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Article *in* International Journal of Clinical and Experimental Hypnosis · August 1989

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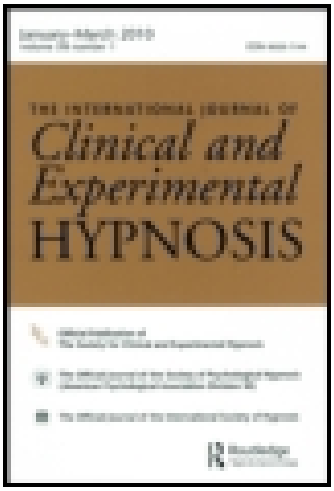

International Journal of Clinical and Experimental Hypnosis
Publication details, including instructions for authors and subscription information:
http://www.tandfonline.com/loi/nhyp20

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Arreed F. Barabasz [a] & Marianne Barabasz [a]
[a] Washington State University , Pullman
Published online: 31 Jan 2008.

To cite this article: Arreed F. Barabasz & Marianne Barabasz (1989) Effects of Restricted Environmental Stimulation: Enhancement of Hypnotizability for Experimental and Chronic Pain Control, International Journal of Clinical and Experimental Hypnosis, 37:3, 217-231, DOI: 10.1080/00207148908414474

To link to this article: http://dx.doi.org/10.1080/00207148908414474

The International Journal of Clinical and Experimental Hypnosis
1989, Vol. XXXVII, No. 3, 217-231

EFFECTS OF RESTRICTED ENVIRONMENTAL STIMULATION: ENHANCEMENT OF HYPNOTIZABILITY FOR EXPERIMENTAL AND CHRONIC PAIN CONTROL

ARREED F. BARABASZ AND MARIANNE BARABASZ[1]

Washington State University, Pullman

Abstract: Enhancement of hypnotizability and pain tolerance has been demonstrated using restricted environmental stimulation therapy (REST) with university students as Ss (A. F. Barabasz, 1982). The purpose of the present study was to determine whether or not similar results could be obtained with chronic pain patients. Ss consisted of outpatients in treatment for conditions in which pain is prominent who also demonstrated low hypnotizability after repeated hypnosis plateau sessions. 2 groups of Ss were exposed to REST. Situational demand characteristics (Orne, 1962) favored an increase in hypnotizability for REST Group 1 (high demand). REST Group 2 (low demand) was exposed to situational demand characteristics designed to disguise the experimental hypothesis. 2 groups of control Ss were exposed to the same alternative demand characteristic manipulations as the experimental groups, but environmental stimulation was maintained. The Stanford Hypnotic Susceptibility Scale, Form C (SHSS:C) of Weitzenhoffer and E. R. Hilgard (1962), including a posthypnotic suggestion for an anesthetic reaction, and an ischemic pain test were administered prior to treatment and again immediately following treatment. After 6 hours of REST, significant increases in SHSS:C scores were found for high-demand and low-demand experimental Ss, as well as for high-demand control Ss. No such increase was found for low-demand controls. Significant decreases in pain scores were found for both high- and low-demand experimental groups. No significant pain score decreases were found for either control group, suggesting a relatively weak effect of demand characteristics. An independent postexperimental inquiry suggested all Ss believed they received active treatments. The inquiry, conducted 10-15 days after the experiment, also revealed a majority of experimental Ss were using hypnosis on a daily basis to reduce pain with a substantial decrease in pain medication. Only 2 control Ss (highest in hypnotizability) reported similar success. Anecdotal reports of pain reduction experiences using hypnosis after REST intervention were supportive of E. R. Hilgard's (1977) neodissociation theory.

While hypnotizability generally shows remarkable stability (Ås, E. R. Hilgard, & Weitzenhoffer, 1963; Cooper, Banford, Schubot, & Tart, 1967;

Manuscript submitted June 4, 1986; final revision received September 22, 1987.

[1]Reprint requests should be addressed to Arreed F. Barabasz, Ed.D., Ph.D., Department of Counseling Psychology, Washington State University, Pullman, WA 99164-2131.

Leva, 1974; Levitt, Brady, Ottinger, & Hinesley, 1962; Perry, 1977; Shor & Cobb, 1968), several investigators have attempted to demonstrate its modifiability (Baykushev, 1969, Diamond, 1972; Kinney & Sachs, 1974; Pena, 1963; Sachs & Anderson, 1967; Sanders & Reyher, 1969; Springer, Sachs, & Morrow, 1977; Wickramasekera, 1969, 1970). These early modification studies were not accepted as refuting the stability of hypnotizability because many experimental control issues were not considered. These included generalization data beyond that of hypnosis test scores, follow-up testing, and plateau hypnotizability (Shor, Orne, & O'Connell, 1966); motivational instructions, expectancy (Barber & Calverley, 1964; Gregory & Diamond, 1973; E. R. Hilgard, 1965); and experimental demand characteristics (Orne, 1959, 1962; Orne & Scheibe, 1964).

