



What Can Acupuncture Contribute to the Treatment of Post-Traumatic Stress Disorder?



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Abstract

We ask the question if acupuncture as a complementary method can contribute to the treatment of post-traumatic disorders (PTSD). We present a protocol for the regulation of specific symptoms of PTSD which we call Dynamic Ear acupuncture supported Trauma Regulation (DESTaR). It is based on a combination of earacupuncture and approaches of psychotherapeutic trauma confrontation. Our pilot study shows the successful course of regulations of seven treatment cases, that have been treated with DESTaR.

Keywords: Posttraumatic Stress Disorder; Complementary Therapies; Acupuncture; Auricular-Chronotherapy; Dynamic Ear acupuncture Supported Trauma Regulation (Destar)

Abbreviations: DESTaR: Dynamic Ear acupuncture Supported Trauma Regulation; PTSD: Posttraumatic Stress Disorder; CBT: Cognitive-behavioral Therapy; EMDR: Eye Movement Desensitization and Reprocessing

We describe the basic features of auriculotherapy from Paul Nogier's school and explain how we combine ear acupuncture with psychotherapeutic trauma therapy

Starting situation

What is the significance of acupuncture for the complementary treatment of posttraumatic stress disorder (PTSD)? We answer this question from the point of view of the valid guidelines and recapitulate the current state of research. We describe the basic features of auriculotherapy from the French school around Paul Nogier and explain how we combine ear acupuncture with psychotherapeutic trauma therapy and evaluate it. We call this concept Dynamic Ear acupuncture Supported Trauma Regulation (DESTaR). DESTaR uses a modified technique by Dr. Daniel Asis and Dr. Frederico Zarra Goicoechea Asis [1] which we examined with intervention strategies of the psychodynamic school Fischer [2], Bering [3]. At the heart of this thesis is a pilot study for the evaluation of DESTaR on a sample of six clients who were treated mono therapeutically in a training practice for acupuncture in Holsterbro (Denmark).

Post-Traumatic Stress Disorder: Diagnosis and Therapy

In the DSM-5, the usual classification of PTSD in the chapter

of anxiety disorders was abandoned and listed in favor of a newly introduced group of trauma and stressor-related disorders Falkai & Wittchen [4]. As a further change, the DSM-5 extended the former criterion A2, the so-called "stressor criterion", to a four-factor model (dysphoria) according to avoidance behavior/hyperarousal symptoms Bering [5,6]. For the treatment of PTSD, we comply with the guidelines of the International Society for Traumatic Stress Studies (ISTSS). In the "Prevention and Treatment Guideline In the Journal of Posttraumatic Stress Disorder (PTSD), Cognitive-behavioral Therapy (CBT), Prolonged Exposure (PE) and Eye Movement Desensitization and Reprocessing (EMDR) are considered the first-line method for treating PTSD ISTSS [7]. This recommendation is based on the evaluation of randomised controlled trials (RCT studies). In the German-language S3 guidelines of the AWMF for the treatment of PTSD, the above-mentioned treatment methods were also recognized and psychodynamic procedures were recognized as a further approach to the treatment of PTSD Flatten [8]. However, the level of evidence for psychodynamic methods is lower due to limited RCTs. What all treatment methods have in common is that the patient is confronted with his or her "trauma memory". "Working through" in a safe environment is considered the best way to treat PTSD. From the point of view of the psychodynamic

school, gestalt formation, symbolization and the work with, for example, .dem the “inner child” have equivalences to trauma-confrontational methods of the behavioral therapy school. At the very least, there is relative agreement that a phase-based model is recommended for the so-called complex post-traumatic stress disorder that is included in ICD-11. Stabilization, confrontation, and integration has been defined as the gold standard for treating PTSD. Experts disagree as to whether a defined stabilization phase is mandatory for all variants of post-traumatic stress disorders.

Acupuncture and trauma treatment

Trauma therapies are characterized by a relatively high drop-out rate or re-actualization rate under the confrontation. For these and other reasons, clients seek alternative treatment methods such as acupuncture, meditation, diets, or other schools of alternative medicine. In addition to personal attitudes, side effects and resistance to therapy of psychotherapeutic and psychopharmacological interventions also contribute to clients taking alternative medical paths. Clients seek help from alternative practitioners because of anxiety and non-specific pain because they no longer expect help from conventional medicine. In the psychotraumatological context, these are often neuromuscular or dissociative pain patterns Vander Kolk [9], Muth & Bering [10].

