Long-Term Evaluation of the Effectiveness of Additional Autogenic Training in the Psychotherapy of Depressive Disorders

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This paper presents the results of a 3-year follow-up study on the effectiveness of additional autogenic training (AT; a psychophysiological self-control method using self-inductions of physical and mental relaxation) in the psychotherapy of outpatients with depressive disorders. Subjects were 55 patients (aged 22–69 years) with depressive disorders diagnosed according to ICD-10. Subjects were randomized to one of three groups: Group A participated in 40 single psychotherapy sessions over a period of 20 weeks; Group B learned AT in the first 10 weeks and had 20 single psychotherapy sessions as well as AT practice in the second 10 weeks; Group C was the waiting-list control group in the first 10 weeks and had 20 single psychotherapy sessions as well as AT learning in the second 10 weeks.

Keywords: Autogenic training, psychotherapy, treatment effectiveness evaluation, major depression, depressive disorders, follow-up studies, treatment outcomes.

Introduction

Positive evaluations of autogenic training in clinical and psychotherapy practice (e.g., Gorton, 1959; Linden, 1994; Luthe, 1969–1973; Pikoff, 1984) have been seriously called into question by the results of the quasi meta-analysis of controlled psychotherapy effectiveness studies published by Grawe, Donati, and Bernauer (1994). Grawe and coworkers identified only relatively few controlled quantitative outcome studies on autogenic training in clinical samples, and also summarized the results of these few studies somewhat ambiguously: On the one hand they report lower effects of autogenic training in comparison to other psychotherapeutic treatments; but on the other hand they concede that the few studies that exist were of a relatively high methodological standard in comparison to studies focusing on other psychotherapeutic techniques.

Numerous conceptual and methodological objections can be raised to the quasi meta-analysis of Grawe.
and colleagues (1994). As far as the effectiveness of autogenic training in clinical practice is concerned, many outcome studies were not included by Grewe and colleagues because of their preexperimental design, low sample size, and/or lack of clinically relevant symptoms (for those outcome studies see, e.g., Linden, 1994; Luthe 1969–1973). Another argument has been neglected up until now. Autogenic training—introduced as a systematic autosuggestive relaxation technique for use in the prevention and treatment of disorders by Johannes H. Schultz in the 1920s—is not a disorder- or symptom-specific treatment approach, but rather an unspecified treatment technique aimed at promoting the individual’s competence to relax and switch off intentionally, in a holistic biopsychological way, including mental as well as physical relaxation and improved coping with stressful life events. Therefore, autogenic training is hardly a primary treatment technique (which focus on the specific symptoms, etiology, and/or psychodynamics of a disorder). At most, functional insomnia and Raynaud’s disease are disorders for which autogenic training may be a primary treatment technique (see Grewe et al., 1994; Krampen, 1998; Linden, 1994). For most (other) disorders autogenic training is an accompanying treatment technique, used in addition to primary symptom-oriented treatment approaches. It therefore makes little sense to compare the symptom- and disorder-unspecific autogenic training with symptom-specific primary treatment techniques. Rather, the effectiveness of additional autogenic training (that is, in addition to symptom-specific treatments) must be compared with that of symptom-specific treatments without autogenic training. This was done in the present follow-up study, which compared single outpatient psychotherapy of depressive disorders with versus without autogenic training. Before the methods and results of the controlled outcome study are presented, some general information about autogenic training and its expected effects in patients with depressive disorders is given.

Firstly, three historical facts should be considered when speaking of the development of modern psychological treatment methods:

1. Very early—in the 1920s—Johannes H. Schultz, the founder of autogenic training, dismissed the heterosuggestive (directive) treatment strategy in favor of an approach focusing on the individual’s competencies and capabilities to actively regulate his/her own development, behavior, affective states, and experience (Schultz, 1926, 1970). Therefore, autogenic training has subsequently been termed an autosuggestive self-help technique, i.e., a historically early self-control and self-management method.

