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# Improving Volitional Competence Is Crucial for the Efficacy of Psychosomatic Therapy: A Controlled Clinical Trial

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**Abstract**

**Background:** Although skills of will (volitional competences), such as self-motivation or emotion regulation, are particularly necessary for patients with psychiatric and psychosomatic disorders, it is unknown whether volitional deficits can be reduced and thereby the efficacy of psychotherapy increased. We investigated the effect of a group therapy for improving volitional competence in an inpatient rehabilitation program. **Methods:** In a controlled clinical trial, patients from a rehabilitation clinic participated either in the volition group therapy in addition to the standard cognitive behavioral therapy (volition group, VG) or in the standard cognitive behavioral therapy (standard group, SG). Patients were tested for volitional competence, depressive symptoms, total psychiatric symptomatology, and physical complaints prior to, at the end of inpatient therapy and after 6 months of follow-up (n = 242). **Results:** At the end of inpatient therapy, better improvement in volitional competence was observed in the VG than in the SG [e.g. self-motivation: effect size (ES) 0.96 vs. 0.39; ANCOVA: $F_{(1, 209)} = 16.58$; $p < 0.001$]. Patients with greater volitional improvements had a better rehabilitation outcome. In the VG, depressive symptoms as well as total psychiatric symptomatology decreased significantly more than in the SG [ES: 1.18 vs. 0.87, $F_{(1, 207)} = 4.68$, $p < 0.05$, and ES 1.12 vs. 0.73, $F_{(1, 205)} = 4.68$, $p < 0.05$, respectively], but not physical complaints [ES: 0.62 vs. 0.48, $F_{(1, 207)} = 1.08$, n.s.]. **Conclusions:** Effect size increased in patients with initially low volitional competence and high motivation to participate in a volitional training. These results might lead to a more systematic assessment and training of volitional competence.

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## Introduction

The efficacy of intervention programs for patients with psychiatric and psychosomatic disorders is good, with effect sizes around 0.85 [1, 2]. Inpatient rehabilitation programs are particularly well examined in the German Health System [3], with a mean effect size of 0.60 after an average follow-up of 8 months [4].

In the implementation of treatment goals, difficulties occur, i.e. loss of motivation, negative affect, lack of attention, over- or underactivation, forgetting the goal, lack of initiative, etc. The psychological function which is employed to overcome such difficulties is the will ('volition') [5–7]. Volition, as the central executive of the mental system, can be differentiated into several skills of will ('vo-

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litional competences') such as attentional focusing, self-motivation, emotion regulation, self-activation, self-relaxation, intention control, planning skill, impulse control and initiating control [6].

Volition is particularly necessary for patients with psychiatric and psychosomatic disorders, because it promotes recovery from stress [8] and correlates with fewer reports of psychopathology [9, 10]. However, these patients show exceptional volitional deficits [6, 11–13]. Some studies suggest that outcome is better the more these patients improve in volitional competence [13, 14]. However, no systematic evaluation of the efficacy of volitional training in the inpatient rehabilitation has yet been published. We therefore investigated the effect of a new manualized volition group therapy program [15] for enhancing volitional competence.

## Methods

### Study Population

Participants were inpatients of a behavior therapy ward of a rehabilitation clinic between April 2002 and September 2003 with a depressive, anxiety, eating, adjustment, or somatoform disorder. To be eligible, all patients had to show deficits in self-regulation and/or self-control, operationally defined in advance in terms of scores on the Volitional Components Questionnaire (VCQ) [6]. Exclusion criteria were drug or alcohol addiction, acute risk of suicide, brain disorder or acute psychosis. All patients provided written informed consent, and the study protocol was approved by the ethics committees of the regional medical authority.

### Design

Patients belonged to one of two treatment groups. Patients of the volition group (VG) participated in the volition group therapy in addition to the standard behavior medicine program, patients of the standard group (SG) participated only in the standard program. Outcome measures were assessed three times: before and at the end of treatment, and after 6-month follow-up. After patients who were eligible for the study had been informed about the study and had decided to participate, they had the free choice to take part either in the VG or the SG (nonrandomized controlled clinical trial).

### Treatment

The standard behavior medicine program follows a multidisciplinary and multimodal treatment concept. Each patient is lead through the inpatient treatment by a principal psychotherapist, who elaborates the therapy goals and the treatment plan together with the patients and deals with the core problems in weekly individual sessions. The emphasis of the psychotherapeutic focus is the symptom-oriented behavior group therapy. In addition, sport, progressive muscle relaxation, social therapy and ergotherapy (occupational therapy) as well as medical treatment (including appropriate medication) are done.