Recent research (A. F. Barabasz, 1982) addressed these concerns. Increases in Stanford Hypnotic Clinical Scale (Morgan & J. R. Hilgard, 1975) scores and pain tolerance criterion measures were dramatic after 6 hours in a restricted environmental stimulation chamber and at a 2-week follow-up. The study employed Orne's (1959) postexperimental inquiry technique in an effort to determine the influence of demand characteristics. The results of the inquiry showed that experimental *Ss* had been successfully diverted from the hypnotic focus of the investigation by the elaborate psychophysiological measures employed.

Despite the newly applied controls and potentially important findings, the clinical utility of the restricted environmental stimulation technique (REST) in this context remained to be established. In particular, the study (A. F. Barabasz, 1982) used only university student volunteers in good health who cannot be considered equivalent to actual chronic pain patients. The potential usefulness of REST in the enhancement of hypnotizability for chronic pain patients has not been demonstrated. Furthermore, the previous study employed demand characteristics for the control group which were largely instructional in nature. The need remained to assess demand characteristics employing situational conditions more closely related to those provided to experimental *Ss*.

The purpose of the present study was to determine whether or not hypnotizability could be meaningfully enhanced by REST when chronic pain patients were employed as *Ss*.

Method

Subjects

The *Ss* consisted of patients in regular outpatient treatment for conditions in which pain is prominent ($N = 20$, ages 23-57 years, $\bar{X} = 41.3$ years, 7 males, 13 females). Diagnoses included arthrochondritis, arthritis, cancer, multiple sclerosis, and back pain related to various back injuries. The patients had been in treatment for their disorders for 7 months to 8 years ($\bar{X} = 2$ years, 4 months). No patient was in treatment for

depression. The patients were referred to the present study through clinics involved in their treatment.

The patients who were interested in the investigation of "Hypnosis and Pain Control" met with the first author for a preliminary orientation session lasting from about 40 minutes to 1 hour. The session included a discussion of issues concerning the nature, limitations, and clinical effectiveness of hypnosis. Details of the orientation procedure are reported elsewhere (see A. F. Barabasz, Baer, Sheehan, & M. Barabasz, 1986). The potential promise of REST as a method of hypnosis enhancement for pain control was noted. Discussion of limitations of the previous study cited the use of students as *Ss* who were not experiencing chronic pain. The obvious importance of testing REST with actual patients whose lives had been affected by their medical treatment regimes and daily pain experiences was emphasized. The need to use experimentally induced pain (ischemic), because of the precision of the measurement and on-demand availability during the experiment, was explained. The ischemic pain procedure was described in detail and was demonstrated at the request of two patients. Questions about hypnosis, REST, and ischemic pain were answered. All patients understood that various forms of chamber REST would be employed as part of the research. All patients were shown the REST chamber which was devoid of all experimental props.

The Stanford Hypnotic Clinical Scale (SHCS) of Morgan and J. R. Hilgard (1975) was administered to 27 clinic patients wishing to participate as *Ss* in the present study. Patients scoring 3 or lower on this 5-point scale were admitted as *Ss* to the study. These 20 *Ss* were randomly divided into two control and two experimental groups.

Procedure

The importance of establishing *Ss'* plateau hypnotizability by repeated inductions before attempting enhancement of hypnotizability has been established (Shor et al., 1966). All *Ss* were, therefore, exposed to 10-12 hypnosis sessions (A. F. Barabasz & Lonsdale, 1983) before administration of the Stanford Hypnotic Susceptibility Scale, Form C (SHSS:C) of Weitzenhoffer and E. R. Hilgard (1962) as a pretreatment measure.

After administration of SHSS:C, *Ss* were rehypnotized using the progressive relaxation instructions from SHCS. This phase was followed by eyeball set instructions (eyes rolled up while remaining closed) and an eyes closed catalepsy test to promote hypnotic depth. The *Ss* were then asked to assign a number on an open scale (E. R. Hilgard, 1979) as to their depth of hypnosis. The *Ss* were asked to double this level, if possible, and to indicate when they had reached this greater depth by raising a finger on their non-dominant hand. They were then given posthypnotic suggestions for anesthesia of the non-dominant arm.