In addition to personal attitudes, side effects of psychotherapeutic interventions also contribute to clients taking alternative medical path

Guidelines and Complementary Therapy Methods

We asked ourselves what significance complementary treatment methods have in the guidelines for PTSD. For example, the ISTSS guidelines state that evidence for various complementary treatment methods has been condensed on efficacy. These include “Acupuncture, Neurofeedback, Sakeishikankyoto, Somatic Experiencing, Transcranial Magnetic Stimulation, and Yoga”. We focus on acupuncture. Acupuncture (from Latin acus = needle, and punctura/pungere = pricking; In contrast to TCM, the French school of ear acupuncture around Paul Nogier is not based on meridians, but on the somatotopic organization of the auricle as well as reflex points. If pathological points of the ear are stimulated by pressure, light, laser, electricity or a needle, a vascular autonomic signal (VAS) is triggered, which can be perceived by the practitioner as a beat of the pulse. Through VAS, we gain a biosignal that provides us with information about which organ systems are reacting. This also applies to the brain’s correlation points. In addition to complex acupuncture systems of TCM, easily reproducible protocols have been widely used for the treatment of mental disorders. These include, for example, the National Acupuncture Detoxification Association (NADA) or Battlefield Acupuncture, which are defined by up to five ear acupuncture points. The advantage of the protocols is their easy reproducibility; however, the techniques do not provide for

individualization of acupuncture. We focus on the study situation of the therapeutic success of acupuncture in the treatment of PTSD. For example, Grant[11] conclude in their meta-analysis that potential benefits of needle acupuncture for the treatment of patients with PTSD compared to control conditions Chinese pinyin is a method of traditional Chinese medicine (TCM) in which a therapeutic effect is to be achieved by pinpricks at specific points of the body. The pathology of TCM is based, among other things, on the so-called meridians, which cannot be assigned to any anatomical structure in the sense of our conventional medicine are given. This conclusion is based on seven RCT studies involving a total of 709 subjects. However, the authors limit their conclusions because the data basis is very heterogeneous (see below). The control conditions include “treatment as usual”, “sham acupuncture”, waiting list control group, CBT or psychopharmacotherapy (paroxetine).

The ISTSS has accepted two studies for its guidelines, which meet the RCT standards and have also been included in the meta-analysis by Grant [11]. For example, Hollifield [12] show a similar efficacy of TCM-oriented needle acupuncture as CBT for the treatment of PTSD. There was no difference whether the intervention was carried out as a complement or as an alternative to other treatments. Wang [13] show an exceptional effect of electroacupuncture compared to psychopharmacotherapy with paroxetine in patients who have developed PTSD after an earthquake.

If we take stock of the state of the literature, we conclude:

- a) The technique of acupuncture is not uniform in the courses (TCM versus ear acupuncture).
- b) The studies use needle, electro or laser acupuncture.
- c) The interpersonal interaction and relationship between acupuncturist and client is neither standardized nor evaluated as part of acupuncture.
- d) As a rule, the cited studies determine their efficacy on measurements of the pre-post-cat effect. Methodologically, we do not find an approach that deals with the specific symptom dynamics during acupuncture.
- e) The studies distinguish between acupuncture as a monotherapy or as an additive intervention to standard treatment.

For these reasons, DESTaR is characterized by the following features:

- i. We refer to Paul Nogier’s ear acupuncture and use the somato- pic organization of the ear as well as reference points.
- ii. To stimulate the acupuncture points, we do not use needle, electro or laser acupuncture, but light with different wavelengths (colors) for electronic
- iii. tromagnetic stimulation of the reference points. Daniel

Asis and colleagues call this technique auriculochromotherapy.

iv. We complement the protocol of Asis and use the VAS as a guide for pathological reflex points.

v. As an extension of auriculo-chromotherapy, we combine acupuncture with interventions from the psychotherapy sciences/trauma therapy.

vi. DESTaR includes an evaluation module that also examines the effects during acupuncture. In this way, we close the regulatory circle of diagnostics – intervention – evaluation, which allows the results to be reflected upon in order to initiate modifications.