The volition group therapy consisted of eight 90-min sessions conducted twice a week. A session-by-session treatment manual consisting of twelve modules was prepared [15]. S.F. was the therapist throughout the time of the study. In each session, one to three volitional competences were trained. The main volitional competences that received most attention were attentional focusing, self-motivation, emotion regulation, self-relaxation and self-activation, coping with failure, and impulse control. Two fundamental skills for volitional self-regulation, namely a good self-perception and realistic goal setting, were also trained.

Each module consists of psychoeducation and practice elements. A module starts with a group discussion, in which experiences in the respective topic are activated. Usually in small groups, strategies that can be used for overcoming the volitional problem are collected. To summarize and supplement this, the therapist explains all strategies for the respective volitional competence using slides. To apply the volitional strategies to the individual goal and the own person, work sheets were filled out in and between the sessions. In addition, exercises are carried out for training the competences. Most of the exercises are also suitable for being performed between the sessions. All exercises, work sheets and information were given to the patients in the form of a booklet.

### Measures

The VCQ [6] was used to assess the volitional competences. It consists of 38 scales (190 items) which are divided into two parts. The first part measures the two modes of volition (self-regulation and self-control) which are split up into several volitional competences. The second part assesses symptoms of reduced access to these volitional competences under conditions of frustration or stress. The version of the VCQ used in this study consists of 12 self-regulation and self-control scales (60 items, 5 items per scale) in a randomized order. Self-regulation comprises attentional focusing, self-motivation, emotion regulation, self-activation, self-relaxation, decision regulation, and coping with failure. Self-control comprises goal recollection, forgetfulness prevention, planning skill, impulse control, initiating control. The internal consistence of the scales is high (Cronbach $\alpha$ between 0.68 and 0.86). Norm values are available separately for women and men (t values with a mean of 50 and a standard deviation of 10) [13]. Volitional deficits are defined as a t value less than 50 in the macrocomponent self-regulation and/or self-control.

Further instruments are: a German short form of the SCL-90-R [16], a 9-item self-report measure of total psychiatric symptomatology; the German form of the Center for Epidemiological Studies Depression Scale [17], a 15-item self-report measure of depressive symptoms, and the short form of the Giessen Subjective Complaints List (Giessener Beschwerdebogen) [18], a 24-item self-report questionnaire on physical complaints with the following 5 scales: fatigue, stomach trouble, pain and dyscardia, and a total value for physical complaints.

Motivation was assessed by 4 items, asking for hope for success of therapy, the conviction to be able to contribute to a solution, the conviction to be able to influence health (all with a 5-point scale), and whether participation in the treatment is from the patient's own initiative vs. patient is sent (with a 2-point scale).

### Study Protocol

All patients were informed about the study on the 5th day of their clinic stay and were asked to fill in the VCQ. On the 7th day,

the results of the VCQ were returned and analyzed. Patients eligible for the study were invited to a separate session in which they were informed about the two study groups. Patients that decided to participate in the study filled in the questionnaires assessing the symptom variables (pretest). The volition group therapy was attended from the 2nd to the 5th week of the clinic stay. During the last 5 days of their stay, the patients filled in all questionnaires a second time (posttest). Six months after the discharge, all questionnaires were sent to the patients via mail, and they were asked to fill them out and send them back in a prepared stamped envelope.

*Statistical Analysis*

We determined the size of the sample on the assumption that we would detect a medium effect (Cohen's d = 0.5) for the difference between the VG and SG with 80% power at an α-level of 0.05 and allowing for a 25% rate of attrition. Based on that, we calculated that 250 patients would have to be enrolled.

Effect sizes as intraindividual changes from pre- to posttest and pretest to follow-up were calculated as [mean (pretest) – mean (posttest or follow-up)]/standard deviation (pretest). To examine the difference between the VG and SG, analyses of covariance on posttest and follow-up scores with pretest scores and duration of treatment (because groups differ significantly in this variable) as covariates were performed. Two-factor ANOVAs with the factors treatment and test time were also performed but not reported because of equivalent results.

Dropouts were defined as patients who decided to participate in the VG, but attended only 1, 2, 3 or 4 of the 8 sessions of the VG therapy. Completers were defined as patients who attended at least 5 sessions. Note that most of the dropouts returned posttest and follow-up questionnaires because this belonged to the standard evaluation of the clinic. Patients who did not return questionnaires were not included in the analysis.

