5 to investigate Criterion A of PTSD, such as the trauma history, frequency, and degree of exposure. Individuals with scores of 'Severe' to 'Extreme' on PCL-5 (month version) and CAPS-5 (month version) were recruited to be part of the sample. Qualified participants were subjected to medical screening and vital sign monitoring to ensure and monitor the clients' current health state. The CAPS-5 (week version) and PCL-5 (week version) were used to collect data before the testing phase or treatment administration.

#### *Experimentation Phase*

BSP treatment comprises individual weekly sessions for three weeks as endorsed by the preliminary efficacy study [24]. The first session was dedicated to the orientation process comprising pretesting and the introduction of the intervention. Exploration of chief complaints and further processing of traumatic memories were the salient effort of the subsequent sessions. Other forms of pharmacotherapy and structured or systematic psychotherapy were prohibited during the study. There were no questions or prompts that significantly burdened the participants to disclose the intricate details of their experiences. The treatment's guiding philosophy is to be as little intrusive as feasible. When an adverse event transpires, the interventionists were oriented to document the session's observations, duration, and outcome, including the subsequent actions or measures.

#### *Post-Experimentation Phase*

After the last BSP session, a posttest evaluation was conducted using the same measures. Heeding clinical trial professionals and health researchers,<sup>38</sup> the delayed posttest assessment was conducted two weeks following the posttest

evaluation. Again, the researcher used all reasonable methods and processes in coordination with the authority to guarantee that the participants understood the value of their inputs and that the risk of damage was eliminated.

#### **Data Analysis**

The study's primary outcome is the PTSD symptom level measured by the different versions of CAPS-5 and PCL-5. The CAPS-5 and PCL-5 'previous week' versions were used to assess the primary outcome measure of PTSD symptoms at three study time points: pretest, posttest, and delayed posttest or follow-up. The main result was self-report posttraumatic stress symptoms, and this was analyzed using repeated-measures ANOVA with a Greenhouse-Geisser correction and post-hoc test with a Bonferroni correction.

#### **Ethical Considerations**

The De La Salle University Dasmariñas Ethics Review Committee examined and approved the current study to guarantee adherence to ethical principles. Significant focus was placed on informed consent to promote and defend ethical concepts such as autonomy, non-maleficence, and beneficence. The target institution and participants gave their permission to conduct the study. Before delivering the treatment, participants were given consent forms to ensure they had a comprehensive knowledge of the research, including the potential advantages and dangers. The issue of retaining therapeutic gains was given priority because the treatment variable is reducing PTSD symptoms. Therefore, the withdrawal or reversal of treatment was unwarranted, even for brief periods, because of the severity of the disorder. Thus, the researcher ensured that each participant received the clinical intervention, from baseline to treatment. In addition, a therapeutic debriefing or desensitizing was undertaken at any stage of the experimentation procedure to avoid any future psychological ramifications and appropriately address the hazards of participating in a study.

**RESULTS**

The result shows a difference in the levels of PTSD symptoms measured by PCL-5 and CAPS-5 in three-time points (see Table 2). The participants' total scores on the posttest and delayed posttest are lower when compared to the baseline scores. Fine-grained analysis through the use of repeated measures ANOVA with Greenhouse-Geisser corrections revealed that the differences are statistically significant [FPCL(1.289,15.469)=295.783,p-value=.000; FCAP(1.247,14.961) = 929.827, p-value=0.000],

with a large effect size ( $\eta^2=.961$ ; 987). Post hoc tests using the Bonferroni correction (see Table 3) revealed that the PCL-5 scores significantly decreased ( $66.00\pm 8.39$  vs.  $13.23\pm 9.63$ ; p-value=0.000) after the BSP sessions. A slight reduction can also be noted two weeks after the therapy ( $13.23\pm 9.63$  vs.  $6.69\pm 6.90$ , p-value=0.002). Similar results were found for the overall score of CAPS-5. The scores were reduced to a great extent after the sessions ( $67.00\pm 5.63$  vs.  $7.08\pm 5.48$ , p-value=0.000), and a minimal decline was measured during the delayed posttest ( $7.08\pm 5.48$  vs.  $3.69\pm 4.05$ , p-value=0.003).