In the next step, we will recapitulate the history of its origins both from the point of view of the French school around Dr. Paul Nogier and from the point of view of the psychodynamic school of trauma therapy, in order to make it clear how acupuncture and psychotherapy sciences are combined.

Auriculotherapy according to Paul Nogier

Dr. Paul Nogier (1908–1996) was a French general practitioner from Lyon who developed ear acupuncture with the main reflex points in the 1950s. The basic features of auriculotherapy are based on the fact that the ear has correspondence points to all parts of the body. This phenomenon is known from neuroanatomy and is referred to as somatotopy. Paul Nogier's work has been further developed to such an extent that the mapping of the ear in the form of an upside-down fetus has been recognized by the WHO (Figure 1) and also includes cerebral structures. Auriculo medicine has shown that pain relief occurs +when we treat correspondence points through acupuncture. In Figure 2, we illustrate the phenomenon as an example: the painful stimulation of the thumb creates a somatotopically organized painful reference point at the auricle. Conversely, acupuncture of the reference point has an analgesic effect. In particular, this phenomenon could be demonstrated in cervical, thoracal and lumbar radicular compression syndromes, because the vital body segments and corresponding dermatomes are particularly clearly represented in somatotopic order on the anthelix (Figure1).

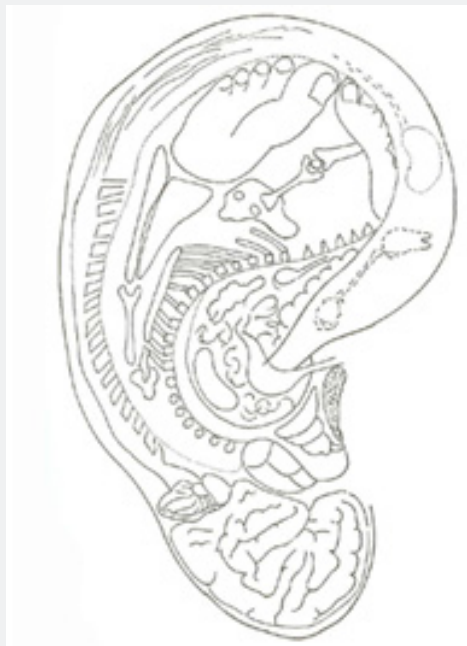


Figure 1: Somatotopic organization of reflex zones.

Electromagnetic stimulation (light) of the limbic zone of the ear

Now let's deal with the basic statement about the development and maintenance of the symptoms of PTSD. These include, in particular, specific symptoms that are caused by incorrect

storage of traumatic experiences and correlate with a specific activation pattern of the brain. The typical symptoms of intrusion, arousal, avoidance and, more recently, negative cognitions can thus also be understood as a specific variant of pathological memory performance. Neurobiologically, this faulty injection is attributed to the hippocampus, the corpus amygdaloideum, and

the prefrontal cortex Bering [3]. The question therefore arises as to whether auriculotherapy opens up ways to regulate the activity of the brain in its relevant limbic structures. Particular attention is paid to the triggering of the VAS reflex (see above). If the VAS is triggered, we infer a pathological reference point. This also applies to the cerebral structures. The work of Daniel Asis and colleagues has drawn attention to the fact that protocols from EMDR can be combined with the basics of auriculotherapy [14,15]. Instead of eye movement as cerebral stimulation, we stimulate the limbic zone of the ear through acupuncture. Otherwise, the protocol of Asis and colleagues has comparisons with the EMDR (SUD scale, negative/positive cognitions, body test, etc.). We base our assumption that we can stimulate limbic structures of the brain by acupuncture on imaging studies by e.g. Romoli [13], which were able to show that the stimulation of the limbic zone on the surface of the earlobe by needle acupuncture

results in a specific activation of the limbic system has. Asis and colleagues assume that electromagnetic stimulation of the limbic zone by visible light in the area of the earlobe results in cerebral stimulation that has a memory-consolidating effect. After this introduction to the principles of ear acupuncture, we present the three building blocks of DESTaR in an abbreviated form. These are:

- a) the psychodynamic case conception and the development of the therapeutic alliance (module 1),
- b) acupuncture-assisted trauma confrontation (module 2)
- c) as well as the evaluation (module 3).