## Results

*Enrolment and Baseline Characteristics*

Six hundred and fifty-one patients were treated on a behavior therapy ward of the clinic while the study was conducted, 349 of them had relevant volitional deficits (53.6%), 242 of these elected patients chose to participate in the study (69.3%), 121 in each group. Two hundred and thirteen (88.0%) returned the posttest questionnaire (106 VG, 107 SG), and 153 (63.2%) the follow-up questionnaire (74 VG, 79 SG). Of the 121 patients in the VG, 96 were categorized as completers and 25 as dropouts (20.7%).

There were no significant differences between the VG and SG at baseline with regard to age (VG: 42.82 ± 12.04 years; SG: 43.07 ± 9.55 years), gender (VG: 79.3% female; SG: 75.2% female), volitional competences (e.g., self-motivation, VG: 42.03 ± 8.83; SG: 42.04 ± 8.08), motivational variables (e.g., conviction to be able to contribute to a solution, VG: 3.63 ± 0.95; SG: 3.42 ± 1.00), depres-
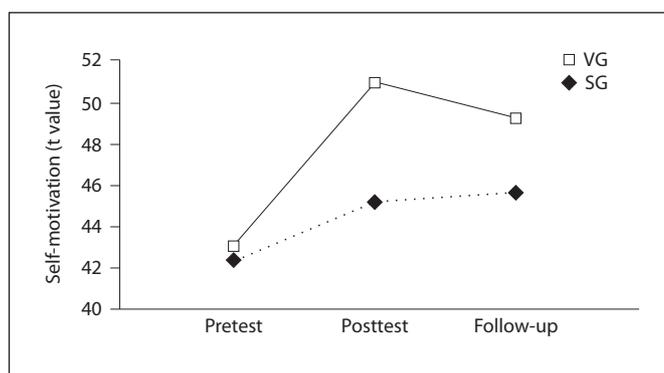


**Fig. 1.** Course of change in self-motivation in the VG (n = 74) and SG (n = 79).

sive symptoms (VG: 64.21 ± 9.01; SG: 64.43 ± 8.71), total psychiatric symptomatology (VG: 84.15 ± 17.79; SG: 82.14 ± 17.69), and physical complaints (VG: 65.48 ± 12.51; SG: 66.67 ± 13.37).

The proportion of female patients in the study sample (77%) corresponds to that in the total sample (74%). There were also no significant differences between the dropouts and completers of the VG.

*Changes in Volitional Competence*

Figure 1 shows the course of change in self-motivation in the VG and SG. There was an improvement in both groups, but it was larger in the VG than in the SG. The changes seem to be relatively stable from posttest to follow-up. Table 1 shows mean scores for all volitional competences at pretest, posttest and follow-up, together with the results of analyses of covariance on posttest and follow-up scores with pretest scores and duration of treatment as covariates. Effect sizes are also presented.

At posttest, the VG showed significantly greater improvement than the SG in the following volitional competences (table 1): attentional focusing [$F(1, 209) = 11.48$; $p < 0.001$], self-motivation [$F(1, 209) = 16.58$; $p < 0.001$], emotion regulation [$F(1, 209) = 19.23$; $p < 0.001$], self-activation [$F(1, 209) = 4.32$; $p < 0.05$], self-relaxation [$F(1, 209) = 9.84$; $p < 0.01$], decision regulation [$F(1, 209) = 4.60$; $p < 0.05$], and initiating control [$F(1, 209) = 4.78$; $p < 0.05$]. Improvements were not significantly different for coping with failure [$F(1, 209) = 0.48$; n.s.], goal recollection [$F(1, 209) = 0.11$; n.s.], forgetfulness prevention [$F(1, 209) = 0.56$; n.s.], planning skill [$F(1, 209) = 3.66$; $p = 0.06$], and impulse control [$F(1, 209) = 2.91$; $p = 0.09$]. The effect sizes shown in table 1 confirm the superiority of the VG over the SG in most volitional variables.