2. From the beginning Schultz was engaged in empirical studies (for the most part single-case reports, but also some group studies), which not only analyzed the applicability and the effects of autogenic training in clinical samples but in healthy persons too—together with preventive treatment indications.

3. This early research and application of autogenic training was conducted in group settings. Thus, autogenic training was historically one of the first—if not the first—psychological group treatment approach exploiting the economic as well as the dynamic and social learning advantages of group settings in the prevention and treatment of disorders.

Autogenic training is defined as a psychophysiological self-control technique for physical and mental relaxation as well as a stress management technique which aims to improve coping skills and lower individuals’ vulnerability to negative stress reactions (see, e.g., Linden, 1994; Pikoff, 1984; Schultz & Luthe, 1969). It uses autosuggestion, by which individuals learn, intentionally and systematically, to alter certain psychophysiological functions with (initially) minimal intervention by psychotherapists and, after the technique has been learned, without any intervention by another person. Thus, the individual learns postural and mental skills by personal practice under therapeutic instruction and support. In a relaxed sitting position (for technical details see Methods, Procedure below) the training uses seven short verbal standard formulas, emphasizing feelings of general peace, heaviness in the limbs, peripheral warmth, respiratory regularity, cardiac regularity, abdominal warmth, and coolness of the forehead.

The formulas are introduced in this sequence, each one being practiced in the introductory course group and alone at home until the intended effect is observed. Mastery of all formulas requires daily training for several weeks (at least 2 months). Once learned, autogenic exercises not only provide relief from psychosomatic complaints and disorders but should also become part of a daily relaxation routine. Individuals use the exercises as a coping device in anticipation of and during stress, as well as a self-management technique for relaxation and recuperation: “In its most complete form, then, autogenic training represents the fusion of physiological, cognitive, and behavioral elements into what for some becomes a life-long method of emotional and physical self-control” (Pikoff, 1984, p. 622). The general treatment objectives of autogenic training are:
• The promotion of the person's capabilities to relax and to rest,
• The reduction of overwhelming negative affects,
• The reduction of nervousness,
• The promotion of performance (e.g., selective attention and memory recall),
• The self-regulation of autonomous nervous system processes (like heart rate and body temperature), and
• The promotion of self-control and self-actualization through enhanced self-perception and self-regulation (see, e.g., Krampen, 1998; Schultz & Luthe, 1969; Pikoff, 1984).

While most of the treatment objectives of autogenic training are of relevance in the treatment of depressive disorders, this is especially true for the reduction of overwhelming negative affects. In addition, it is hypothesized that learning autogenic training contributes to the improvement of the activity level, structuring of everyday life, and self-control of patients with depressive disorders. Further, autogenic training aims to reduce psychosomatic symptoms which frequently accompany depressive orders as well as to reduce the individual's vulnerability to stressors and negative stress reactions. Therefore, it is hypothesized that the long-term effectiveness of combined treatment (i.e., psychotherapy and autogenic training) of depressive patients is better than that of psychotherapy without autogenic training. Treatment effectiveness criteria in the follow-up study presented here include relapse rates and treatment reentry rates, as well as depressive symptoms and psychosomatic complaints.

Methods

Subjects

Participants of the follow-up study were an unselected sample of 55 adult German psychotherapy outpatients with depressive disorders (M = 41.3, SD = 6.77 years; age range 22–69 years; 38 females and 17 males; for further details, see Krampen, 1997). All treatments were initiated by the patients themselves and charged. ICD-10 diagnoses were depressive episode (F32.xx) and long-term depressive reaction (F43.21; N = 21 patients), recurrent depression (F33.xx; N = 25 patients), and dysthymia (F34.1; N = 9).