For a detailed presentation, please refer to our DESTaR manual, which is currently in preparation (Bering & Vester, in preparation).



Figure 2: Pain stimulus of the thumb leads to the co-reaction of the reference point on the ear.

Baseline Intervention Line and Therapeutic Alliance

Regardless of the technique of confrontation used, therapist and client enter into a therapeutic alliance. This therapeutic alliance is also shaped by phenomena of transference. In this case, a positive transfer at the beginning of the treatment is of particular importance for the special concerns of trauma etherism, otherwise a transition to the confrontational part is impossible. Before the trauma confrontation begins, the case conception should be thought through and stability should be created (phase model step 1). This also applies to acupuncture-based trauma regulation. Fischer [2] has formulated principles for intervention guidelines in the therapy management of the patient-therapist dyad. In the initial exploration, preparatory measures are taken, which serve

in particular to stabilize the therapeutic alliance. In addition to the objective assessment of the facts, it is important to know the dynamic tension points that are responsible for the maintenance of the symptoms. relevant. In initial exploration, diagnoses, type of progression and control style are identified Bering [3]. In order to build the therapeutic alliance, the so-called trauma-compensatory scheme is identified and strengthened (What does the subjective healing theory look like? What ways are being sought and taken to avoid retraumatization? How is the trauma subjectively justified in its origin?), from which the basic line of intervention can be determined. For example, in the baseline of intervention, avoidance behavior is connoted as a special ability to prevent retraumatization (for more in-depth information, see Fischer & Bering [2,3]).

In the baseline of intervention, avoidance behavior is connoted as a special ability to prevent traumatization

After the basic line of intervention has been defined and successfully applied (positive transfer from client to therapist), the analysis of the trauma ash in the context of the trauma biography follows. In this case, it is advisable to first design an individual "trauma map" with the client, which makes it possible to make more serious traumas accessible to the therapist. For example, in the first round, it is recommended to regulate a mild or moderate trauma, which we call index trauma or index intrusion. This is followed by an analysis of the trauma scheme. In this context, the procedure of defining the point in time at which relative security has restored after traumatization (point in time C of the trauma scheme) has proven to be effective. Once this point has been defined, the last moment before security has been lost can be asked by the therapist and described by the client (point A). In this way, the trauma schema is defined by moments on a timeline

with the respective points in time A, B and C. The conception of the case can be divided into a Bering [3].

Acupuncture-based trauma confrontation

With these tools (knowledge of the diagnosis, type of progression, control style, index traumatization, trauma schema, trauma compensation scheme and basic line of intervention), we perform acupuncture-based trauma regulation analogous to CBT and EMDR (Table 1). This is phase two (working through). The pulse of the radial artery is palpated with the thumb to detect a VAS response during stimulation of the limbic zone. The point with the longest VAS reaction is stimulated around the region of the amygdaloid body when confronted with a green light point (Figure 3). The client is asked to imagine the index intrusion or an associated body sensation. The SUD scale is determined. Make sure that the client remains in his or her imagination in the stress traumatization or associated body sensation until the SUD scale drops. Changes in body sensations often occur. Different variants of client-therapist interaction open up:

Table 1: Confrontation protocol DESTaR, modified from Daniel Asis.

Palpate there. and the left ear.
First, focus on the ear that causes the most pain.
Take the pulse.
Stimulate the reflex point of the corpus amygdaloideum with green light, if necessary, bds.
Continuously treat the area with the longest VAS.
Ask the client to recall an image, meaning, and body sensation that represents the traumatic event.
Have the client rate on the SUD scale of 0-10.
Stay in body sensation/memory until the SUD scale drops.
Rate symptoms/body sensation on a scale of 1-10.
Continue the process until the Klient_in indicates a reduction in symptoms/body sensation.