At follow-up, changes in the VG were still greater than in the SG, as suggested by the effect sizes in table 1. However, ANCOVA results show that the VG improved significantly more only in emotion regulation [$F_{(1, 149)}$ = 4.22; $p < 0.05$], and with a tendency in attentional focusing [$F_{(1, 149)}$ = 2.99; $p = 0.09$], self-motivation [$F_{(1, 149)}$ = 3.40; $p = 0.07$], and initiation control [$F_{(1, 149)}$ = 3.68; $p = 0.06$]. Improvements were not significantly different for self-activation [$F_{(1, 149)}$ = 0.32; n.s.], self-relaxation [$F_{(1, 149)}$ = 2.06; n.s.], decision regulation [$F_{(1, 149)}$ = 2.58; $p = 0.11$], coping with failure [$F_{(1, 149)}$ = 0.06; n.s.], goal recollection [$F_{(1, 149)}$ = 1.42; n.s.], forgetfulness prevention [$F_{(1, 149)}$ = 0.88; n.s.], planning skill [$F_{(1, 149)}$ = 0.21; n.s.], and impulse control [$F_{(1, 149)}$ = 0.22; n.s.].

**Table 1.** Changes in volitional competence at posttest (n = 213) and follow-up (n = 153)

| | Changes at posttest | | | | | | |
| | pretest | | posttest | | ANCOVA (p of F)* factor treatment | ES | |
| | VG (n = 106) | SG (n = 107) | VG (n = 106) | SG (n = 107) | | VG | SG |
|---|---|---|---|---|---|---|---|
| Attentional focusing | 45.57 ± 10.45 | 47.38 ± 8.75 | 53.12 ± 12.63 | 49.82 ± 9.67 | 0.001 | 0.72 | 0.28 |
| Self-motivation | 42.34 ± 8.62 | 42.20 ± 7.99 | 50.64 ± 10.59 | 45.34 ± 9.59 | 0.000 | 0.96 | 0.39 |
| Emotion regulation | 43.13 ± 7.72 | 44.21 ± 7.18 | 50.68 ± 9.40 | 46.40 ± 8.13 | 0.000 | 0.98 | 0.31 |
| Self-activation | 41.18 ± 11.26 | 46.71 ± 11.07 | 41.95 ± 11.12 | 44.42 ± 11.06 | 0.041 | 0.07 | −0.21 |
| Self-relaxation | 41.96 ± 7.87 | 42.00 ± 7.53 | 50.73 ± 10.00 | 46.82 ± 8.98 | 0.002 | 1.11 | 0.64 |
| Decision regulation | 42.39 ± 7.25 | 44.40 ± 7.82 | 48.41 ± 10.11 | 47.43 ± 9.20 | 0.033 | 0.83 | 0.39 |
| Coping with failure | 41.90 ± 10.62 | 42.99 ± 9.96 | 48.03 ± 12.04 | 47.96 ± 11.10 | 0.489 | 0.58 | 0.50 |
| Goal recollection | 55.29 ± 10.33 | 54.68 ± 10.55 | 55.47 ± 8.37 | 55.81 ± 10.00 | 0.738 | 0.02 | 0.11 |
| Forgetfulness prevention | 56.36 ± 10.15 | 56.06 ± 10.83 | 56.57 ± 8.61 | 57.02 ± 10.20 | 0.456 | 0.02 | 0.09 |
| Planning skill | 53.36 ± 10.35 | 57.08 ± 11.53 | 53.09 ± 11.39 | 54.95 ± 9.90 | 0.057 | −0.03 | −0.18 |
| Impulse control | 48.53 ± 9.45 | 50.22 ± 8.32 | 56.10 ± 9.59 | 54.74 ± 8.55 | 0.089 | 0.80 | 0.54 |
| Initiating control | 49.18 ± 11.51 | 49.87 ± 10.64 | 54.39 ± 11.96 | 52.50 ± 10.96 | 0.030 | 0.45 | 0.25 |

* Covariate pretest was mostly highly significant ($p < 0.001$), except for impulse control at posttest (0.399) and self-relaxation at follow-up (0.549); covariate duration was mostly nonsignificant, except for impulse control (0.000) and initiating control (0.029) at posttest and self-relaxation (0.045) at follow-up. Mean scores ± SD are presented.