Psychotherapy and introductions to autogenic training were given by 6 experienced psychotherapists (with at least 8 years in psychotherapeutic practice; 3 females and 3 males) with special psychotherapy training as well as professional certification for behavior therapy or cognitive therapy and at least one other psychotherapeutic approach (i.e., client-centered psychotherapy, gestalt therapy, family therapy, or depth psychological founded therapy).

Measures

Data were collected before the start of treatment, after 10 weeks, 20 weeks, and 8 months, as well as 3 years after the end of treatment (see Figure 1). The measures used included


2. A German version of the “Beck Depression Inventory” (BDI; Hautzinger et al., 1994; internal consistency in the present sample $r_h > .73$).

3. The “Symptom Checklist for Autogenic Training” (AT-SYM; Krampen, 1991), a German symptom checklist including four-point rating scales of 48 mainly psychosomatic complaints with indicative relevance for autogenic training (internal consistency $r_{dd} > .89$).

4. In addition, at both follow-up points data were gathered on relapses and disease course, psychotherapeutic and medical treatment reentry, as well as the frequency of autogenic exercises in everyday life (AT-KATAM; Krampen, 1991).

Procedure

The design of the controlled follow-up outcome study is summarized in Figure 1 (notation according to Campbell & Stanley, 1963). Randomization of patients to three groups was done according to their time of making an appointment and the diagnosis of clinical depression (according to the SCID-P and ICD-10 criteria), i.e., the first depressive patient seen by each therapist was assigned to Group A, the second to Group B, the third to Group C, the fourth to Group A, etc. Patients in Group A received 40 single psychotherapy sessions over 20 weeks. Patients in Group B learned AT in the first 10 weeks and had 20 single psychotherapy sessions as well as AT practice in the second 10 weeks. Patients in Group C were the waiting-list control group in the first 10 weeks and had 20 single psychotherapy sessions as well as AT learning in the second 10 weeks. During treatment, there were 3 dropouts from Group A, all due to the start of drug therapy. Before treatment start, there were 4
Figure 1
Design of the follow-up study (notation according to Campbell & Stanley, 1963). R = randomization; n = sample size; mis = dropouts at O2; O1 = pretest: ID10, SCID-P, BDI, AT-SYM; O2 = 1st posttest (10 weeks after O1): ID10, BDI, AT-SYM; O3 = 2nd posttest (10 weeks after O2): ID10, BDI, AT-SYM; O4 = 1st follow-up (8 months after O3): BDI, AT-SYM, AT-KATAM, disease and treatment course; O5 = 2nd follow-up (3 years after O3): BDI, AT-SYM, AT-KATAM, disease and treatment course; X3 = psychotherapy (20 single sessions); X6 = introduction to autogenic training (10 group sessions); Xc = X3 plus X6 = combined single psychotherapy and AT introduction/AT exercises.

dropouts in Group C, which were due to the start of treatment in a psychiatric or another psychotherapeutic setting. There were no dropouts in Group B. After the second posttest (see Figure 1) 4 patients in Group A, 3 patients in Group B and 6 patients in Group C participated in low frequency further psychotherapy (maximum one session per week for a maximum of 3 months; for details, see Krampen, 1997).

Individual psychotherapy in Groups A, B, and C took an integrative psychotherapy approach, in which the focus of the psychotherapeutic process is systematically—according to the results of therapy—accompanying formative diagnosis—changed from behavior-oriented and problem-centered treatment to supportive treatment, as well as to psychodynamic-oriented treatment and vice versa. Each psychotherapist gave single treatments to 8–12 patients. All psychotherapies were carried out under professional clinical supervision as well as special research supervision as part of the present research project.

