

ALTERED STATES OF CONSCIOUSNESS

1. Psychoneurophysiology of Personalized Regressive and Experiential Imaginary Therapy. 2. Therapeutic Value of this Therapy in Two Sessions

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Abstract

Altered states of consciousness (ASC) have been more and more used in psychotherapy over the last few years. Although their phenomenology has already been studied, little is known about their neurophysiology or what is known is not enough to characterize them. On the other hand their therapeutic value has not been object of thorough evaluation.

In order to study both aspects a standardized technique is used, based in the theoretical principles of ASC. This is based on an induced ASC similar to an hypnoid state, in which the patient is deeply relaxed but conscious, keeping an interactive contact with the therapist and verbalizing what he is experiencing.

Under deep relaxation he is told to experience an actual or imagined scene of his past connected with his problem. He merges in a self-induced "virtual reality" in which the experienced scene is cathartic. Later, the obtained insight under the ASC is transformed by the patient in a cognitive behavior pattern change.

Neurophysiology and hemodynamics of the phases of this therapy are studied using a polygraph that registers EEG, EMG, plethysmography and skin conductance comparing them to a base line.

Twelve patients suffering of chronic resistant headaches were submitted to both this technique and placebo sessions. Therapeutic value is measured by medication intake, headache frequency and intensity at a 15 days interval until 6 months after the two treatment sessions.

Results - the **technique** is characterized by an increasing theta activity in both hemispheres leading to a decreasing alpha. There are no significative changes between placebo and treatment sessions regarding EMG and skin conductance. In both settings there is a hemisphere synchronization.

Technique results show a cure of one third of the subjects and a substantial reduction of analgesics consumption and increased quality of life of other third. The remaining population had no benefits.

Introduction

Various definitions of ASC exist but for the purpose of this poster it shall be considered as a mental state, according to Ludwig (1966) and Kokoszka (1987) - *deviation in subjective experience or psychological functioning from certain general norms for that individual, recognized by the subject or observers.*

Distinct ASC (hypnosis, yoga, transcendental meditation) reveal different EEG patterns changing as the state progresses which shows how complex their characterization can be. A relatively stable state is the twilight state as described by Budzinsky (1986), with increasing theta activity and slow eye movements. The author suggests that this state facilitates learning and healing processes.

Healing mechanisms of some ethnies use ASC that have in common certain characteristics with occidental psychotherapeutic procedures. There is a traditional induction of ASC that privilege pharmacological means, mainly based in hallucinogenic plants (Rios, 1989) and rhythmic stimulus, like dance and drums (Jilek, 1989) while in western context psychological means are preferred, mainly sensory overload or deprivation, with or without visualizations. It is not considered to exist a dichotomy in the induction process because, according to actual perspective on the mind-body problem, there is an interdependence, where psychological processes determine biochemical modifications and contrariwise.

For testing the therapeutic value of a psychological induced ASC, its neurophysiological characterization and experiential content twelve patients suffering from treatment resistant chronic headaches were submitted to the therapy.

Methodology

a) Population

Twelve patients of both sexes (two men, ten women) were selected from a specialized consultation on headaches, after a comprehensive neurological and psychiatric study, where an organic cause for the complaint was not found (for example, post traumatic headache), with the diagnostic "psychogenic pain disorder (DSM-IV). An inclusion criterion was that they had suffered for more than five years and medication did not led to daily relief.

b) Research Instruments

1. Registration of therapy currently used and frequency of headache
2. Auto evaluation of pain intensity with a visual analogic scale
3. Auto evaluation of:
 - a) "psychosomatic status" with SCL-90-R (Derogatis, 1977)
 - b) screening of ASC during sessions with APZ (Dittrich, 1975)
 - c) screening of predisposition for dissociative experiences with QED (Ryley, 1988)
4. Neurophysiologic resgistration of "base line" and during ASC:
 - a) six channels of EEG (two full range, two alpha occipital and two theta frontal)
 - b) skin conductance
 - c) superficial muscle activity
 - d) plethysmography
5. Videographic recording of each session

c) Procedure

Patients were submitted to four therapeutical sessions under an induced ASC. Two sessions were highly interactive between patient and therapist and the other two were passive for the patient, listening to suggestive healing imagery (Achterberg, 1985) previously written and equal for all patients.

Induction of ASC is accomplished with "new-age" music (Mike Rowland, And So To Dream) and words suggesting relaxation, always in the same manner.

The induced ASC and the experienced under it, in the *interactive sessions*, can be named, after Peres (1992) as *Personalized Experiential Restructuralization Therapy* (PERT). This descriptive title is intended to summarize and integrate what in some circles is known as *Past-Life and Regression Therapy*, recent discoveries on imagery (Achterberg, 1985), hipnoidal states (Ross, 1994) and clinical applications of non-drug-induced states (Budzynsky, 1986).