**Table 2.** Changes in outcome measures at posttest (n = 213) and follow-up (n = 153)

| | Changes at posttest | | | | | | |
| | pretest | | posttest | | ANCOVA (p of F)* factor treatment | ES | |
| | VG (n = 106) | SG (n = 107) | VG (n = 106) | SG (n = 107) | | VG | SG |
|---|---|---|---|---|---|---|---|
| Depression | 64.73 ± 8.87 | 64.31 ± 8.62 | 54.29 ± 10.46 | 56.82 ± 8.62 | 0.032 | 1.18 | 0.87 |
| Total psychiatric symptomatology | 84.98 ± 17.23 | 80.91 ± 17.05 | 65.70 ± 17.70 | 68.38 ± 15.46 | 0.032 | 1.12 | 0.73 |
| Fatigue | 69.78 ± 13.99 | 69.73 ± 15.59 | 60.56 ± 13.62 | 62.99 ± 13.85 | 0.133 | 0.66 | 0.43 |
| Stomach trouble | 56.95 ± 12.41 | 58.64 ± 15.41 | 52.11 ± 12.19 | 54.56 ± 54.56 | 0.226 | 0.39 | 0.26 |
| Pain | 63.69 ± 12.27 | 63.43 ± 12.37 | 58.27 ± 12.22 | 58.49 ± 12.63 | 0.815 | 0.44 | 0.40 |
| Dyscardia | 60.55 ± 14.21 | 63.79 ± 16.77 | 55.53 ± 13.33 | 57.91 ± 14.58 | 0.731 | 0.35 | 0.35 |
| Total physical complaints | 65.59 ± 11.91 | 66.79 ± 13.28 | 58.22 ± 12.61 | 60.38 ± 12.84 | 0.300 | 0.62 | 0.48 |

* Covariate pretest was always highly significant ($p < 0.001$), covariate duration was always nonsignificant. Mean scores ± SD are presented.

## Changes in Outcome Measures

At posttest, the VG showed significantly greater improvement in depressive symptoms [F(1, 207) = 4.68; p < 0.05] and total psychiatric symptomatology [F(1, 205) = 4.68; p < 0.05; table 2]. Correspondingly, the effect sizes in the VG were very high (depressive symptoms: 1.18; total psychiatric symptomatology: 1.12), in the SG only medium high (depressive symptoms: 0.87; total psychiatric symptomatology: 0.73; fig. 2). Physical complaints were also reduced at posttest, and more in the VG than in the SG (see effect sizes in table 2; e.g. total score 0.62 vs. 0.48; fig. 2), but treatment groups did not differ significantly [e.g., total score: F(1, 207) = 1.08; n.s.].

**Changes at follow-up**

| pretest | | follow-up | | ANCOVA (p of F)* factor treatment | ES | |
|---|---|---|---|---|---|---|
| VG (n = 74) | SG (n = 79) | VG (n = 74) | SG (n = 79) | | VG | SG |
| 47.89 ± 10.54 | 48.04 ± 7.70 | 53.32 ± 11.97 | 50.33 ± 10.82 | 0.086 | 0.52 | 0.30 |
| 43.30 ± 8.87 | 41.89 ± 8.12 | 49.53 ± 10.98 | 45.65 ± 11.52 | 0.067 | 0.70 | 0.46 |
| 44.34 ± 8.33 | 43.75 ± 7.14 | 50.45 ± 9.84 | 47.00 ± 9.09 | 0.042 | 0.73 | 0.46 |
| 41.70 ± 10.67 | 40.20 ± 10.41 | 47.20 ± 9.68 | 45.30 ± 11.90 | 0.571 | 0.52 | 0.49 |
| 42.28 ± 7.55 | 41.49 ± 6.94 | 49.86 ± 10.80 | 47.03 ± 10.78 | 0.153 | 1.00 | 0.80 |
| 43.39 ± 7.17 | 44.95 ± 8.39 | 48.73 ± 10.86 | 46.99 ± 9.75 | 0.111 | 0.74 | 0.24 |
| 42.46 ± 10.29 | 44.87 ± 10.04 | 47.64 ± 12.21 | 48.54 ± 13.03 | 0.805 | 0.50 | 0.37 |
| 55.80 ± 10.77 | 55.90 ± 10.20 | 54.14 ± 8.87 | 55.52 ± 8.39 | 0.235 | −0.15 | −0.04 |
| 55.53 ± 8.75 | 56.04 ± 9.95 | 55.69 ± 9.68 | 57.52 ± 10.55 | 0.351 | 0.02 | 0.15 |
| 54.73 ± 9.60 | 54.16 ± 11.15 | 55.47 ± 10.58 | 54.24 ± 10.55 | 0.647 | 0.08 | 0.01 |
| 49.88 ± 9.73 | 51.91 ± 7.79 | 53.69 ± 9.60 | 53.97 ± 9.96 | 0.640 | 0.39 | 0.26 |
| 50.42 ± 10.20 | 50.82 ± 9.95 | 54.28 ± 10.55 | 51.68 ± 11.27 | 0.057 | 0.38 | 0.09 |

