

## Bioenergetic exercises in inpatient treatment of Turkish immigrants with chronic somatoform disorders: A randomized, controlled study

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### Abstract

**Objective:** The aim of this study was to examine whether bioenergetic exercises (BE) significantly influence the inpatient psychotherapeutic treatment results for Turkish immigrants with chronic somatoform disorders. **Method:** In a 6-week randomized, prospective, controlled trial, we treated a sample of 128 Turkish patients: 64 were randomly assigned to BE and 64 participated in gymnastic exercises in lieu of BE. The Symptom Checklist (SCL-90-R) and State-Trait Anger Expression Inventory (STAXI) were employed. **Results:** According to the intent-to-treat principle, the

bioenergetic analysis group achieved significantly better treatment results on most of the SCL-90-R and STAXI scales. **Conclusions:** BE appears to improve symptoms of somatization, social insecurity, depressiveness, anxiety, and hostility in the inpatient therapy of subjects with chronic somatoform disorders. Reduction of the anger level and reduction in directing anger inwards, with a simultaneous increase of spontaneous outward emotional expression, could be expected.

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### Introduction

Several studies indicate that the incidence of psychological distress and mental disorders in diverse ethnic immigrant groups has increased all over the world, not only in comparison with fellow countrymen remaining in their homeland, but also with the indigenous population in the country to which they immigrated [1,2]. Interest in the cultural characteristics of mental illnesses has been stimulated by ever increasing awareness of cultural diversity in Western

society [3]. Turkish immigrants constitute about 30% and, hence, the largest group, of all immigrants in central Europe [4]. According to Schmeling-Kludas et al. [5], most of the illnesses diagnosed in this population are some type of somatoform disorder (over 60%).

Cross-cultural stress contributes to emotional suppression. Indeed, among Turkish immigrants, expressions of distress range from open use of culturally traditional expressions to complete avoidance [6]. Both suppression and expression of anger might contribute to somatoform disorders [7,8]. Somatoform disorders can be viewed as a process through which somatic symptoms are presented in order to eclipse emotional distress and social problems [9,10]. This particular population, however, rarely views psychiatric treatment as an

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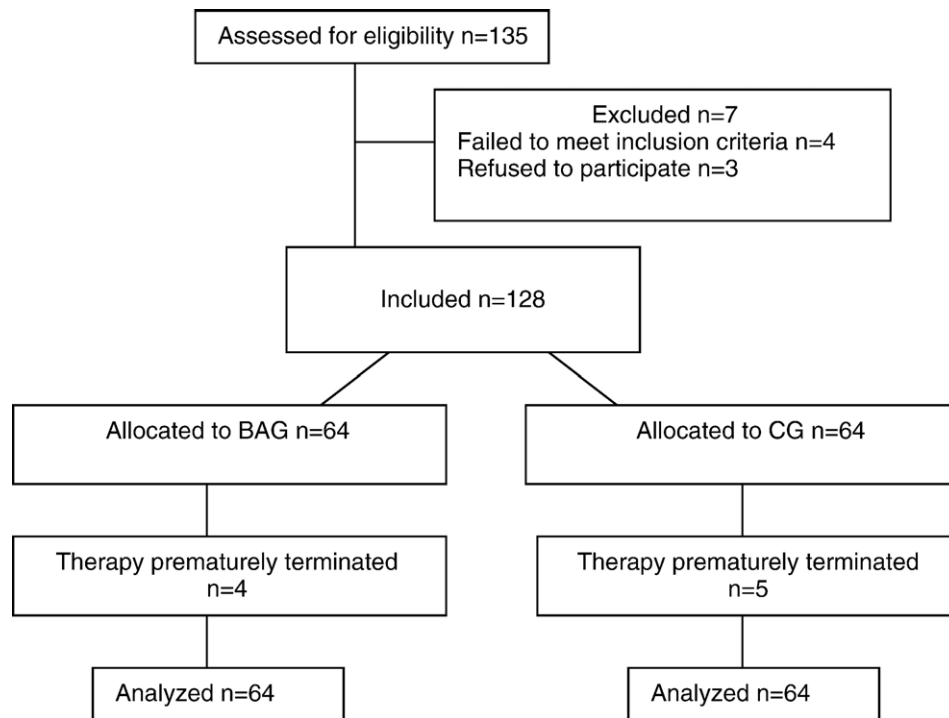


Fig. 1. Flow diagram of patients' progress through the phases of the trial.

acceptable or valuable tool for recovery or as helpful in linking bodily symptoms to emotional distress [6].