Ischemic pain was induced using the submaximum effort tourniquet technique as employed at the Stanford Laboratory of Hypnosis Research

(E. R. Hilgard, 1979). The procedure approximates the postoperative pain of surgical patients and responds as clinical pains do to chemical analgesics. The S's arm was first deprived of blood by raising it and wrapping it to the elbow in an elastic bandage. Then a standard sphygmomanometer cuff was inflated to 250mm/Hg, and the bandage was removed. The Ss then squeezed a hand dynamometer (Lafayette 76619) to a load of 10Kg for 20 squeezes. They then waited while the pain slowly mounted to the point of becoming unbearable (E. R. Hilgard & J. R. Hilgard, 1975). Pain reports were taken at 2-minute intervals, on a numerical scale beginning with no pain at 0 and increasing to 10 as a critical or anchoring value at which S would very much like to have the cuff deflated (Knox, Morgan, & E. R. Hilgard, 1974). The Ss were asked to continue beyond this point so that further pain reports could be obtained; all Ss complied with this request. E. R. Hilgard (1979) reported that ischemic pain evaluated in this manner for a given S is quite consistent from one day to the next.

The SHSS:C and ischemic pain pretest data were collected not less than 2 days or more than 9 days before the exposure to experimental/control procedures. The tests were repeated immediately after experimental/control procedures.

The REST chamber (2.3 m long × 1.3 m wide × 2.4 m high) was sound attenuated. It was equipped with an intercommunication system, adjustable intensity incandescent lighting, silent positive-pressure ventilation, and a S-accessible push-button switch which activated a buzzer in the adjacent lab.

The chamber was equipped with a recliner chair for experimental Ss. The 2 inches of Dow-Corning sound proofing on walls, ceiling, and double door provided an environment nearly free from all outside noises. Illumination, attenuated by Ganzfeld goggles for experimental Ss, was set at the approximate equivalent of two 25-watt incandescent light bulbs. Control Ss were provided with a non-reclining chair, AM-FM radio, magazines, and a microcomputer with games software loaded. The sound attenuation characteristics of the chamber were eliminated for the control Ss by reintroducing normal room background noise via an open intercom hidden in a ceiling vent. The sound attentuating material was removed from the door for control S sessions. Normal levels of illumination suitable for reading were maintained during the control sessions.

Since the earlier study (A. F. Barabasz, 1982) was limited to only an instructional demand characteristics manipulation, the possibility existed that alternative results might have been obtained if the entire Orne and Scheibe (1964) package had been employed. Orne and Scheibe (1964) obtained significant effects on 3 of 14 measures by cuing control Ss as to their role while loading situational and instructional demands upon the experimental Ss.

Both groups were exposed to an identical pseudo-REST environment in A. F. Barabasz (1982). The present study attempted to address this

research control concern by varying both situational and instructional demand characteristics. Control Group 1 (high demand, $N = 5$) was cued to the hypnotic focus of the study and given instructions favoring an increase in hypnotizability. Instructions for Control Group 2 (low-demand/disguised hypothesis, $N = 5$) emphasized the "important psychophysiological measures." Experimental Groups 1 (high demand, $N = 5$) and 2 (low-demand/disguised hypothesis, $N = 5$) were given demand instructions similar to the control groups. Instructions for high-demand groups included statements such as:

> Please tell me whatever you can about your reactions to the session. Your experiences will be helpful in understanding the *hypnosis* results of this study. . . . Push the red button to obtain release from the situation. . . . *At the end of the period we will see how deeply you can be hypnotized.*

Instructions for low-demand groups included statements such as: "Please tell me whatever you can about your reaction to the session. Your experiences will be helpful in understanding the *psychophysiological* results of the study."

Situational stimuli for each group were designed to further reflect the alternative instructional demand characteristics. In both high-demand control and experimental groups, *Es* wore lab coats and maintained an aura of great seriousness. A medical tray was in view and a push button to obtain release from the situation was available to *Ss* (Orne & Scheibe, 1964). Low-demand/disguised-hypothesis control and experimental groups, of *Ss* were exposed to situational stimuli designed to minimize experimental demand characteristics. Consistent with current REST methodology (Suedfeld, 1980), *Ss* were given a full orientation to the chamber, coupled with detailed reassuring instructions administered by calm and supportive personnel prior to the day each subject was scheduled for REST (p. 371). The *Es* were dressed in regular clothing. There was no medical tray visible or release button available to these *Ss*.