**Changes at follow-up**

| pretest | | follow-up | | ANCOVA (p of F)* factor treatment | ES | |
|---|---|---|---|---|---|---|
| VG (n = 74) | SG (n = 79) | VG (n = 74) | SG (n = 79) | | VG | SG |
| 63.41 ± 8.79 | 64.71 ± 7.94 | 55.91 ± 10.90 | 60.32 ± 12.84 | 0.048 | 0.85 | 0.55 |
| 82.32 ± 18.82 | 80.34 ± 17.86 | 70.73 ± 19.03 | 75.99 ± 20.07 | 0.047 | 0.62 | 0.24 |
| 67.40 ± 14.84 | 70.05 ± 15.96 | 63.82 ± 14.32 | 70.77 ± 15.69 | 0.010 | 0.24 | −0.05 |
| 56.56 ± 12.64 | 57.66 ± 14.91 | 56.08 ± 13.99 | 61.76 ± 16.22 | 0.018 | 0.04 | −0.27 |
| 61.39 ± 11.96 | 62.87 ± 11.56 | 59.36 ± 12.36 | 62.73 ± 13.68 | 0.173 | 0.17 | 0.01 |
| 58.56 ± 12.59 | 64.81 ± 17.44 | 56.70 ± 13.04 | 63.25 ± 16.87 | 0.112 | 0.15 | 0.09 |
| 63.58 ± 11.17 | 66.88 ± 13.17 | 60.90 ± 12.68 | 67.61 ± 15.57 | 0.022 | 0.24 | −0.06 |
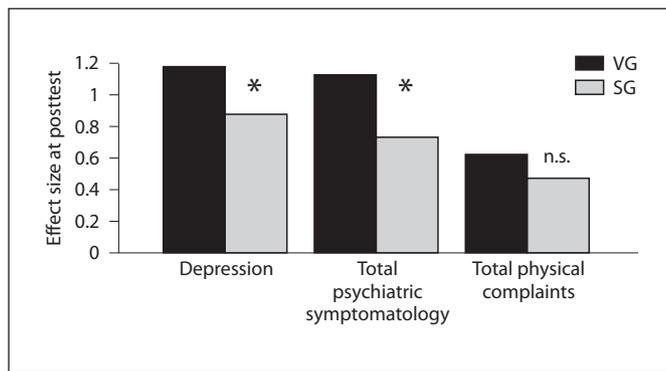
**Fig. 2.** Effect sizes at posttest for depression, total psychiatric symptomatology, and total physical complaints in the VG (n = 74) and SG (n = 79). * p < 0.05.

At 6-month follow-up, the VG showed still significantly greater improvement in depressive symptoms [$F_{(1, 148)} = 3.98$; $p < 0.05$] and total psychiatric symptomatology [$F_{(1, 148)} = 4.02$; $p < 0.05$; table 2]. The effect sizes were smaller than at posttest, but in the VG they were still medium high (depressive symptoms: 0.85; total psychiatric symptomatology: 0.62) as opposed to small effect sizes in the SG (depressive symptoms: 0.55; total psychiatric symptomatology: 0.24). Regarding the physical complaints, the treatment groups were significantly different for fatigue [$F_{(1, 148)} = 6.83$; $p < 0.01$], stomach trouble [$F_{(1, 146)} = 5.77$; $p < 0.05$], and total score [$F_{(1, 145)} = 5.35$; $p < 0.05$]. However, these differences can be put down to the fact that patients of the SG reported more physical complaints at follow-up than at pretest, as can be seen by the effect sizes (fatigue: 0.24 vs. –0.05; stomach trouble: 0.04 vs. –0.27; total score: 0.24 vs. –0.06).

## Discussion

*Strengths and Limitations of the Study*

For the first time, an inpatient volitional group therapy as an adjunct to a standard behavior therapy program was conducted and evaluated. The study was carried out in the natural context of routine clinical practice. The VG and SG were well matched with regard to age, gender, volitional competences, motivational variables, and symptoms. This might be traced back to the inclusion criterion (t value of VCQ < 50). Both groups received the same behavior therapy program by the same therapists. In addition, groups did not differ with regard to the number of returned posttest and follow-up questionnaires.