Cultural styles of attribution might contribute to both the high rate of somatization in the Turkish immigrant population, as well as its rejection of, and response to, somatic or psychosocial treatment [11,10]. The more traditional the culture, the less differentiation appears to exist between psychological disturbance and bodily symptoms [12]. For instance, although the separation between physical and emotional experience occurs most precisely in Western European languages, emotional perceptions are figuratively expressed through allegories of body sensations in the Turkish language [13,14]. Body language is thus an important facet of Turkish communication [15] and, thus, becomes an essential aid for such patients. It functions to express subject matters that the patients can verbalize only with difficulty, or perhaps even not at all, such as childhood memories, sexuality, or aggression [16]. For Turkish patients, somatization not only occurs as an alternative to expressions of psychological distress but also as an accompaniment [15] and becomes, to a large extent, the focus [13]. Somatic symptoms show culturally mediated styles of communication, and therapists should allow for a sociocultural perspective to use effective therapeutic approaches [10].

Thus, body-oriented approaches in psychotherapy pave a special therapeutic avenue on account of their nonverbal focus [17–19]. One such approach, bioenergetic analysis, uses depth psychology-based body psychotherapy, which was further developed by Alexander Lowen, based on approaches from S. Freud and W. Reich. Its effectiveness has been relatively well researched [19–22]. The central

components of this method are interventions on the physical level derived from a psychoanalytical approach [21,22]. The goal is to enable the patient to gain access to his or her own self through directed exercises connected with verbal therapy [21,22]. Bioenergetic analysis presupposes that important life experiences are retained not only in the psychic subconscious but also in the body, where they find expression in respiration, posture, and movement, as well as experience and behaviour. The theoretical concept also postulates that mental, emotional, and physical processes are closely integrated. Hence, we hypothesized that this approach might be effective in the treatment of Turkish patients.

Randomized, controlled clinical studies on psychotherapeutic treatment of Turkish immigrants are rare, but indispensable, in light of how many Turkish immigrants live in Middle and Western Europe [5]. To the best of our knowledge, there are no studies that examine the effects of body-related psychotherapy in this patient group. The goal of this study was to examine whether bioenergetic exercises (BE) significantly influence the treatment results in inpatient psychotherapy for Turkish immigrants with chronic somatoform disorders.

## Method

### Study subjects

The study was carried out in the Inntalklinik, a German hospital specializing in psychosomatics. Approximately 15% of the patients that are treated here are Turkish

immigrants living either in Germany or Austria. Three Turkish psychologists and two Turkish physicians, as well as Turkish nursing staff, work in the hospital. Insurance carriers are familiar with its transcultural therapeutic concept and refer Turkish patients specifically to the hospital.

Every Turkish patient with a chronic somatoform disorder of at least 18 years of age who was admitted for inpatient treatment was asked if he or she would take part in the study (Fig. 1). After a complete description of the study to the subjects, written informed consent was obtained.

The criteria for exclusion were psychosis and somatic illnesses that would interfere with body-oriented psychotherapy.

The Structured Clinical Interview (according to the *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition*) was then carried out for each subject by trained staff.

### Design

The necessary sample size was calculated for a Type I error of 5% ( $z_1=1.96$ ) and a power of 80% ( $z_2=.842$ ), based on the mean value ( $m_1=24.1$  and  $m_2=21.2$ ) and standard deviation ( $s_1=5.5$  and  $s_2=5.2$ ) for the Anger-In score [State-Trait Anger Expression Inventory (STAXI), assessment—see below], which were obtained from a small pilot study of 10 patients from the same population. The formula is  $n$  (per group) =  $[(z_1+z_2)^2 \times (s_1^2+s_2^2)] / (m_1-m_2)^2$  [23]. We also calculated 20% for possible drop-outs. This resulted in a group size of  $n=64$  patients.

One hundred twenty-eight patients were required: 64 (44 female and 20 male) were chosen for the bioenergetic analysis group (BEG) and 64 (46 female and 18 male) for the control group (CG) using randomized [cf. 24,25] numbers generated by an Excel table (Fig. 1). The clinic administration conducted the randomization procedure confidentially.

The study was conducted from 2004 to 2005. All subjects were tested (assessment—see below) at admission and after the sixth week of treatment.