Autogenic training was given to the patients of Groups B and C in introductory courses in the same way (symptom-heterogeneous groups with a maximum of 10 patients with different mental disorders per course; one group meeting per week for 10 weeks), using standard procedures and formulas (see Schultz & Luthe, 1969): After exercise of the "simple sitting posture" (this was preferred to the horizontal training posture and the reclining chair posture because it was more practicable), closure of eyes and passive concentration (implying a casual and functional passivity toward the intended functional changes), and the technique of coming back to normal (flexing arms vigorously, breathing deeply, opening eyes), the standard exercises of autogenic training were introduced and trained. One formula was introduced in each group meeting after an introductory discussion with the patients. The standard mental exercises involve autosuggestion of the standard formulas:
- "I am at peace"—"Peace,"
- "My right/left arm is heavy"—"Heaviness" (the dominant arm was selected),
- "My right/left arm is warm"—"Warmth,"
- "Breathing calm and regular"—"It breathes me,"
- "Heartbeat calm and regular,"
- "My solar plexus is warm,"
- "My forehead is cool."

Participants were trained to practice passive concentration and to be "in mental contact with the part of the body indicated by the formula (e.g., the right arm), and maintenance of a steady flow of a film-like (verbal, acoustic or visual) representations of the autogenic formula in the mind" (Schultz & Luthe, 1969, p. 15). Thus, from a psychophysiological point of view, the stage is set for relaxation and self-regulation during autogenic exercises by the reduction in external and proprioceptive stimulation, and by the verbal content of the formula implying that the relevant psychophysiological system works automatically. Patients practiced the learned autogenic exercises alone at least twice daily. Treatment focused on autogenic exercises at home. This was supported—in accordance with the adaptive indication strategies for relaxation exercises in patients with depressive disorders (see Krampen, 1997, 1998)—by explorations of patients' routines in everyday life, the setting of times for the exercises in these daily routines, and the definition of activities after the exercises, as well as rather short durations of autogenic exercises at the beginning (i.e., 2–5 minutes). In some patients autosuggestions were intensified by static mental images (representing subjectively peace, heaviness, and/or warmth) that were developed individually with patients.
Results

Mean comparisons for all pretest-variables—including sociodemographic variables, ICD-10 diagnoses, BDI scores for depressive symptoms, and AT-SYM scores for psychosomatic symptoms—indicated that the randomization procedure resulted in comparable groups of depressive outpatients (for sociodemographic and disorder-related variables: \( \chi^2(2) < 2.05 \) and \( F(2, 53) < 1.09 \); see, e.g., Figures 2 and 3; see also Krampen, 1997). Because outcome results on short-term effects have already been published (see Krampen, 1997), the results presented here focus on data gathered 3 years after the end of treatment at the second follow-up. All former patients who had finished treatment (see Figure 1) were contacted by mail (some of them, additionally, by phone), and all of them participated in the follow-ups. Thus, long-term evaluative results are based on a total of 48 patients.

Frequency of Autogenic Exercises at Follow-Up

At the second follow-up, 26 of the 33 patients who had learned autogenic training (belonging to Groups B and C) reported that they practiced autogenic exercises “at least one or two time a week” (or more frequently), with 7 patients reporting exercising “at least one or two times per month.” Thus, all depressive patients who had learned autogenic training before or accompanying psychotherapy still did autogenic exercises 3 years after the end of treatment. However, social desirability effects may have biased this self-report data. None of the patients belonging to Group A learned autogenic training or another systematic relaxation method during treatment or after the end of treatment.

Relapse and Treatment Reentry

Second follow-up data on relapse and disease course as well as psychotherapeutic and medical treatment reentry because of a mental disorder agree totally. Therefore, relapse and treatment reentry have been used as one outcome variable (see Table 1). In addition, there are no significant differences between Group B (introduction to autogenic training before the start of psychotherapy) and Group C (introduction to autogenic training simultaneously with psychotherapy) in the frequency of autogenic exercises at second follow-up (\( \chi^2(1) = 0.87 \)). Therefore, patients of Groups B and C were put together in one Group, called B+C, who had combined psychotherapy and autogenic training in treatment.

![Depression (BDI Score) Diagram](image)

**Figure 2**
Depression (BDI scores) at pretest, two posttests and two follow-ups in the three treatment groups.
Psychosomatic Complaints (AT-SYM Score)

![Graph showing PR scores over time for different groups.]