According to Peres (1992), each session, phenomenologically characterized as "*a dream-like time travel*", takes nearly two hours and goes through some points which core is the experience of the *subjectively identified trauma* and, afterwards, a cognitive restructuring is done by the patient, helped by the therapist. Like in hypnosis a "hidden observer" (Hilgard, 1986) controls emotions and the patient experiences only what he is able to support. In this procedure the patient is his own therapist and this one works as a helper of the therapeutic process. Afterwards a positive suggestion for the future, concerning the problem, is made and the patient is brought slowly to the awake state.

In the passive sessions (considered as placebo) a dream-like healing imagery (healing light, book with therapeutical instructions) is suggested while testing the patient capacity for the creative imagery.

Each session took place every fifteen days, in a AA BB design. Between sessions patients were instructed to rate daily the intensity of headaches and medication. Six months after the last session they were clinically evaluated by the neurologist who referred them for the treatment.

Results

1. Neurophysiology ("base line" versus technique):

a) EEG - significative decrease of the alpha/ theta ratio in the placebo sessions compared to the therapeutic sessions without significative differences in the left/ right hemisphere relation. In the therapeutic sessions a significative decrease of alpha amplitude was also observed. Comparing alpha/ beta ratio between both type of sessions no significative differences were found

b) skin conductance - no significative differences found

c) superficial muscle activity (EMG) - no significative differences found

d) plethysmography - no significative differences concerning pulse frequency; significative increase of pulse amplitude during therapeutic sessions

e) Placebo and therapeutic sessions are clearly separated from a neurophysiological point of view and both differentiate from sleep and dream

f) Though clusters of patients were not found in either session, patients neurophysiologically resemble each other in the therapeutic sessions

2. Experienced content

a) age of spontaneously evoked experiences was mainly between childhood and adolescence

b) six types of time references were made: symbolic, intra-uterine, birth, "past-lives", "future" and "contact with presence"

c) most traumatic experiences happened mainly in the domain of interpersonal relationships (conflicts) and direct reference to head traumas (wars, accidents, etc) were very rare

d) experienced feelings were in the majority negative, of the type of fear, loss, sadness, solitude. Positive feelings were seldom evoked

e) "decisions" made in the most traumatic moments were almost equivalent to a self-fulfilling prophecy (including words like "never" and "always")

f) statements changing that "decision" were very personal and expressed daily coping strategies

3. Therapeutic results

Evaluated six months after the end of the treatment a third of the patients had completely stopped using daily analgesics as they did before. Other third significantly reduce headache frequency and intensity. The remaining showed no differences to the former state.

Discussion

Some changes in the studied peripheric electrophysiological measurements were expected as it is known from relaxation techniques and hypnoidal states. Interesting is to underline that the therapeutic ASC points to a dream-like situation in the range of a predominance of theta waves similar to the "twilight-state" described by Budzynsky (1986) and differentiates from other ASC like hypnosis, transcendental meditation, yoga and trance states such as "channeling" (Hughes and Melville, 1990).

EMG and skin conductance don't reveal significative differences between placebo and therapeutic sessions, following a pattern of dissociation between experienced emotions and their correlates as observed in hypnosis (Walter, 1992). However optic pulse amplitude correlates with expressed emotion under this state.

Patients and doctors rarely attribute a meaning to the persistence of chronic pain. This therapy permits the patient to elaborate a real or imagined meaning in any way related to the problem. As these subjective meanings can be multiple, surely they are not exhaustively examined in two sessions.

Even so it was found that most of the evoked experiences happened between childhood and adolescence as Budzynsky (1986) has already pointed. Interpersonal experiences were the source of traumatic experiences and unexpectedly, direct reference to head traumas (wars, accidents, etc) were very rare. This points to a kind of early elaborated fulfilling prophecy.

Imagination is a capacity that allows elaboration of concepts or precognitions other way impossible to put in practice. This imaginative potential is used for healing purposes (Achterberg, 1985) combined with an ASC. It is more neutral to call the therapy *Personalized Experiential Restructuralization Therapy* also because some patients experienced psychological contents belonging to the domain of legend, myth or the fantasy.

Considering that patients were suffering from severe (and sometimes incapacitating) headaches for a few years and were therapy resistant, results are very promising. Most probably one needs to submit patients to more than two therapeutic sessions for better results. Patients expressed that this therapy gave them new hope for a cure and the chance to be active as healers themselves. This can suggest why in some cases placebo sessions had positive results. Indeed some studies demonstrate that placebo effect is not a mere suggestion (Brown, 1998).

Conclusions

There was a significative decrease of the alpha/ theta ratio in the placebo sessions compared to the therapeutic sessions without significative differences in the left/ right hemisphere relation.

Placebo and therapeutic sessions are clearly separated from a neurophysiological point of view and both differentiate from sleep and dream

The age of spontaneously evoked experiences was mainly between childhood and adolescence

The most traumatic experiences happened mainly in the domain of interpersonal relationships (conflicts) and direct reference to head traumas (wars, accidents, etc) were very rare

A third of the patients completely stopped using daily analgesics as they did before. Other third significantly reduce headache frequency and intensity. The remaining showed no differences to the former state.

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