Following these introductions, all *Ss* spent 6 hours (Barabasz, 1982) in the REST chamber. Beckman bio-potential electrodes were attached by double sided adhesive washers to the proximal phalanges of each *S*'s nondominant hand. The wires for these electrodes led from the chamber to a polygraph recorder in the adjacent room which had been seen previously by all *Ss*. Although no actual psychophysiological data were obtained in this study, the impressive appearance of the apparatus was intended to enhance demand characteristics for the high-demand control and experimental groups and to serve as a basis for disguising the hypnotic focus of the experiment for the low-demand control and experimental groups.

The *Ss* in both control groups were encouraged to move about the room, use the materials provided, listen to the radio, or play computer games. Control *Ss* were also provided with social contact by *E* who entered the chamber at 15- 30-minute intervals, ostensibly to take blood pressure measures.

The *Ss* in both experimental groups reclined horizontally in a La-Z-Boy-type chair. Experimental *Ss* were asked to wear loose comfortable

clothing for the session and to reduce all bodily movement to the minimum required to maintain comfort. As in the earlier study (A. F. Barabasz, 1982), these *S*s wore Ganzfeld goggles. No social contact was provided during the session.

Consistent with current REST investigations (Suedfeld, 1980), no *S* in any group requested early termination of the 6-hour period in the chamber. Upon completion of each session, SHSS:C and the ischemic pain test with hypnotic suggestions for a localized anesthetic reaction were administered.

Results

The SHSS:C results were scored by both investigators using the test scoring sheet data obtained by the first *E* and videotapes of the test administrations. The second author was blind with respect to pre- posttesting order and to *S*'s group membership. Both investigators have administered and scored SHSS:C on at least 100 prior occasions. A single 1-point score rating discrepancy between raters was traced to a clerical error.

To determine whether or not pretreatment scores were equivalent across groups, a one-way ANOVA was computed for pretreatment SHSS:C and ischemic pain scores. The analyses revealed no significant pretreatment differences among the four groups for SHSS:C scores ($F = < 1$, $df = 3,16$; $p > .05$, or for ischemic pain scores ($F = < 1$, $df = 3,16$; $p > .05$).

The data for all four groups in pre- and postconditions were subjected to three factor mixed ANOVAs for overall analysis of SHSS:C and ischemic pain data (2 [experimental versus control] × 2 [high demand versus low demand] × 2 [pre versus post]). Significant overall results were obtained for within-Ss comparisons for SHSS:C scores (pre versus post, $F = 31.35$, $df = 1,16$; $p < .001$, and experimentals versus controls × pre versus post, $F = 5.2$, $df = 1,16$; $p < .03$) and for ischemic pain scores (pre versus post, $F = 13.24$, $df = 1,16$; $p < .002$, and experimental versus controls × pre versus post, $F = 9.65$, $df = 1,16$; $p < .006$).[2]

To further examine the effects of REST and the alternative experimental demand conditions, ANOVAs were computed for pre- and post-SHSS:C scores for each group. The results presented in Table 1 show significant increases in SHSS:C scores for both high-demand ($F = 29.6$, $df = 1,8$; $p < .005$) and low-demand ($F = 32.8$, $df = 1,8$; $p < .004$) experimental groups as well for high-demand controls ($F = 9.0$, $df = 1,8$; $p < .04$). No significant increase in hypnotizability was found for the low-demand control group ($F \leq 1$, $df = 1,8$; $p > .05$).

[2]Complete three-factor mixed ANOVA tables have been deposited with the National Auxiliary Publications Service (NAPS). For 3 pages, order document No. 04697 from ASIS-NAPS, c/o Microfiche Publications, P.O. Box 3513, Grand Central Station, New York, NY 10163-3513. Remit in advance in U.S. funds only $7.75 for photocopies or $4.00 for microfiche and make checks payable to Microfiche Publications — NAPS. Outside the United States and Canada, add postage of $4.50 for a photocopy and $1.50 for a fiche.

TABLE 1
HYPNOTIZABILITY RESULTS

Group	Condition	N	$\bar{X}$ SHSS:C Score	$S.D.$	F	# Ss Showing 3 Point or More Increase on SHSS:C
Experimental 1 (high demand)	Pre	5	4.0	1.6	29.6*	5
	Post	5	9.6	1.5		
Experimental 2 (low demand)	Pre	5	4.2	.8	32.8**	4
	Post	5	8.0	1.6		
Control 1 (high demand)	Pre	5	4.4	1.8	9.0***	2
	Post	5	7.4	2.1		
Control 2 (low demand)	Pre	5	4.0	1.9	.3****	0
	Post	5	4.2	1.3		

*$p < .005$.
**$p < .004$.
***$p < .04$.
****$p > .05$ (ns).

