In-patient, short-term group psychotherapy – a therapeutic option for Bundeswehr soldiers?

Stationäre Kurzgruppenpsychotherapie – eine therapeutische Option für Bundeswehrsoldaten?

Abstract

Objective: This study is to assess the efficacy of short-term group psychotherapy rooted in depth psychology for Bundeswehr soldiers suffering from depressive, neurotic, stress, or personality disorders.

Method: 103 participants in the in-patient, closed group setting were evaluated prospectively and compared with a non-randomized waitlisted control group.

Results: In all relevant SCL-90-R (Symptom-Check-List-90) and MMPI-K (Minnesota-Multiphasic-Personality-Inventory short-form) scales therapy resulted in significant improvements as compared with the initial values. The control group did not show any significant changes, the therapy group was significantly superior to the control group in the scales of MMPI-K and the GSI-Scale of the SCL-90-R. For soldiers with a stress-reactive disorder (F43), no differences in efficacy could be identified compared with the other diagnosis groups.

Conclusion: The results were considered to indicate that in-patient, short-term group psychotherapy may, in combination with additional setting components, be helpful in improving psychological symptoms in German soldiers. The indication range of group therapy offered to Bundeswehr soldiers should be expanded to also include primary prophylaxis and the treatment of mental-health problems following deployments abroad, if applicable.

Keywords: Bundeswehr soldiers, short-term group psychotherapy, efficacy, stress-reactive disorders

Zusammenfassung

Zielsetzung: In der vorliegenden Untersuchung wird die Wirksamkeit einer tiefenpsychologisch fundierten Kurzgruppenpsychotherapie bei Bundeswehrsoldaten mit depressiven, neurotischen, Belastungs- und Persönlichkeitsstörungen überprüft.

Methode: Es wurden 103 Teilnehmer an dem stationären geschlossenen Gruppensetting prospektiv evaluiert und mit einer nicht-randomisierten Warteliste-Kontrollgruppe verglichen.

Ergebnisse: In allen relevanten Skalen der Symptom-Check-List-90 (SCL-90-R) und des Minnesota-Multiphasic-Personality-Inventory (Kurzform) (MMPI-K) kam es nach Therapie zu signifikanten Verbesserungen gegenüber dem Ausgangswert. Die Kontrollgruppe zeigte keine signifikanten Veränderungen und war der Therapiegruppe in den o.g. Skalen des MMPI-K sowie der GSI-Skala der SCL-90-R signifikant unterlegen. Bei Soldaten mit einer belastungsreaktiven Erkrankung (F43) waren keine Wirksamkeitsunterschiede zu den anderen Diagnosegruppen feststellbar.

Fazit: Die Ergebnisse wurden als Hinweis gewertet, dass stationäre Kurzgruppenpsychotherapie im Zusammenwirken mit komplementären Setting-Komponenten bei der Reduktion psychischer Symptomatik von Soldaten hilfreich sein könnte. Der Indikationsbereich gruppentherapeu-
tischer Angebote für Bundeswehrsoldaten sollte ausgeweitet werden, ggf. auch auf Primärprophylaxe und Therapie psychischer Störungen nach Auslandseinsätzen.

Schlüsselwörter: Bundeswehrsoldaten, Kurzgruppenpsychotherapie, Wirksamkeit, belastungsreaktive Erkrankungen

Introduction

Psychiatry in the Bundeswehr has been continuously subject to change since the early 1990s. Deployments abroad have increasingly become an aspect of a soldier’s professional life, and it is quite common now for a soldier to be deployed outside Germany for four to six months every two years. By now, approx. 200,000 German Bundeswehr soldiers have taken part in missions abroad. Such deployments entail a large variety of stresses and strains: for one thing, the soldiers are exposed to the stressors of the mission itself. That means that they have to adjust to a completely unfamiliar cultural environment and cope with a heavy workload when performing their tasks, whilst being increasingly confronted with traumatic situations. This is, among others, reflected by an increase in psycho-reactive illnesses such as adjustment disorders or stress reactions that are treated in the psychiatric wards of the Bundeswehr hospitals [1].

For another thing, strain is put on the family and social environment, too. First of all, a member of the family is not there and in potential danger, which is a scaring experience. But quite frequently, the readjustment to family life upon his/her return may be a problematic process as well. Studies conducted in other armed forces indicate that there is an interrelation between the formation of psychiatric symptoms in soldiers and their social network. Vietnam-era veterans, for example, have clearly shown that personnel returning from prolonged military deployments often find it hard to readjust to their social environment and may become a burden due to aggressiveness, isolation, maladjusted behavior or the development of addictions [2], [3], [4].