**Figure 3**
Psychosomatic complaints (AT-SYM Scores) at pretest, two posttests, and two follow-ups in the three treatment groups.

**Table 1**
Treatment outcome in Group A (psychotherapy without autogenic training) vs. Groups B and C (both with combined psychotherapy and autogenic training) after 3 years.

<table>
<thead>
<tr>
<th>Treatment outcome after 3 years</th>
<th>Group A (psychotherapy)</th>
<th>Group B &amp; C (combined psychotherapy and autogenic training)</th>
</tr>
</thead>
<tbody>
<tr>
<td>No relapse and no psychotherapeutic or medical treatment because of a mental disorder</td>
<td>9 ($P_a = .60$)</td>
<td>30 ($P_{bc} = .91$)</td>
</tr>
</tbody>
</table>

At least one relapse with psychotherapeutic and/or medical treatment

- Group A: 6
- Group B & C: 3

*Note: $\chi^2 (df = 1) = 4.60^*$; $\varphi = .31$ ($p < .05$; two-tailed; Yates continuity correction).*

Treatment outcomes in Group A (psychotherapy without autogenic training) and Group B+C (psychotherapy and autogenic training) are presented in Table 1. The simple probability of success of psychotherapy without autogenic training is 60%, the simple probability of success of combined treatment (i.e., psychotherapy and autogenic training) is 91%. Two-tailed statistical evaluation of relapse and treatment reentry rates resulted in a significant group difference in favor of Group B+C (psychotherapy and autogenic training). When the treatments (psychotherapy without versus psychotherapy with autogenic training) were compared with regard to the relative risk of treatment failure, psychotherapy without autogenic training was found to fail four times more often than psychotherapy with autogenic training ($rR = 4.4$). The relative success of additional autogenic training ($f = .78$) shows that treatment failures of psychotherapy without autogenic training can be reduced by additional autogenic training by 78%. Last but not least, with reference to nonparametric methods for the statistical treatment comparisons (see, e.g., Bortz & Lienert, 1998; Plackett, 1974), the odds ratio ($OR = 6.7$)
points to psychotherapy with autogenic training in depressive outpatients being 6 times more effective than psychotherapy without autogenic training (see Table 1).

Depressive and Psychosomatic Symptoms at Follow-Up

BDI Scores for depression gathered at all five measurement times are presented for the three groups under study in Figure 2 (for details on means and standard deviations see Krampen, 1997). While symptom courses during treatment differ between the three groups, the results at the first follow-up (collected 8 months after treatment) point to very similar reductions of depressive symptoms in all treatment groups (see, Krampen, 1997). However, second follow-up data (collected 3 years after treatment) are different: while Groups B and C (psychotherapy with autogenic training) show lasting positive effects, patients in Group A (psychotherapy without autogenic training) again show an increased mean BDI score, which reaches the upper level of mild depression and is just under the cut-off point for clinical depression. A univariate analysis of variance (ANOVA) with the factor groups (A vs. B+C) and the repeated measurement factor time (pretest, 2nd follow-up) yielded a significant interaction between group and time \((F(1, 44) = 5.21, p < .05)\), indicating that the overall mean effect of time \((F(1, 44) = 8.96, p < .01)\) varies between the groups under analysis. Thus, long-term lasting reduction of depressive symptoms is significantly better for patients under psychotherapy with autogenic training than in those under psychotherapy without autogenic training.