**Table 2.** Means, Standard Deviations, and rANOVA results for PTSD Measures at three-time points (n=13)

Measures	Baseline		Post-test		Delayed Post-test		Within-subjects Effects		
	M	SD	M	SD	M	SD	SS	F	ES
PCL-5									
Intrusion	17.15	2.76	2.77	2.83	1.92	2.29	1904.974	213.591*	.947
Avoidance	7.08	1.12	2.00	.04	1.38	1.26	253.744	87.189*	.879
Alteration	23.31	3.75	4.85	3.76	2.15	2.70	3447.436	171.492*	.935
Hyperarousal	18.46	2.70	3.62	3.31	1.23	1.64	2266.308	166.139*	.933
Total	66.00	8.39	13.23	9.63	6.69	6.90	27493.897	295.783*	.961
CAPS-5									
Intrusion	16.85	2.58	1.46	1.66	0.92	1.50	2125.590	345.889*	.966
Avoidance	6.77	0.93	1.38	2.14	0.46	0.78	301.744	73.018*	.859
Alteration	22.92	2.43	2.46	2.60	1.08	1.32	3890.667	473.189*	.975
Hyperarousal	20.46	2.30	1.77	2.17	1.23	1.64	3117.897	566.011*	.979
Total	67.00	5.63	7.08	5.48	3.69	4.05	32977.077	929.827*	.987

\*significant at 0.01 level

Further analysis of the data shows that significant differences can be noted in all clusters of PCL-5 and CAPS 5 ( $F=87.189$  to  $566.011$ ; p-value<0.01), with large effect sizes ( $\eta^2=.859$  to  $.979$ ). Nevertheless, post hoc analysis using the Bonferroni correction indicated that the difference is significant on all clusters between the base-

line and posttest scores and the baseline and delayed posttest (Table 3). A significant decrease in scores between the posttest and delayed posttest can only be noted in Negative Alteration of mood/cognition ( $4.85\pm 3.76$  vs.  $2.15\pm 2.70$ ) and Hyperarousal ( $3.62\pm 3.31$  vs.  $1.23\pm 1.64$ ).

**Table 3.** Pairwise Comparison of PTSD Scores between the time points

Measures	Baseline vs. Post-Test		Baseline vs. Delayed Post-test		Post-test vs. Delayed Post-test	
	Mean Difference	p-value	Mean Difference	p-value	Mean Difference	p-value
PCL-5						
Intrusion	14.385**	0.000	15.231**	0.000	.846	.502

Avoidance	5.077**	0.000	5.692**	0.000	.615	.539
Alteration	18.462**	0.000	21.154**	0.000	2.692*	.026
Hyperarousal	14.846**	0.000	17.231**	0.000	2.385*	.028
Total	52.769**	0.000	59.308**	0.000	6.538**	.002
CAPS-5						
Intrusion	15.385**	0.000	15.923**	0.000	.538	.393
Avoidance	5.385**	0.000	6.308**	0.000	.923	.246
Alteration	20.462**	0.000	21.846**	0.000	1.385	.089
Hyperarousal	18.692**	0.000	19.231**	0.000	.538	1.000
Total	59.923**	0.000	63.308**	0.000	3.385**	.003

\*\*significant at 0.01 level; \*significant at 0.05 level

As a whole, the null hypothesis was not accepted. The findings of this study suggested that the three sessions of BSP applied to women have significant efficacy to address their posttraumatic stress symptoms. From severe PTSD diagnoses, all participants were assessed with an absent to mild PTSD after the session. This result corroborates the substantiated literature on the ability of BSP in the rapid discharge of trauma sequelae and the facilitation of homeostasis.

## DISCUSSION

The baseline characteristics of the participants were described by the overall markedly elevated scores from the standardized measures. Close examination of clinical data revealed that the participants scored the highest in negative alteration of mood and cognition and hyperarousal symptoms. Similarly, Hu and colleagues [10] observed that female victims are likely to exhibit self-blame and hold negative views about themselves and the world, which have been deemed strong predictors for PTSD symptoms [39]. Further studies found that women have a high inclination to experience chronic symptoms of re-experiencing, avoidance, and hyperarousal [11]. Before treatment, the participants have chronically endured disrupted autonomic regulation, which involves an extreme emotional response to intrusive memories and reminders of the trauma, alterations in arousal and reactivity, chronic sleep disturbance, and decreased appetite. These core PTSD manifestations were also described in Williamson and colleagues' study, [3] which addressed the poor health consequences of dis-

ruption of brain networks, notably the peripheral nervous system.

After three sessions of BSP, these PTSD cardinal symptoms were dramatically reduced. The large effects ( $\eta^2=.859$  to  $.979$ ) and overall improvement from mild to absent PTSD symptoms were achieved. The same findings were derived from the preliminary studies on BSP efficacy for treating individuals with trauma and anxiety-related disorders [24-26]. Moreover, the detailed analysis of the clinical data revealed that the subjects continued to recover two weeks after finishing the treatment. The participants' scores were reduced to a minimal decline, suggesting a positive short-term impact of the treatment. Some of the few rigorous studies that have been conducted also demonstrated similar findings indicating discharge of trauma sequelae manifested by amelioration of intrusion, low level of subjective units of distress, regulated sensorimotor reactions despite the reemergence of previously emotionally-evoking memory [28]. Also, Hildebrand et al. [26] compared the efficacy of BSP to other established brain-based therapy like EMDR among 76 adults seeking afflicted with trauma. The participants in both conditions reported a significant reduction in PTSD symptoms after three one-hour sessions of either EMDR or BSP. The results indicated that the former could be a practical alternative approach for clients with PTSD. Albeit only short-term effects of BSP were examined in this study, there was available evidence from prior studies that demonstrated the relative stability of PTSD over six months after the treatment.