TABLE 2
ISCHEMIC PAIN RESULTS

Group	Condition	N	$\bar{X}$ Pain Rating	$S.D.$	F	# Ss Showing 3 Point or More Decrease on Pain Rating
Experimental 1 (high demand)	Pre	5	14.8	3.5	7.9*	4
	Post	5	11.4	2.6		
Experimental 2 (low demand)	Pre	5	15.4	2.9	8.24**	4
	Post	5	11.2	1.3		
Control 1 (high demand)	Pre	5	14.0	2.0	1.18***	0
	Post	5	13.2	2.2		
Control 2 (low demand)	Pre	5	13.8	3.9	.043***	0
	Post	5	14.0	2.3		

*$p < .05$.
**$p < .04$.
***$p > .05$.

The ischemic pain ratings were also subjected to ANOVAs for pre- and postconditions for both experimental and control groups. The results presented in Table 2 show significant decreases in pain scores for both high-demand ($F = 7.9$, $df = 1,8$; $p < .05$) and low-demand ($F = 8.24$, $df = 1,8$; $p < .04$) experimental groups following exposure to 6 hours of

chamber REST. Both high-demand ($F = 1.18$, $df = 1,8$; $p > .05$) and low-demand ($F = .043$, $df = 1,8$; $p > .05$) control groups failed to demonstrate significant changes in pain scores following the 6-hour control interventions.

Within 10-15 days after completion of the experiment, clinical follow-up interviews were independently conducted by the second author, who was blind with respect to each S's group membership. This structured clinical interview obtained information regarding the frequency of use of self-hypnosis for chronic pain control, reports of changes in frequency and potency of pain medication use, and other potentially relevant data about other intervening forms of treatment.

The interviews revealed that one S in each of the control groups used hypnosis after the experiment to reduce chronic pain. One of these Ss, suffering from arthrochondritis sensitivity (8-year history of daily pain medication usage), reported a reduction of pain medication to nil on "most days." This report was confirmed by this S's physician. The second control S reported her dosage level had been decreased to one-half, and that she expected hypnosis "to help still further." This finding may have been confounded by the addition of an anti-depressant medication treatment regime which began immediately after completion of the experiment. These two Ss had the highest SHSS:C posttest scores among the 10 total control Ss (scoring 10 and 6, respectively).

Of the 10 experimental Ss, 7 reported using hypnosis to help control pain. Of the 7, 6 Ss reduced pain medication from one-third to two-thirds of the previous usage level in cooperation with their physicians. These were Ss showing the highest post-REST SHSS:C scores (range 9-12). Experimental Ss' post-REST SHSS:C scores did not correlate significantly with their plateaued pre-REST scores ($r = .10$, $p = .43$). Of the 7 Ss reporting hypnosis use to successfully help control pain, 1 also reported an increase in the use of pain medication.

Pain management reports were as interesting and varied as the patients and their diagnoses. One S, suffering from rectal cancer, reported he was unable to reduce the pain with hypnosis but was able "to use it [hypnosis] to move the pain down to my leg" where he could tolerate it "mostly without medication." Another S said she could "make it [the pain] go away for a while by making believe I'd just had an injection for it." Other Ss reported dissociative practices such as "putting the damn pain outside of me," "imagining it like the doctor said in a balloon just up there where I could keep an eye on it" or "just letting it slip off my tail bone—my back would still feel it [the pain] but it didn't bother me so much — it's an amazing trick I've learned."

A secondary purpose of the clinical inquiry was aimed at determining whether or not Ss were able to identify their participation in the study as a control or experimental S. This focus of the interview used essentially

non-directive counseling techniques including silence, reflection, and acceptance. Although formal inquiry criteria (A. F. Barabasz, 1982) were not applied and the interviewer was blind only to Ss' group membership, it is the clear impression of the second author (MB) that all 20 Ss completing the study believed they received the active treatment. The plausibility of all treatments seemed to be greatly increased for Ss because of the extensive efforts in the hypnosis plateauing sessions.

Discussion

The results of the present study, showing significant increases in hypnotizability with chronic pain patients following 6 hours of chamber REST, replicate earlier findings (A. F. Barabasz, 1982) which were based on a sample of university students. As in the previous investigation, fully plateaued REST Ss typically doubled their pretest hypnotizability scores in post-REST testing, without confounding due to holding back of waking performance.