Analogous to the BDI outcome results, AT-SYM Scores for psychosomatic complaints gathered at all five measurement times are presented for the three groups under study in Figure 3 (for details on means and standard deviations, see Krampen, 1997). Again, while symptom courses during treatment are different in the three groups, the results at the first follow-up (8 months after treatment) point to quite similar reductions in psychosomatic symptoms in all treatment groups (see, Krampen, 1997). However, even first follow-up data are somewhat different: AT-SYM scores are reduced more in Groups B and C (psychotherapy with autogenic training) than in Group A (without autogenic training). Furthermore, second follow-up data (gathered 3 years after end of treatment) indicate lasting positive effects in Groups B and C (psychotherapy with autogenic training), while patients in Group A (psychotherapy without autogenic training) show a significantly increased mean AT-SYM Score. A univariate analysis of variance (ANOVA) with the factor groups (A versus B+C) and the repeated measurement factor time (pretest, 2nd follow-up) yielded a significant interaction between group and time \((F(1, 44) = 6.87, p < .01)\), showing that the overall main effect of time \((F(1, 44) = 9.65, p < .01)\) differs between the groups under analysis. Thus, there is a significantly greater long-term, lasting reduction in psychosomatic symptoms in depressive outpatients under psychotherapy with autogenic training than in those under psychotherapy without autogenic training.

Discussion

The results of this controlled quantitative psychotherapy outcome study confirm the added value of giving an introduction to autogenic training in addition to single psychotherapy in the treatment of outpatients with depressive disorders. Treatment outcomes were better in patients who participated before or in combination with psychotherapy in introductory courses on autogenic training, than in patients who had psychotherapy without autogenic training. Three years after the end of treatment, group differences (in favor of the patients who had learned and practicing autogenic training) are significant with regards to categorical data on relapse and treatment reentry as well as to psychometric data on depression and psychosomatic complaints. Therefore, autogenic training—as a rather symptom- and disorder-unspecific treatment technique—is confirmed to be an effective accompanying treatment technique when used in addition to symptom- and disorder-oriented psychotherapy of depressive outpatients. Positive effects of autogenic training (in combination with psychotherapy) also include lasting reductions in general psychosomatic complaints as well as lasting reductions in depressive disorders. It is hypothesized that learning and practice of autogenic exercises in everyday life reduce the patient’s vulnerability to stressors and negative stress reactions: patients with depressive disorders improve in self-control and coping behavior. They have more effective relaxation and coping strategies at their proposal, by which—perhaps initially weak, but depression-related—psychosomatic symptoms can be more effectively reduced and controlled by their own efforts. Second follow-up data after 3 years showed that this results in significantly lower relapse and treatment reentry rates in depressive patients who had learned autogenic training in addition to psychotherapy.
It must be emphasized, however, that psychotherapy as well as the introductions to autogenic training in the study presented were given by psychotherapists with extensive job experience (at least 8 years of psychotherapeutic practice) and special psychotherapy training, as well as professional certification in at least two psychotherapeutic approaches. All treatments were carried out under double professional supervision, one focusing on clinical and the other on research supervision. Thus, psychotherapeutic techniques and strategies, as well as the introductions to autogenic training, were applied differentially. According to adaptive indication strategies, the focus of (integrative) psychotherapy was changed rationally from behavior-oriented and problem-centered treatment to supportive treatment and to psychodynamic treatment and vice versa. In addition, introductions to autogenic training and the use of autogenic exercises were adapted to the learning problems and depressive symptoms of the individual patients. Thus, the positive effects on treatment outcomes of additional autogenic training for depressive patients apply in psychotherapeutic outpatients settings with supervised and adaptive introductory courses on autogenic training. Adaptive indications for autogenic training in depressive disorders involve standardized formative diagnoses (see, e.g., Krampen, 1991, 1998), careful explorations of individual patients’ routines in everyday life, the individual setting of times for the autogenic exercises within these daily routines, the definition and prescription of activities after the autogenic exercises, if necessary, very short durations of autogenic exercises, if necessary, intensification of autosuggestions by static mental images developed individually with patients, etc. Provided that autogenic training is given in such a controlled and supervised fashion, the results show that this disorder-unspecific, autosuggestive relaxation technique is an effective addition to psychotherapy for outpatients with depressive disorders.

References