All the patients were treated in an inpatient, integrative, psychosomatic setting (see below) for six weeks. Psychopharmacotherapy [cf. 26] was given to 58 patients in the BEG (58/64; mirtazapine 15–30 mg, paroxetine 20–30 mg, venlafaxine 75–300 mg, pipamperone 20–80 mg, risperdone 1–3 mg, quetiapine 200–400 mg, olanzapine 5–10 mg, and topiramate 50–300 mg) and 60 in the control group (60/64; mirtazapine 15–30 mg, paroxetine 20–40 mg, venlafaxine 75–450 mg, pipamperone 40 mg, risperdone 1–2 mg, quetiapine 200–400 mg, olanzapine 5–15 mg, and topiramate 50–150 mg). Weekly psychotherapeutic treatment in both the BEG and CG consisted of two individual sessions per week (60 min each with a personal Turkish-speaking psychotherapist), three interactional group sessions (60 min each in a consistent therapeutic group with two Turkish-speaking therapists), and five group sessions (60 min each in a consistent therapeutic group with two therapists, one

German-speaking and one Turkish-speaking, that consisted of two sessions of gestalt therapy, two sessions of behavioural therapy, and one session of social therapy).

Because language barriers and cultural complexity can prevent adequate diagnosis and treatment for immigrants, [27] we conducted the psychotherapy in Turkish. Our patients were all first generation immigrants with only a rudimentary knowledge of German.

In addition to the core therapy described above, which was identical for both groups, we treated the members of the BEG in 60-min group sessions of BE according to Lowen [28,29] twice weekly over a period of 6 weeks, conducted by the same therapist. The following were carried out: basic BE, expression exercises, exercises setting boundaries, vocal exercises, respiratory and bodily movement exercises, internal and external perception, expression of aggression, and grounding. This therapy was precisely standardised and carried out by therapists trained in this method. The treatment protocol was followed.

In the CG, we conducted a procedure of light gymnastic exercises, also in 60-min sessions twice weekly and with the same therapist, in lieu of BE and in addition to the core therapy. No planned or calculated psychotherapeutic interventions took place during the gymnastic exercises, nor were group-dynamic processes allowed to occur in that setting.

Nine subjects who prematurely terminated their therapy dropped out of the study (Fig. 1). The data were fed to the computer twice independently and automatically checked for deviations. Of the entries, 2.3% were identified as erroneous and adjusted. The study was then concluded according to plan.

### Assessment

The symptom checklist (SCL-90-R, Turkish) measures subjectively felt impairment by means of a 90-item self-report inventory of given physical and mental symptoms occurring during the previous week. The evaluation provides an overview of the person's mental symptom stress with respect to nine scales: somatization (SOM), obsessiveness (O-C), insecurity in social contacts (I-S), depressive tendencies (DEP), anxiety (ANX), aggressiveness/hostility (HOS), phobic anxiety (PHOB), paranoid thinking (PAR), and psychoticism (PSYC). The Global Severity Index (GSI) measures the person's basic mental stress. This can be recorded on a 5-tiered Likert Scale between "not at all" (0) and "extremely" (4). Transformation of the raw values to  $T$  values, which take sociodemographic factors into consideration, permits classification of individual cases.  $T$  values of 60 or more are regarded as mildly increased, 70 or more as greatly, and 75 or more as very greatly. For the German version the internal consistency (Cronbach's alpha) ranges between  $r=.75$  and  $r=.87$  [30].

The STAXI (Turkish) records anger and expression of anger (for the German version—Cronbach's alpha for men=.76–.89, retest correlation for men after eight

Table 1  
Sociodemographic data and psychiatric diagnoses

Age (years) <sup>a</sup>	Comorbidity			In Central Europe (years) <sup>a</sup>	Living in a partnership	Profession			
	Depressive disorders	Anxiety disorders	Substance abuse			Laborer	Employee	Homemaker	
BEG ( <i>n</i> =64)	48.3±7.1	48 (75.0%)	20 (31.2%)	12 (18.7%)	24.5±8.1	53 (82.8%)	49 (76.6%)	1 (1.6%)	14 (21.9%)
CG ( <i>n</i> =64)	49.4±7.5	46 (71.9%)	22 (34.4%)	11 (17.2%)	23.0±7.5	55 (85.9%)	46 (71.9%)	2 (3.1%)	16 (25.0%)

<sup>a</sup> Mean value±S.D.

weeks=.55–.75) and consists of 44 items, making up five scales:

1. State Anger (S-A), subjective state of anger during measurement;
2. Trait Anger (T-A), willingness to react to anger (standard value 18.1, S.D.=5.34);
3. Anger-In (AI)—tendency to suppress anger (standard value 16.10, S.D.=4.04)
4. Anger-Out (AO)—tendency to direct anger into the environment (standard value 13.0, S.D.=4.02); and
5. Anger Control (AC)—tendency to control anger (standard value 22.4, S.D.=5.29).