Such experiences have increasingly raised awareness of the importance of group therapy in the psychotherapeutic treatment of soldiers [4], [5]. Such approach helps to better understand the pathological interaction patterns described above and to positively change them.

In the last few years, a number of treatment approaches rooted in behavior therapy, depth psychology, and eclectic therapy forms have been evaluated, that were able to significantly improve the prognosis for a variety of psychiatric disorders of soldiers, also including posttraumatic stress disorder [5], [6], [7], [8], [9], [10].

In the development of group psychotherapeutic treatment to be offered to Bundeswehr soldiers, several problematic issues had to be taken into account: the increasing displacement of units in the wake of the reduction of the Bundeswehr resulted for the Bundeswehr hospitals in “catchment areas” of locally several hundred kilometers, so that out-patient treatment was only practicable for a small number of patients. Therefore it was first discussed to have group psychotherapeutic treatment only conducted in civilian therapeutic facilities. This was, however, in conflict with the wish frequently expressed by soldiers, i.e. to be treated by therapists having gained experiences in the military living and working environment, including experiences in deployments abroad, in particular. All these considerations led to in-patient group psychotherapy being regarded as a feasible option.

Choosing an appropriate procedure required to take into account further particular aspects of the military profession: for one thing, the therapeutic handling of the above-mentioned extraordinary horizon of experiences gained in deployments abroad, but also the limited time resources of the patients who virtually all come to therapy while still in active duty and who are to be discharged fit for work again.

Due to these requirements, it was necessary to limit potentially developing regression processes in the groups and rather work on problems in the here and now. In addition, the group therapist was to be given the opportunity to actively get involved in the group process and flexibly adjust to changing group-dynamic situations and thematic constellations, e.g. material from mission-related experiences (without risking to confront with traumatic material). The therapeutic process was also to allow for work on the transference moment concerning the association to a hierarchically structured form of organization [11], [12]. That is why it was decided to opt for in-patient, short-term group psychotherapy [13], [14], whose contents and conception was to be based on group psychotherapy rooted in depth psychology in accordance with the Göttingen Model (Model B) [15].

In a pilot project initiated in 1991, this form of therapy was first established in the Berlin Bundeswehr Hospital and has been administered several times a year ever since.

Evaluation of the project was focused on the following questions:

- Are there any positive changes in the formation of symptoms in the participants, i.e. can in-patient, short-term psychotherapy rooted in depth psychology be sufficiently used for the treatment of soldiers?
- If so, how can efficacy be explained, considering the specific characteristics of military training and socialization forms as well as the range of tasks to be accomplished by military personnel?

Methodology

Patients were referred to the therapy by their attending doctors (“unit surgeons”) by psychiatry specialists or by
previous out-patient or in-patient contacts with a psychiatric unit in an army hospital. Prior to the patient’s admission, a minimum of two diagnostic and preparatory interviews were conducted, and the indication for group psychotherapy was identified. The participants’ diagnosis and their level of social functionality were determined in a non-structured clinical interview according to ICD-10. The following patients were admitted: patients suffering from affective disorders (F 32-34), neurotic, stress, and somatoform disorders (F 40-48) and personality and behavioral disorders (F 60-69), mainly manifesting in relationship conflicts in the private and professional environment, disturbed self-esteem and/or aggressive inhibitions.

Patients suffering from dementia syndromes, primary addictive disorders, bipolar and manic affective as well as schizophrenic and delusional disorders were not admitted to the therapy project.

The patients were assigned either to a therapy group or a waitlisted control group on the basis of the available therapy vacancies and the preferences of the patients as to the therapy dates (Figure 1). There was no randomization. Following the diagnostic interviews, the members of the control group did not take part in any other in- or out-patient psychotherapy for an observation period of at least six weeks. If their motivation persisted, they had the option, however, to participate in group psychotherapy later, without a second evaluation.