The study design shows several limitations. First, allocation to study groups was not done by randomization, but by patients' free choice. Randomized controlled trials (RCTs) are regarded as the highest level of evidence for therapies [19, 20]. This great significance of RCTs is increasingly questioned in psychotherapy research [21–23]. Randomly allocating patients to treatments which do not agree with their preferences may influence internal and external validity [24]. Although there is evidence that effect sizes are lower in properly conducted RCTs compared with studies which use no randomization or where randomization is subverted [25], a recent study showed that difference in outcome after randomization vs. allocation by free choice is only small [24]. In addition, our data show that the VG and SG do not differ with regard to motivation, volitional competence, outcome measures, and standard treatment quality. Therefore, we conclude that our results have direct practical relevance for the improvement in the effectiveness of psychotherapy and psychosomatic rehabilitation.

Second, the VG received a higher dose of intervention (12 h) than the SG, which may explain some of the therapeutic but nonspecific effects of the volitional intervention. Two arguments may weaken this problem. (a) The volition group therapy took place in the afternoon when optional therapeutic and leisure programs were offered by the clinic. We can assume that most SG participants attended this noncontrolled form of nonspecific intervention of similar dosage as the volitional training. (b) Improvement in the SG with an alternative training would not question the efficacy of the volitional training, but merely prove the efficacy of the alternative training.

Third, the VG constitutes 18.59% of the whole sample (121 of 651). Therefore, this study gives only evidence for the positive effect of the volitional intervention in patients with initially low volitional competence and high motivation to participate. This group represents people most likely to accept volitional therapy in routine clinical practice. Further research is necessary in order to generalize the results.

*Discussion of the Results*

Most volitional competences of the self-regulation mode improved more strongly in patients in the VG than in patients in the SG. Most self-control competences improved in both groups to a similar extent. This is not surprising, because self-regulation proved to be more important than self-control in psychotherapy [26]. At follow-up, the superiority of the VG remained only for emotion

regulation and, to a smaller extent, for attentional focusing, self-motivation, and initiation control.

While the volition therapy is effective in improving volitional competence, volition also improved after the standard therapy, but to a much smaller extent. This replicates previous findings that volition improved during behavior therapy without special volitional fostering [13, 14].

Our most important finding is that greater volitional improvements went along with better rehabilitation outcome. Depressive symptoms declined in the VG significantly more than in the SG (effect size 1.18 vs. 0.87), as well as total psychiatric symptomatology (1.12 vs. 0.73), but not physical complaints. Some of the therapeutic effects of the volitional training remained at follow-up. Note that the effect size in the SG had the same magnitude as in other studies in psychosomatic rehabilitation [2, 4]. Thus, we can conclude that our volition group therapy can increase effect sizes in a behavior medicine program from good to very good.

Why could no effect of volition therapy on physical complaints be observed at posttest? The interventions of the volition therapy contain no specific physical exercises and, thus, can only improve the physical symptoms through indirect ways. A patient who can motivate himself for exercise, regulate hindering emotions, and focus his attention on activities, will become physically fitter than a control person in the long term. However, at 6-month follow-up differences in some physical variables between treatment groups could be found. In both groups, physical complaints increased from posttest to follow-up. One might suspect that after a short period of time (6 months) complaints return to baseline level, and after 1–2 years reduce significantly [4].

## Conclusions

The problem with older concepts of will was that they were too global, e.g. in the sense of 'weakness of will'. By differentiating the will in several volitional competences [6, 7], having suitable diagnostic tests [6] and therapeutic interventions [15], as demonstrated in this study, the disturbed loci of the mental system can be identified and adequately treated. The manual of the volition therapy [15] contains exercises and worksheets which not only can be used in group setting, but also in psychotherapy with individuals. Further research should also investigate its usefulness as an adjunct to outpatient psychotherapy [27]. The results call for a modification of disorder-related therapy programs with greater consideration for volitional competences.