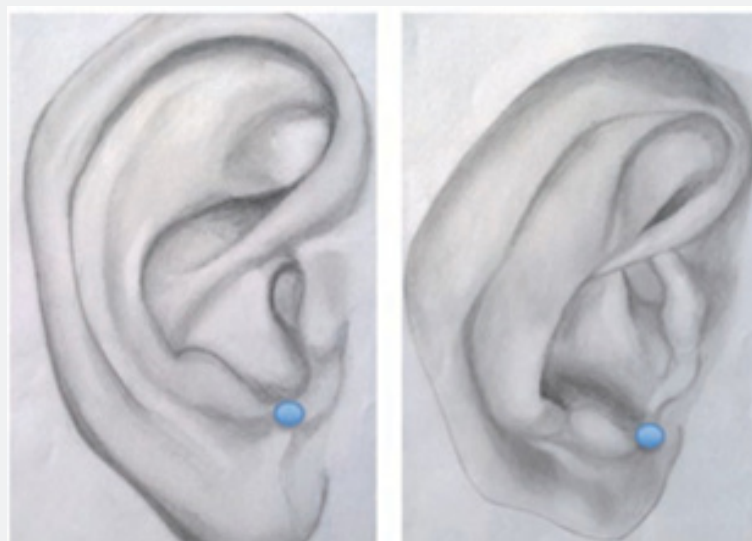


Figure 3: Reference point of the corpus amygdaloideum.

I. If a body sensation dominates, the client is asked to form associative bridges to memorable states of experience. He is asked to reverse the signals of rejection (pain, discomfort, etc.) and to associate the dissociative parts of the experience of pain. As a result, secession is reversed into integration.

II. If intrusive images, smells or tactile perceptions dominate, these intrusion equivalents are processed in the same way as EMDR (SUD scale, negative cognitions, positive cognitions, body test and coherence test).

Clients can also be guided through the confrontation by always seeking the balance between TS and TKS. Are the Clients are relatively stable under trauma confrontation, so we can integrate the exploratory knowledge gained about the trauma schema into our interventions. Thus, the query of the last point in time of security (A) and the recovery of relative safety (C) to confront the melting point of the trauma schema. B marks the period of time in which powerlessness, hopelessness and dissociation are most pronounced. We interpret that in this moment of trauma confrontation, the "trauma memory" is reorganized (see above). The confrontation is carried out until there is a change/improvement on the SUD scale and the symptoms are acceptable to the client. In this case, the described variants can be combined [16].

- a) Palpate and the left ear.
- b) First, focus on the ear that causes the most pain.
- c) Take the pulse.
- d) Stimulate the reflex point of the amygdaloid corpus with green light if necessary.
- e) Continuously treat the area with the longest VAS.
- f) Ask the client to recall an image, meaning, and body sensation that represents the traumatic event.
- g) Have the client rate on the SUD scale of 0-10.
- h) Stay in the body sensation /recollection until the SUD scale drops.
- i) Rate the symptoms / body sensation on a scale of 1-10.
- j) Continue the process until the Klient_in indicates a reduction in symptoms / body sensation.

Optionally, after Asis (personal communication), a parasympathetic activation can take place at the end of the passage by blue light on the cavum conchae. However, this can also trigger phenomena such as hypo potent crises or nausea due to stimulation of the gastrointestinal tract. It is advisable to spend time with the client after the confrontation has been completed to make sure that orientation and a sense of security have been regained. Integration (phase 3) is usually most effective when the personal experience of the confrontations can be discussed in detail with the therapist.

Evaluation

The DESTaR is not (yet) scientifically supported. For this reason, we have developed a battery of questionnaires that includes an orderly explanation of the procedure as a healing attempt. In this context, certain requirements for information apply, which are regulated according to the profession and the country. Every therapist bears personal responsibility here, as medicine itself is regulated differently by professional law in the EU countries. As a general rule, a written explanation must be provided, e.g. 24 hours between the confrontation and must be confirmed with a signature. We recommend, for example, to carry out the DESTaR motivation questionnaire at the same time as the explanation. In doing so, processes of reflection are initiated on the part of both the patient and the therapist as to why the path of this healing attempt is taken. By DESTaR experience we mean a questionnaire that deals with the specific "worlds of experience" under the confrontation. For example, the question arises as to whether

- i. whether the subjects had difficulty remembering the stressful experience,
- ii. whether details of the recollections became clearer under the treatment, and
- iii. whether there were moments during the treatment that were very relieving.