Before the therapy started (usually during the preparatory interviews), the patients/control group members were tested with the SCL-90-R as well as the MMPI-K [16], [17]. These tests were part of the hospital’s routine quality assurance program and they were administered again upon completion of the therapy. Therapeutic changes were considered as the differences of the T-values of the start (T1) value and the end (T2) value of the individual test scales of the two tests (T1 minus T2). Statistical evaluation was performed post-hoc on an anonymized dataset of the routine data. After discussion with the institution’s ethics committee, no written informed consent was considered necessary for these analyses. The evaluation was conducted as follows: first, separate evaluation by mANOVA of the significance level of the T1-minus-T2 differences in the therapy group and in the control group following testing of the normal distribution, and second, direct comparison of the differences between the groups using a mANOVA to test the effect over all scales, followed by t-tests resp. Mann-Whitney-U-Tests for the individual scales. Due to the insufficient number of SCL-90-R testings available for evaluation in the control group, only the S-GSI scale corresponding to a global value of symptom severity was taken into account in that group.

The mean time interval between the initial testing and the final testing was 65 days in the therapy group and 61 days in the control group (difference not significant). Any patients whose validity scales in the MMPI-K limited the significance (n=10) were not considered in the evaluation (Figure 1).

For evaluation purposes, the therapy group was divided into two sub-groups: one group included all soldiers suffering from stress-related disorder as the primary or a secondary diagnosis (F43.0, F43.1, F43.2 in accordance with ICD-10) (n=31). The causative stressors included experiences made during deployments abroad, but also serious incidents at home, both in the private and professional environments. The comparison group included patients who had not been diagnosed with such disorders (n=74). By means of a mANOVA the differences T1 minus T2 (see above) between the group with the stress-related disorders and the group not suffering from such disorders were statistically compared with each other.

The in-patient therapy took place as a closed group with 10 to 12 participants each (all male) over a period of five weeks. Group sessions of 90 minutes each were held five times a week. They were conducted by a group therapist trained in group psychotherapy rooted in depth psychology and a co-therapist and were supervised on a regular basis (the data was not evaluated by one of the therapists).

Implementation of the group therapy component of the in-patient setting was oriented on the principles of in-patient, short-term group psychotherapy [13], [14], and its contents were in line with group psychotherapy rooted in depth psychology (Göttingen Model) [15].

Accordingly, the therapist took on a rather active and structuring role in the group process. Free interaction of the group members was also encouraged, though, and was then interpreted according to the group-process. The therapeutic focus was on improving the affective capacity of expressing oneself in family and professional conflicts, particularly in view of the (possibly verbal-cathartic) reduction of aggressive inhibitions through the interaction with the other members of the group. In order to improve self-assessment of the participants, they were asked to provide unstructured feedback in writing every day, stating how they perceived the therapeutic process both with regard to their own position and that of their co-patients in the group.

![Figure 1: Distribution of patients to study and control group (therapy (n=103): therapy group, control capacity (n=38): not included in therapy group due to lack of capacity, control motiv. (n=2): not included due to lack of motivation for group psychotherapy, not valid (n=10): not valid MMPI-K, drop-out (n=12): number of not completed therapies)](image)
With the interventions of the therapist, the concept also thematically provided for the psycho-dynamic handling of the guidelines to be followed in the role of a soldier and, if required, of stressful personal experiences (with the exception, however, of the confrontation with traumatic incidents; the severity of their impacts was to have been moderated or at least stabilized at the beginning of the group therapy, and any trauma-specific elements of the patient’s treatment was to have been finished).

The group sessions were supplemented by ergotherapeutic projective individual work on the issues dealt with in the group process (three times a week, 90 minutes each, total 15 sessions) and concluding group work that was to give an overall picture of the group and the group process (25 sessions of 45 minutes).

90 minutes of concentrative movement therapy every day were also to reflect the group dynamics in a non-verbal way (total 25 sessions). All together the participants received 90 therapeutic sessions during the treatment.

Additional personal consultation was only provided for in the event of crises that could not be dealt with in the group context or if there was the risk of a patient breaking off from therapy.

Results

In the period from 1999 to 2005 a total of 103 male patients underwent the in-patient, short-term group psychotherapy described above and were considered in the evaluation (pre- and post-therapy tests with MMPI-K were available for n=96-98 patients (numbers differing in individual scales), for SCL-90-R the number of patients was n=92). The average age was 37.2 years (for the distribution of the age groups, see Figure 2). Patients under 20 and over 60 years of age did not participate.

23% (n=24) of the patients had been diagnosed with some kind of depressive disorder, 66% (n=68) with neurotic, stress, and somatoform disorders, 11% (n=11) with personality disorders. As regards stress-related disorders, three participants suffered from post-traumatic stress disorder, three others from an acute stress reaction in their case history, and 24 from adjustment disorder.