## Acknowledgement

## References

1 Lambert MJ (ed): Bergin and Garfield's Handbook of Psychotherapy and Behavior Change, ed 5. New York, Wiley, 2004.
2 Grawe K: Psychological Therapy. Cambridge, Hogrefe & Huber, 2002.
3 Lamprecht F: Psychosomatic rehabilitation: a 'must' in secondary health care; in VDR (ed): Medical Rehabilitation in Germany – Experiences and Development. Bad Homburg, WDV, 2002.
4 Schmidt J, Nübling R, Steffanowski A, Lichtenberg S, Wittmann WW: Assessment of the outcome quality of inpatient psychosomatic rehabilitation: a comparison between different strategies of evaluation and the development of new instruments of measurement; in Jäckel WH, Bengel J, Herdt J (eds): Research in Rehabilitation. Results from a Research Network in Southwest Germany. Stuttgart, Thieme, 2005.
5 Kuhl J: A theory of self-regulation: action versus state orientation, self-discrimination, and some applications. Appl Psychol Int Rev 1992;41:97–129.
6 Kuhl J, Fuhrmann A: Decomposing self-regulation and self-control: the volitional components inventory; in Heckhausen J, Dweck CS (eds): Motivation and Self-Regulation across the Life Span. Cambridge, Cambridge University Press, 1998, pp 15–49.
7 Kuhl J: The volitional basis of Personality Systems Interaction Theory: applications in learning and treatment contexts. Int J Educ Res 2000;33:665–705.
8 Beckmann J, Kellmann M: Self-regulation and recovery: approaching an understanding of the process of recovery from stress. Psychol Rep 2004;95:1135–1153.
9 Tangney JP, Baumeister RF, Boone AL: High self-control predicts good adjustment, less pathology, better grades, and interpersonal success. J Pers 2004;72:271–322.
10 Luszczynska A, Diehl M, Gutiérrez Doña B, Kuusinen P, Schwarzer R: Measuring one component of dispositional self-regulation: attention control in goal pursuit. Pers Individ Dif 2004;37:555–566.
11 Rholes WS, Michas L, Shroff J: Action control as a vulnerability factor in dysphoria. Cognit Ther Res 1989;13:263–274.
12 Hautzinger M: Action control in the context of psychopathological disorders; in Kuhl J, Beckmann J (eds): Volition and Personality: Action versus State Orientation. Göttingen, Hogrefe, 1994.
13 Forstmeier S: Training of Will. Improving Volitional Competences in Psychotherapy and Psychosomatic Rehabilitation (in German). Berlin, WiKu, 2005.
14 Hartung J, Schulte D: Action and state orientation during therapy of phobic disorders; in Kuhl J, Beckmann J (eds): Volition and Personality: Action versus State Orientation. Göttingen, Hogrefe, 1994.

15 Forstmeier S, Rüddel H: Manual of the group therapy for enhancing volitional competences (in German). Bad Kreuznach, Matthias Ess, 2002.

16 Klaghofer R, Brähler E: Construction and test-statistical examination of a short form of the SCL-90-R (in German). Z Klin Psychol Psychiatr Psychother 2001;49:115–124.

17 Radloff LS: The CES-D scale: a self-report depression scale for research in the general population. Appl Psychol Meas 1977;3:385–401.

18 Brähler E, Scheer JW: Giessen Subjective Complaints List (in German). Bern, Huber, 1995.

19 Task Force on Promotion and Dissemination of Psychological Procedures: Training in and dissemination of empirically validated psychological treatments: report and recommendations. Clin Psychol 1995;48:3–23.

20 Chambless DL, Hollon SD: Defining empirically supported therapies. J Consult Clin Psychol 1998;66:7–18.

21 Beutler LE: Identifying empirically supported treatments: what if we didn't? J Consult Clin Psychol 1998;66:113–120.

22 Seligman ME: The effectiveness of psychotherapy: the consumer reports study. Am Psychol 1995;50:965–974.

23 Persons JB, Silberschatz G: Are results of randomized trials useful to psychotherapists? J Consult Clin Psychol 1998;66:126–135.

24 King M, Nazareth I, Lampe F, Bower P, Chandler M, Morou M, Sibbald B, Lai R: Impact of participant and physician intervention preferences on randomized trials: a systematic review. JAMA 2005;293:1089–1099.

25 Schulz KF: Subverting randomization in controlled trials. JAMA 1995;274:1456–1458.

26 Forstmeier S, Rüddel H: On the superiority of self-regulation over self-control in psychotherapy and psychosomatic rehabilitation. Verhaltenstherapie 2005;15:158–166.

27 Weiss M, Nordlie JW, Siegel EP: Mindfulness-based stress reduction as an adjunct to outpatient psychotherapy. Psychother Psychosom 2005;74:108–112.

# Addendum

In the list of reviewers published in issue 76/1/07, the name of Dr. Franco Benazzi (Forli), who provided valuable assessments for the journal during 2006, was erroneously omitted. The editor apologizes for this mistake.