Several studies suggest that hypnotizable Ss may suppress waking performance to protect the integrity of their hypnotic performance (Evans & Orne, 1965; Sutcliffe, 1961; Zamansky, Scharf, & Brightbill, 1964). The *S* and *E* investment in extensive plateauing experience might be expected to increase the probability of this potential effect. The nonsignificant pretreatment analyses of both SHSS:C and pain scores suggest that holding back of waking performance was not a problem in the present study and that randomization in *S* group assignment was successful.

The data demonstrate that heavily loaded demand characteristics including both situational and instructional cues had an effect on SHSS:C scores of control Ss but not experimental Ss and that such cues did not affect the pain scores of any group. The findings indicate that chamber REST by itself increases hypnotizability and ischemic pain tolerance, and that experimental demand characteristics do not further potentiate this effect. This is interesting because previous studies had also indicated a relatively weak effect of demand characteristics added to REST. Suedfeld, Landon, Epstein, and Pargament (1971) found *S* expectancy altered Ss' stress reports, but it did not influence performance on a cognitive task. Suedfeld and Baker-Brown (1986) showed that the impact of REST was not dependent on the client's expectations. Instructional demand cues for compliance (A. F. Barabasz, 1982) raised Ss' subjective reports of hypnotic depth in a control condition but failed to significantly raise SHCS scores. Similar demand cues combined with an elaborate but brief (1 hour) REST flotation tank intervention failed to significantly increase SHSS:C scores, while 6 hours of chamber REST replicated the earlier Barabasz (A. F. 1982) study (A. F. Barabasz & Kaplan, 1987). Similarly, REST investigations aimed at control of smoking reviewed elsewhere (see M. Barabasz, O'Neill, & Scoggin, 1987), consistently showed significant effects for chamber

REST but not for flotation REST. Certainly, if experimental demand characteristics were in any way robust or powerful, in the context of modern REST instructional procedures, the impressive REST flotation tank intervention would have produced some measurable effects in these recent studies.

The demonstration that REST effects were not potentiated by demand characteristics in terms of hypnotizability scores, ischemic pain, or clinical control of chronic pain has implications when considered jointly with Orne and Scheibe (1964). The latter has, to this point, been widely misinterpreted as showing that REST has no independent effect and that its consequences are actually caused by demand characteristics; actually, of course, what the data meant was that in some early REST experiments, anxiety producing procedures led to a confounding of anxiety effects and REST effects (Suedfeld, 1980). The findings of the present investigation appear to help clear up this confusion, since REST effects per se clearly emerged.

The limited *N* available, and the clinical constraints of chronic patient care, directed that the posthypnotic suggestion for anesthesia be employed for all *Ss*. This factor limits data interpretation because it is not possible to determine whether the lowered pain reports of REST *Ss* were due to the posthypnotic suggestion because of enhanced hypnotizability or whether the lowered pain sensitivity was a nonsuggested collateral consequence of REST. The data support the conclusion that REST enhances hypnotizability and concomitantly decreases ischemic pain reports after a posthypnotic suggestion. This effect, of course, may or may not be mediated by a response to hypnotic suggestion. A study is in progress in the present authors' laboratory which focuses on this issue by testing pain sensitivity with both a suggested anesthetic site and a contralateral nonanesthetic site with pre- and posttesting.

The clinical data obtained in the postexperimental inquiry are also of interest. First it seems important to emphasize that all *Ss* viewed themselves as having been exposed to an active treatment. Unlike the usual *S* speculation found in our studies using university students as *Ss*, *Ss* in the present study seemed unconcerned with trying to identify specific treatment group membership. This may be due, in part, to the fact that none of these *Ss* had ever participated in any experimental research prior to the present study. Furthermore, all *Ss* were exposed to extensive plateau sessions as well as the REST chamber. The relevant point is simply that *Ss* appeared unaware of specific treatment group membership. While the second author was blind with respect to *Ss*' group membership at the time of the inquiry, the credibility of the follow-up findings would have been further enhanced if she had also been blind to the experimental foci of the study.

The inquiry data regarding use of hypnosis for pain control in conjunction with substantially reduced consumption of pain medication are very encouraging. The most hypnotizable *S* in each control group used hyp-

nosis to control pain with reduction in pain medication, while the majority of higher hypnotizable Ss in both experimental groups reported successful use of hypnosis to reduce pain. Inexplicably, one of these Ss also increased use of pain medication, which appeared unrelated to the course of her disease process. The remaining six experimental Ss using hypnosis also reduced pain medication usage.

It is important to recognize the quality of the anecdotal pain control reports as remarkably consistent with E. R. Hilgard's (1977) neodissociation theory of hypnosis. Successful pain controllers did not anesthetize their clinical pains, as asked to do for the ischemic pain, but rather dissociated their pain to other parts of their bodies or outside their bodies.