When determining the average values in the MMPI-K prior to the therapy, the following scales emerged particularly strongly: “conversion hysteria” with a mean T-value of 69.5 (SD±10.3), depression with a T-value of 66.6 (SD±9.3), and “psychasthenia” with 65.9 (SD±10.4). In SCL-90-R, the following scales were raised most distinctly on the average: “depressivity” with a T-value of 65.8 (SD±12.8), “anxiety” with 64.4 (SD±11.5), “somatization” with 61.6 (SD±11.9), and “compulsivity” with 61.4 (SD±11.0).

For 66% (n=68) of the patients, one or more comorbid diagnoses from the field of psychiatric disorders were made. 72% (n=74) of the patients were living in a steady partnership at the time of the therapy.

The drop-out rate of the therapy group was n=12 (it was not possible to identify any particularities in the diagnostic or social structure of these patients).

The Kolmogorov-Smirnov test rejected the hypothesis of normal distribution only for the scales “Hostility” and “Phobia” of the SCL-90-R. Therefore it was decided to generally use parametric tests, but to check results for these two individual scales non-parametrically.

Compared with the values identified before the therapy, the tests after the therapy showed significant improvements over all scales of the MMPI-K (Pillai trace = 0,671, F(10,85)=17,317, p<0,001) and in the individual scales (except for MF (masculinity/feminity) and MA (hypomania)), as well as over all scales of the SCL-90-R (Pillai trace = 0,505, F(9,83)=9,401, p<0,001) and in the individual scales (Table 1 and Table 2). In six scales of the MMPI-K and in seven scales of the SCL-90-R, the means of the T-values developed from a pathological or borderline pathological range to a range without pathological findings.

As to the differences of all scales of MMPI-K and SCL-90-R, there were no significant differences between the subgroup of therapy participants with a diagnosis from the area of F 43 and the subgroup of participants not diagnosed with such disorder, neither globally (MMPI-K: Pillai trace = 0,110, F(10,84)=1,042, p=0,416; SCL-90-R: Pillai trace = 0,124, F(9,82)=1,288, p=0,256) nor individually after correction for multiple testing.

In the control group n=37 patients were examined twice with the MMPI-K and n=9 patients with the SCL-90-R. There were no significant changes as compared with the initial value (MMPI-K: Pillai trace = 0,368, F(10,27)=1,569, p=0,170; S-GSI of SCL-90-R: t(8)=0,658, p=0,529). Scales PD, MF and MA of the MMPI-K tended even to deteriorate. After the therapy/observation period and in direct comparison, the therapy group showed significantly higher ameliorations (the difference of the
Table 1: Means of the T-values of the MMPI-K scales before and after in-patient therapy, and standard deviation of the difference as well as significance level of the difference (Scales: HS=Hypochondria; D=Depression; HY=Hysteria; PD=Psychopathic Deviation; MF=Masculinity Feminity; PA=Paranoia; SC=Schizophrenia; MA=Hypomania; SI=Social Introversion)

| Scale → | HS  | D   | HY  | PD  | MF   | PA  | PT  | SC  | MA  | SI  |
|---------|-----|-----|-----|-----|------|-----|-----|-----|-----|-----|
| Before therapy (SD= ) | 65.8 | 66.7 | 69.6 | 60.9 | 52.1 | 55.5 | 66.3 | 59.5 | 51.9 | 60.7 |
| After therapy (SD= ) | 55.5 | 53.6 | 56.6 | 55.9 | 52.2 | 49.1 | 57.7 | 54.4 | 52.5 | 54.8 |
| Difference (SD= ) | 14.0 | 13.1 | 11.3 | 7.4  | 8.4  | 6.7  | 8.6  | 5.1  | 7.1  | 10.5 |
| Difference p< | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 |

Table 2: Means of the T-values of the SCL-90-R scales before and after in-patient therapy, and standard deviation of the difference as well as significance level of the difference (Scales: SOM=Somatisation; O-C=Obsessive-Compulsive; I-S=Insecurity-Sensitivity; DEP=Depression; ANX=Anxiety; HOS=Hostility; PHOB=Phobia; PAR=Paranoia; PSY=Psychopathy; GSI=Global Severity Index)

| Scale → | SOM  | O-C  | I-S  | DEP  | ANX  | HOS  | PHOB | PAR  | PSY  | GSI  |
|---------|------|------|------|------|------|------|------|------|------|------|
| Before therapy (SD= ) | 61.7 | 61.3 | 61.1 | 66  | 64.4 | 58.9 | 59.8 | 59.3 | 61.6 | 65.2 |
| After therapy (SD= ) | 52.6 | 50.3 | 54.8 | 55.4 | 56.5 | 53.5 | 52.8 | 52.0 | 53.1 | 53.2 |
| Difference (SD= ) | 13.3 | 12.5 | 12.8 | 14.4 | 12.2 | 10.8 | 13.1 | 13.2 | 11.6 | 13.1 |
| Difference p< | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 |

mean of the T-value “before minus after”) than the control group in the MMPI-K globally (Pillai trace = 0.236, F(10,121)=3,729, p<0.001) and in all scales (except for MF and MA) as well as in scale S-GSI of the SCL-90-R (t(99)=2.048, p=0.043).