Approximately 2 to 3 days after the confrontation, the DESTaR effect can be applied. This is a query on the form in which changes have a short- to medium-term lasting effect. DESTaR's review consists of two sections. The 1st section of the questionnaire refers to light acupuncture itself and its effect, and Part 2 refers to the question of what part DESTaR is given in the success or failure of the therapy. In addition to this specific question about experiences under confrontation, the entire treatment cycle is considered in the sense of pre-post, e.g. by SCL-90-R in the general psychopathological sense or e.g. PCL-5, PTSS-10 or other scales are used to evaluate specific psycho traumatological symptoms and their development.

Pilot study

In order to examine the phenomenology and efficacy of the DESTaR protocol in a single case study, a total of six patients with confirmed PTSD were recruited. The clients were approached from a network of PTSD sufferers with the question of whether they would like to perform acupuncture-assisted trauma regulation. In this context, it was crucial that the client was familiar with the psychotherapeutic trauma treatment using standardised procedures and had already had treatment experience. Among the subjects were one man and five women between the ages of 30 and 50. Throughout, these are (sexualised) experiences of violence either in childhood and adolescence, in partnerships or as a circumscribed event in adulthood.

Motivation of the clients

In order to better understand the motivation of the participating clients, we conducted DESTaR motivation (Table 2). The percentage of frequency distribution shown shows that about

half of the statements as to why the consent to “light acupuncture” was given are confirmed. In this context, recommendations are based on positive feedback or generally positive experiences with alternative medicine.

Table 2: Excerpt from questionnaire DESTaR motivation with relative agreement in percent.

Fragen DESTaR-Motivation	Approval in % (n=6)
Skepticism about light acupuncture	45
Assistance in overcoming psychotrauma	40
Consent to light acupuncture as an alternative to other methods due to neg. Experience	32
Consent to light acupuncture to avoid medication	42
Consent to light acupuncture on the basis of pos. Feedback from others	62
Consent to light acupuncture on the basis of pos. Experience with alternative treatment approaches	77

Experiences under the acupuncture-supported trauma confrontation

A total of four confrontations were carried out with an interval of two weeks according to the protocol described. In this case, the tasks were divided between two theatres. Prior to the confrontation, the subject was examined by a psychiatric nurse with regard to the trauma history. At the time of the examination, we had so-called pain drawings made and recorded the PCL-5 to orient the symptom severity of trauma-specific symptoms. The acupuncture-assisted trauma analysis itself was performed

by an experienced acupuncturist. In order to give us an insight into how the symptom intensification, the symptom change and symptom relief occurred, DESTaR treatment was carried out after acupuncture. As a standardized interview (Table 3). Clients were asked to give an assessment of their own agreement from 0 to 100%. The results of a total of four rounds were averaged and added to Table 3 as a percentage. It turns out that almost all clients felt a significant relieving moment during the confrontation and in 63% this relief occurred abruptly. The quality of improvement refers to physical complaints, fears or characteristics of the intrusion.

Table 3: Excerpt from DESTaR Experience Questionnaire with Relative Approval in Percent.

Fragen DESTaR-Motivation	Consent (DK) in % (0-100%)
	(n=5)
Difficulty remembering the stressful experience	6
Remembering previously unremembered details of the traumatic experience	29
Relieving moment during therapy	92
Weakening of the pictorial impression of memory	43
Improvement of anxiety	65
Improvement of physical ailments	78
Improvement of negative thoughts under treatment	72
Sudden improvement under treatment	67
Development of physical discomfort that was not expected	66
Physical discomfort has helped remember details	19

Results: Pre-Cat Effects

Approximately two weeks after the last confrontation, the PCL-5 was performed again to provide a comparison with the psychometric readings (Figure 4). It becomes clear that all evaluated subjects benefited substantially from trauma regulation.

The improvement is so pronounced that the over threshold pre-value of over 31 points was undercut after the regulation. On average, the load dropped from 54 to 17 points in the PCL-5. The data shows that out of five out of six clients fall below the critical limit of 31 of the PCL-5.