The range of values varies between 10 and 40 for S-A and T-A and between 8 and 32 for the others [31].

Both tests were translated into Turkish and back-translated into German. The final documents were prepared by four bilingual psychologists with many years of job experience and then compared to the original German versions. Each item was discussed until a consensus on linguistic and semantic aspects was found. The validation and reliability testing are not yet complete.

#### Data analysis

We used the statistical program SPSS, Version 11 (SPSS Chicago, IL, USA). The data were examined for normal distribution with the Shapiro-Wilk Test, and the hypothesis of normal distribution had to be condemned for 90% of the parameter. Since most of the parameters were not normally

distributed, the Mann–Whitney *U* test was performed for comparison of continuous variables. We employed standard deviations (S.D.), difference in change between both groups (DI) with 95% confidence intervals (95% CI), and probability (*P*) for reporting the treatment results according to the intent-to-treat principle. The Bonferroni correction was used [23].

#### Source of funding and ethical considerations

The study was planned and conducted in accordance with the Declaration of Helsinki and ethical laws pertaining to the medical professions, and its design was approved by the *Ethikkommission der ROMED Kliniken KG* (the German equivalent of the Committee on Human Subjects). The study was conducted independently of any institutional influence and was not funded.

#### Results

The patients' sociodemographic data and their psychiatric comorbidity at the time of randomization are found in Table 1. Both groups were comparable in light of their sociodemographic data, comorbidity, and initial measurements with SCL-90-R and STAXI.

The following were diagnosed in the category of somatoform disorders: pain disorder [BEG: *n*=24 (37.5%); CG: *n*=21 (32.8%)], somatization disorder [BEG: *n*=31(48.4%); CG: *n*=35 (54.7%)], conversion disorder [BEG: *n*=5 (7.8%); CG: *n*=4 (6.2%)], and undifferentiated

Table 2  
Changes in all nine scales (*T* values) and the GSI of the SCL-90-R

	SOM <sup>a</sup>	O-C <sup>a</sup>	I-S <sup>a</sup>	DEP <sup>a</sup>	ANX <sup>a</sup>	HOS <sup>a</sup>	PHOB <sup>a</sup>	PAR <sup>a</sup>	PSYC <sup>a</sup>	GSI <sup>a</sup>
Initial BEG ( <i>n</i> =64)	75.4±4.6	60.1±3.2	63.5±4.9	76.9±5.3	65.3±4.1	77.2±5.9	61.1±3.3	58.1±3.1	60.1±3.2	66.4±6.1
CG ( <i>n</i> =64)	74.4±5.1	61.4±4.2	62.4±3.9	77.1±4.9	66.1±5.3	78.2±4.7	60.8±4.0	57.9±3.5	60.2±3.2	66.5±5.9
Final BEG ( <i>n</i> =64)	64.1±4.9	59.1±3.3	58.1±3.2	66.2±5.6	58.1±4.5	63.1±4.9	58.1±4.8	57.4±5.5	56.9±4.9	60.1±6.9
CG ( <i>n</i> =64)	69.3±6.9	60.1±5.6	58.7±3.9	68.6±5.9	61.1±4.1	66.3±4.2	58.0±4.2	56.6±5.7	57.1±4.9	65.1±4.4
DI	−6.2	−0.3	−1.7	−1.8	−2.2	−2.1	−0.2	−0.6	−0.1	−1.6
95% CI	−8.5 to −39	−1.5 to 2.1	−3.4 to −0.1	−4.5 to −0.1	−4.1 to −0.8	−4.3 to −0.1	−1.9 to 1.5	−1.3 to 2.5	−1.8 to 1.6	−3.8 to 1.4
<i>P</i>	<.001	.70	.02	.03	.04	.01	.81	.50	.91	.21

<sup>a</sup> Mean±S.D.

Table 3  
Initial and final examination with State-Trait Expression Inventory (STAXI)

	S-A	T-A	AI	AO	AC
Initial BEG ( <i>n</i> =64)	31.9±6.3	31.2±4.4	26.2±4.4	20.9±6.4	20.3±3.5
CG ( <i>n</i> =64)	32.2±5.1	32.1±4.1	22.1±3.1	23.0±5.0	21.7±2.5
Final BEG ( <i>n</i> =64)	27.3±3.9	26.3±3.4	18.3±4.2	22.0±5.0	21.8±2.8
CG ( <i>n</i> =64)	30.7±5.6	28.9±3.4	20.5±3.6	22.0±4.5	22.7±3.3
DI	-3.1	-1.7	-6.4	2.1	0.4
95% CI	-5.9 to -0.4	-4.2 to 0.8	-8.2 to -4.4	0.3 to 3.8	-0.6 to 1.6
<i>P</i>	.01	.172	<.001	.022	.321