Caution in the interpretation of the clinical data is advised since the present results may have been confounded by intervening clinical treatment variables beyond the control of *E* such as immediate postexperimental changes in type of pain medication (two Ss) and the addition of medication for depression (two Ss). Nevertheless, the findings of the present study seem particularly exciting because the usual gap between experimental hypnosis pain control results and those of the clinical arena appears, at least in part, to have been bridged.

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Effekte der beschränkten Milieustimulation: Steigerung der Hypnotisierbarkeit für experimentelle und chronische Schmerzkontrolle

Arreed F. Barabasz und Marianne Barabasz

Abstrakt: Steigerung der Hypnotisierbarkeit und Schmerztoleranz ist durch die Therapie der beschränkten Milieustimulation (REST) mit Universitätsstudenten als *Vpn.* (A. F. Barabasz, 1982) veranschaulicht worden. Es war der Zweck des vorliegenden Studiums zu bestimmen, ob ähnliche Resultate bei Patienten mit chronischen Schmerzen erzielt werden könnten. Die *Vpn.* bestanden aus ambulanten Patienten, die in Behandlung für Leiden waren, in denen Schmerzen prominent waren, und die außerdem niedrige Hypnotisierbarkeit nach wiederholten Hypnoseplateausitzungen demonstrierten. 2 Gruppen der *Vpn.* wurden REST ausgesetzt. Die Charakteristiken der Situationsforderungen (Orne, 1962) begünstigten eine Steigerung der Hypnotisierbarkeit für REST-Gruppe 1 (starke Anforderung). REST-Gruppe 2 (niedrige Anforderung) war lagemäßigen Anforderungscharakteristiken ausgesetzt, die so angelegt waren, daß sie die experimentelle Hypothese maskierten. 2 Gruppen der Kontroll-*Vpn.* waren den gleichen, alternativen Manipulationen der Anforderungscharakteristiken ausgesetzt wie die Experimentsgruppen, doch wurde Milieustimulation unterhalten. Die Stanford-Hypnoseempfindlichkeitsskala, Form C (SHSS:C) von Weitzenhoffer und Hilgard (1962), einschließlich einer posthypnotischen Suggestion für eine anästhetische Reaktion, und ein ischämischer Schmerztest wurden vor der Behandlung und sofort nach der Behandlung administriert. Nach 6 Stunden der REST wurden bedeutende Steigerungen in den SHSS:C-Resultaten bei den Experiments-*Vpn.* mit starken und niedrigen Anforderungen gefunden wie auch für Kontroll-*Vpn.* mit starken Anforderungen. Solche Steigerungen wurden nicht für Kontrollen mit niedriger Anforderung beobachtet. Bedeutendes Ablaßen der Schmerzresultate wurde für beide Experimentsgruppen mit starken und niedrigen Anforderungen gefunden. Ein bedeutendes Ablaßen der Schmerzresultate wurde für keine der Kontrollgruppen gefunden, was einen verhältnismäßig schwachen Effekt der Anforderungscharakteristiken anzudeuten scheint. Eine unabhängige Untersuchung nach den Experimenten deutete an, daß alle *Vpn.* glaubten, eine aktive Behandlung erhalten zu haben. Die Untersuchung, die 10-15 Tage nach dem Experiment vorgenommen wurde, offenbarte die Tatsache, daß die größte Anzahl der Experiments-*Vpn.* Hypnose auf einer täglichen Basis zum Vermindern der Schmerzen benutzte mit wesentlichem Verringern von Schmerzmedikation. Nur 2 der Kontroll-*Vpn.* (am stärksten in Hypnotisierbarkeit) berichteten von einem ähnlichen Erfolg. Anekdotische Berichte von Schmerzreduzierungserlebnissen, bei denen Hypnose nach REST-Intervention benutzt wurde, unterstützen Hilgards (1977) Theorie der Neodissoziation.

Effets de la restriction de stimulation environnementale: Augmentation de l'hypnotisabilité pour le controle de la douleur chronique et celle induite expérimentalement