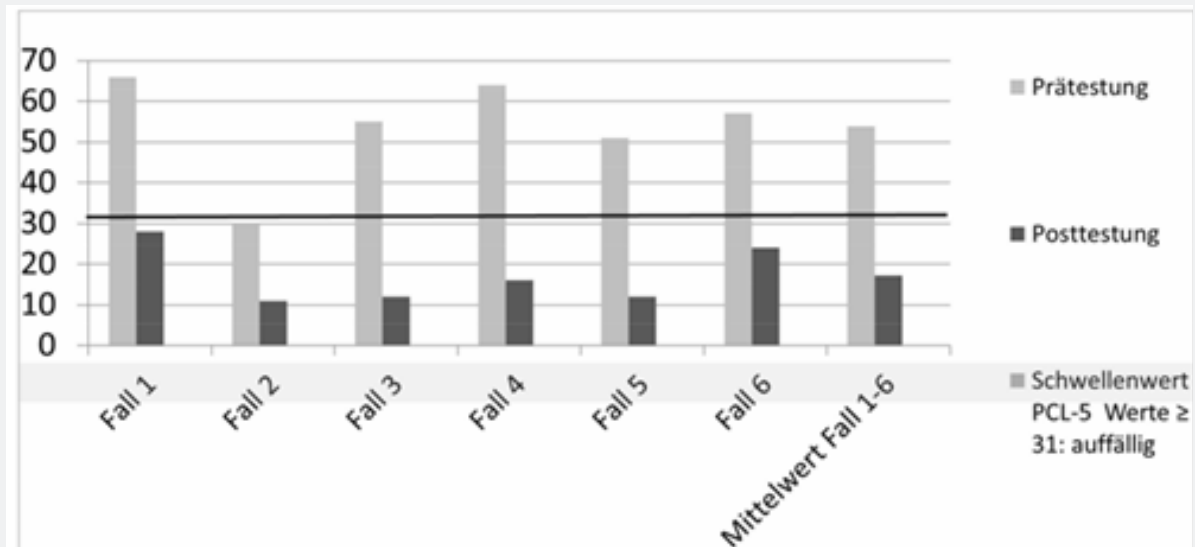


Figure 4: Expression of PCL-5 pre-cat after three regulation sessions.

Discussion

Dynamic Earacupuncture supported Trauma Regulation (DESTaR) gets its name because we combine the basics of ear acupuncture with the basics of psychotherapy. The relationship is dynamic. Our pilot study shows the successful regulation of seven clients with PTSD through our approach. The pilot study itself was carried out as a “stand alone” in a training practice for acupuncture. The effects of therapy are comparable to established methods of EMDR or CBT. We conclude that DESTaR is a promising approach to regulating specific symptoms of PTSD. The following restrictions must be made:

- a) Due to the quality of the study, this is still an expert opinion at the present time, which is only supported by individual studies.
- b) We don't know whether auriculo-chromotherapy, the interaction between therapist and client, or the fact of confrontation itself, can be the biggest factor in determining the regulatory effect.
- c) For auricular chromotherapy, it is not sufficiently certain that limbic structures are stimulated to the same extent as in needle acupuncture.
- d) The evidence-based nature of VAS is controversial.

For these reasons, we understand technology as the regulation of specific symptoms of PTSD. We associate the term “treatment” with a comprehensive therapy concept that, in addition to the treatment of symptoms, includes the analysis of the client's

problem situation in a bio-psychosocial model. DESTaR is not yet able to meet this requirement. Why do we believe that DESTaR has a high potential for development?

- i. From the point of view of acupuncture, DESTaR systematizes the client-therapist relationship.
- ii. From the point of view of the psychodynamic school, DESTaR offers new ways of carrying out trauma confrontation.
- iii. In contrast to EMDR, we assume that auricular chromotherapy is a specific stimulation of defined brain regions.
- iv. Auricular chromotherapy makes it possible to include individual pathological reference points or to react individually and specifically to body sensations under confrontation. While we attach great potential to my reflex therapy for regulating neuromuscular pain, DESTaR focuses on dissociative pain patterns.

Conclusion

We conclude that the results are encouraging. Extended studies are required to be able to answer with certainty whether the results of the pilot study can withstand verification with meaningful sample size and with controlled study design. We see great potential in the implementation of mixed-method studies, as “worlds of experience” under trauma confrontation can best be captured with qualitative approaches and should be combined with a quantitative methodology.

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