somatoform disorder [BEG: *n*=4 (6.2%); CG: *n*=4 (6.2%)]. The average duration of illness amounted to 57.2±17.6 months in the BEG and 59.3±22.1 months in the CG. All subjects were first-generation immigrants. Most of them come to Germany or Austria at their own initiative (either alone or with a spouse) [BEG: *n*=54 (84.4%); CG: *n*=50 (78.1%)]; the others come as family members (e.g., through arranged marriage). Tables 2 and 3 show the initial mean values for SCL-90-R and STAXI. Upon admission, both groups showed average to strongly elevated scores on the SCL-90-R scales and high values on all the STAXI scales except the AC scale. No essential differences were found between the two groups.

Tables 2 and 3 summarize BEG vs. control group change over the course of the entire study for primary outcome measures. There were no significant differences between men and women with respect to their treatment results.

## Discussion

The results of our study indicate that BE positively affects the treatment results in Turkish patients with chronic somatoform disorders, when conducted in addition to the previously described treatment program. It improved symptoms of somatization, social insecurity, depressiveness, anxiety, and hostility; reduced anger levels and the tendency to direct anger inwards; and simultaneously increased spontaneous outward emotional expression. Specifically, BE resulted in a significantly greater change than did the gymnastic exercise intervention on the GSI and on SOM, I-S, DEP, ANX and HOS scales of SCL-90-R [cf. 30], had significantly more pronounced reductions in comparison with the CG on the S-A and AI, and had an increase on the AO scales of STAXI [31–33]. Surprisingly, however, no essential differences were found between men and women.

All of our patients with chronic somatoform disorders have high scores on these scales, which indicates a strong anger potential. That would support the observations of previous studies [7,8]. Persons with high S-A scores experience relatively intense feelings of anger, and those with high T-A scores experience anger relatively frequently. Whether they suppress their anger or direct it inwards can

be assessed through the AI and AO scales. Because AI and AO are independent of each other, subjects can have high scores on both scales [31–33]. Persons with high AC scores expend a lot of energy on directing and controlling their emotions in situations that provoke anger [cf. 31–33]. In the BEG, the patients experienced a significant reduction of both perceived anger and the tendency to direct anger inwardly against themselves (AI). The tendency to express emotions (AO) increased also significantly in the BEG. Therapeutic help for finding alternative possibilities for expressing emerging anger could also be sought in body-oriented psychotherapy. It is important to remember, however, that the form of aggressive disinhibition differs according to cultural norm [34] and psychopathology [cf. 31,32].

The effects in this study could be demonstrated by the patients' symptomatic levels, both on the relatively sensitive STAXI and even on the SCL-90-R. They speak for the efficacy of this intervention; at any rate, the patients were treated not only with BE but also with numerous other therapeutic tasks. These findings could confirm the importance of nonverbal expression in Turkish patients [13,15] and contribute to the improvements of their treatment results. The improvement, not only in the somatization, but also in the other psychopathological traits as measured by the SCL-90-R, might suggest that the simultaneous therapeutic treatment with BE, with its associated mental and physical processes [21,22], could also reach the emotional distress and social problems eclipsed by somatization [9–11].

Based on analysis of the results, the combination of specialised elements of treatment in the mother tongue, along with elements that were led by the German and Turkish therapists, proved successful. This conclusion also corresponds to the findings of Schmeling-Kludas [5]. Other previous works likewise indicate that surmounting barriers such as language, culture, and class in psychotherapy is possible through corresponding therapeutic settings [35–38]. It is not, however, possible without essential modifications of the therapy that take these barriers into account [39]. According to Michel and Gillieron [40], it is probably necessary that the patients master the cultural and socioeconomic environment in which they live in order to open themselves up to an intrapsychic reality. The inclusion of body-related psychotherapy even more closely approximates the recommendation of Kirmayer and Young [10], who take culturally mediated styles of communication into consideration in therapy and thereby increase the therapy's effectiveness.

However, the study has a few methodical limitations. Only those patients who were all set to enter inpatient psychosomatic treatment were researched; the decision was not only the insurance carrier's, but the patients' as well. We suspect that we are dealing, in part, with a population that is more open and approachable in its attitude. The only tests used were self-report tests prepared through translation/back-translation, and the validation and reliability testing

are not yet complete. Furthermore, the men were clearly underrepresented in number (the ratio reflects the usual proportion of male and female patients at the clinic).

Additional research should focus on replicating the results and determining how long they last.

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