Arreed F. Barabasz et Marianne Barabasz

Résumé: L'augmentation de l'hypnotisabilité et de la tolérance à la douleur à l'aide de la thérapie de restriction de stimulation environnementale (TRSE) à déjà été démontrée chez des sujets universitaires (A. F. Barabasz, 1982). Le but de la présente étude était de déterminer si des résultats similaires pouvaient être obtenus chez des patients souffrant de douleur chronique. Les sujets, des patients externes sous traitement, présentaient un tableau clinique où prédominait la douleur. De plus, ils ont manifesté un plateau de faible hypnotisabilité après plusieurs sessions d'hypnose. Deux groupes de sujets ont été traités à l'aide de la TRSE. Les caractéristiques de la demande situationnelle (Orne, (1962) favorisaient une augmentation de l'hypnotisabilité pour le groupe TRSE 1 (demandes élevées). Le groupe TRSE 2 (faibles demandes) a été exposé à une demande situationelle destinée à masquer l'hypothèse expérimentale. Deux groupes de sujets contrôles ont été exposés aux mêmes types de demandes situationnelles, mais la stimulation environnementale a été maintenue. L'Échelle de Susceptibilité Hypnotique de Stanford, Forme C (ESHS:C) de Weitzenhoffer et Hilgard (1962), incluant une suggestion d'anesthésie post-hypnotique, et un test de douleur ischémique ont été administrés avant et immédiatement après le traitement. Après 6 heures de TRSE, les résultats de l'ESHS:C ont significativement augmenté chez les deux groupes expérimentaux (demandes élevées et demandes faibles) et chez le groupe contrôle à demandes élevées. Aucune augmentation n'a été trouvée chez le groupe contrôle à faibles demandes. La douleur rapportée a significativement diminué chez les deux groupes expérimentaux. Aucune diminution significative n'a été trouvée chez les deux groupes contrôles, soulignant ainsi un effet relativement faible des caractéristiques de la demande situationnelle. Une enquête post-expérimentale indépendante révèle que tous les sujets considèrent avoir reçu un traitement. L'enquête, tenue de 10 à 15 jours après l'expérience, révèle aussi que la majorité des sujets des groupes expérimentaux ont continué à utiliser l'hypnose pour contrôler la douleur et réduire leur médication. Seulement deux sujets contrôles (les plus hypnotisables) ont rapporté un tel succès. Ces rapports de réduction de douleur à l'aide de l'hypnose suite à une TRSE supportent la théorie néodissociative de Hilgard (1977).

Efectos de una estimulación ambiental reducida: mejoramiento de la sugestibilidad hipnótica para el control del dolor experimental y crónico

Arreed F. Barabasz y Marianne Barabasz

Resumen: Se hizo una demostración de aumento de la sugestibilidad hipnótica y de tolerancia al dolor mediante una terapia de estimulación ambiental reducida (REST), utilizando como sujetos a estudiantes universitarios (A. F. Barabasz, 1982). El propósito de este estudio fue determinar si se podían obtener resultados similares con pacientes que sufren de dolor crónico. Los sujetos eran pacientes externos en tratamiento para problemas entre los cuales el dolor era importante y que además demostraron baja sugestibilidad luego de repetidas sesiones hipnóticas de prueba. Dos grupos de sujetos se expusieron, a la REST. Demandas situacionales características (Orne, 1962) favorecieron un aumento de la sugestibilidad para el grupo 1 de la REST (mayor demanda). El grupo 2 de la REST (baja demanda) fue expuesto a demandas situacionales diseñadas para disfrazar la hipótesis experimental. Dos grupos de sujetos control fueron expuestos a las mismas demandas situacionales alternativas que la de los grupos experimentales, pero se mantuvo la esti-

mulación ambiental. Antes del tratamiento y luego de finalizado se administró la Stanford Hypnotic Susceptibility Scale, Form C (SHSS:C) de Weitzenhoffer e Hilgard (1962) la que *incluyó una sugestión poshipnótica* para una reacción anestésica y un test de dolor isquémico. Después de 6 horas del REST, se encontraron aumentos significativos en los puntajes de la SHSS:C de los sujetos experimentales de alta y de baja demanda, así como también para los sujetos control de alta demanda. No se encontró tal aumento para los controles de baja demanda. En los grupos experimentales de alta y baja demanda se encontraron disminuciones significativas en los puntajes de dolor. No se encontró una disminución significativa en los puntajes de dolor en los grupos de control, lo que sugiere un efecto relativamente débil de las características de demanda. Una encuesta posexperimental independiente sugirió que todos los sujetos creyeron que recibieron tratamiento activo. La encuesta que se efectuó entre 10 y 15 días después del tratamiento también reveló una mayoría de sujetos experimentales que estaban usando la hipnosis diariamente con el objeto de reducir el dolor y con una disminución importante de medicación analgésica. Sólo 2 sujetos control (de alta sugestibilidad) reportaron un éxito similar. Reportes anecdóticos de experiencias de reducción del dolor mediante la utilización de hipnosis luego de la intervención con el REST, apoyaron la teoría de la neodisociación de Hilgard (1977).