The therapy strategy adopted by BSP in this study was heavily focused on resource orienta-

tion and instilling a sense of safety in the patients. The participants endorsed responses indicating a strong preference to the BSP methods, which they commonly described as motivational but non-invasive in approach. This method was consistent with Herman's fundamental idea of trauma-informed care [40]. Personal control, she argues, is another aspect of safety that can be achieved by allowing the client to make decisions without being forced by others. This idea was realized through BSP's philosophical approach, which entails following or tracking the client throughout the process without inquiry or expectation. It is based on the "no assumptions model" or phenomenology ("observe everything, assume nothing") and it is enhanced further by slower eye movements and gentler bilateral auditory stimulation, as demonstrated in clinical situations by Amano and Toichi [22] to improve comfortable feelings and resource development. These strategies, notably resource orientation and bilateral stimulation, were validated by the participants to be meaningful to their inner neurological and emotional experiences during therapy.

### Strengths

The current study has vital strengths as it meets four of seven gold standards for a treatment-outcome study, [41] including clearly defined symptoms; reliable, valid measures; trained assessors; manualized, replicable, specific treatment program; and treatment adherence. The absence of the controlled group was compensated by deriving baseline data using self-report measures and gold-standard structured interviews such as the CAPS-5 as suggested by Weathers et al., [35] which is also capable of improving differential diagnosis in line with the recent clinical advice. [42]. The assessment and detection of PTSD were even improved through guided interviews that deliberately explored the pretreatment condition of the participants to verify and support the symptomatology. Most importantly, the present study is the preliminary basis of the effectiveness of BSP for clients with severe PTSD in the country.

### LIMITATIONS

The major limitation of this paper is the absence of a control group and randomized assignment due to ethical issues that the true experiment entails in psychotherapy research. It can be argued that such experimental conditions can only add little value to the findings and is ethically questionable. Despite the significant results of this study, preliminary conclusions on the benefits of BSP can only be stated due to the relatively small sample size. Also, generalization to other genders, types of trauma, such as natural disasters, exposure to warfare, and the likes, can only be done limitedly due to the small number of cases under observation in this study. Since this is a preliminary study in the country which has to be evaluated only at clients with a considerable level of PTSD symptoms, all clients who did not manifest markedly elevated PTSD symptoms were not considered in the study. Blind or independent assessors did not carry out assessments due to the demands of the instruments and the lack of competent and trained professionals within the target center.

### CONCLUSION

The results of this preliminary study suggested BSP therapy applied to women has significant efficacy in decreasing PTSD symptoms. While the current study was unable to control for important confounding variables sufficiently, it can be said that including the baseline provides information about what the outcome would have been had the intervention not occurred. These women who incurred severe interpersonal trauma have been suffering markedly elevated PTSD symptoms at the baseline. They have never taken any psychotropic medication, and neither have they undergone any structured psychotherapy prior to the study. Following the three BSP sessions, all participants were evaluated for absent to mild PTSD symptoms. Notably, even after the intervention phases, the treatment resulted in sustained decreases in symptoms, demonstrating its efficacy in the discharge of trauma sequelae and facilitating homeostasis.

## Recommendations

This preliminary study on a neurophysiological-based approach to treating PTSD promised favorable results. Thus, it is convincing to consider structuring future programs that cater to a broad spectrum, a more significant number, and more diverse individuals. Additional controls for BSP treatment fidelity, such as independent evaluators, may be included in future research. Likewise, future studies should include follow-up data to obtain knowledge about the maintenance of treatment effects. Furthermore, to fully disclose the neurobiological bases of BSP, a research method that involves EEG and brain imaging could help frame the specific activations associated with the therapeutic actions typical of BSP protocol.

It is of utmost importance that future studies involving BSP shall employ BSP practitioners who have the same or better credentials in psychotrauma management to ensure the safety of the participants and the quality of the treatment. Noteworthy, while this is one among many non-traditional treatments that have been deemed efficient, the gap in the numbers of professionals and clinicians that are competent to provide such modalities should be bridged by capacitating them through training and further investigation into other similar approaches and investing resources for those that will prove efficacious.

### Disclosure

*No conflicts of interest declared concerning the publication of this article.*

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