With 34.1 years, the average age of the control group (n=40) was tendentially, but not significantly below that of the therapy group. No relevant differences were identified with regard to the professional status, comorbidity, diagnosis distribution, and partnership. The initial values of the therapy group and the control group in the scales of the MMPI-K and the SCL-90-R differed in scales HS and PT of the MMPI-K as well as in scale “somatization” of the SCL-90 (each significantly lower in the control group). As to the other scales, there were no significant differences.

Discussion

The purpose of this study was to evaluate in-patient, short-term group psychotherapy based on depth psychology for Bundeswehr soldiers. This therapy was conducted in a closed group over a period of five weeks and embedded into a multi-modal concept. It led to significant improvements in all SCL-90-R scales and most MMPI-K scales and was significantly superior to the changes in the control group (the two MMPI-K scales that did not change significantly (MF and MA) had already been on a low and non-pathological average level anyway when tested prior to the therapy).

These results are in agreement with numerous studies conducted in the past years and documenting the efficacy of in-patient group psychotherapy and short-term group psychotherapy in different areas of indication [18], [19], [20]. In military patient collectives, too, it was possible to achieve positive changes by taking depth psychological, eclectic, or interactive approaches [6], [7], [8]. Nevertheless it is considered to be of clinical relevance to also verify the efficacy for Bundeswehr soldiers: Bednar and Kaul, for example, point out that the effects of group psychotherapy strongly depend on the therapeutic environment, so that efficacy of a group psychotherapeutic approach may considerably differ depending on the general outline conditions and on the patient groups involved [21]. Such distinctive features may also be identified for Bundeswehr soldiers. E.g. the high psychosocial homogeneity of the patients has to be emphasized: all participants were male and relatively young (average age:
37.2 years). In a comparable civilian patient collective, the average age was 43 years [22]. In addition, the patients came from a homogeneous work environment and had several years of work experience in the Bundeswehr [23]. These common characteristics may have been important for the successful treatment of patients with different psychiatric symptoms in mixed groups with a low dropout rate.

They may have had such a positive influence as they strengthened group cohesiveness which has proved to be of major importance in many group settings [20], [24]. Soldiers may be assumed to be susceptible to this therapeutic factor, since group cohesiveness in stressful situations is an essential training concept that is imparted quite early in the military socialization process. It also plays an important role in deployments abroad as it contributes to the stability of the soldiers.

In maturation, especially of young people (27.3% of the soldiers attended to were less than 30 years of age), the effective factors “interpersonal learning”, “imitative behavior”, and “development of social manners” may also be of significance [25]. They include the possibility of further developing one’s personality through identification, modeling of relationship patterns and practicing of behavior patterns that young people often have not yet fully developed when entering military service [11].

In psychotherapy for Bundeswehr soldiers, the treatment of mental-health problems caused by extreme stress takes on an increasingly important role. In the group of patients studied here, the percentage of (at least comorbid) stress-related disorders was 30.1%, with only a minor part of them having been caused by deployments abroad, though (therefore not differentiated here in detail). So far the number of military personnel psychologically stressed by deployments abroad is relatively small. Therefore, the Bundeswehr hospitals do not yet offer separate therapy groups for such patients. Still, in this study there is evidence that group psychotherapy could have an equal efficacy on stress-related disorders as on other psychiatric disease.

Studies on group psychotherapy for traumatized soldiers of other armed forces have also shown that it significantly assists a therapeutic overall concept [7], [8], [9], [26]. The efficacy of a therapeutic group experience apparently lies in the restoration of the competency in social relationships that was often substantially disturbed by the traumatic experience. The group conveys a sense of being understood, of mutuality, of security, and of assurance and allows the participants to exchange their views on ethical/moral issues, which is important, especially in view of the misery and violence witnessed during deployments abroad [27], [28], [29].

This therapeutic option is considered to be of particular significance because traumatized soldiers are quite often suffering from long-term persistent, clinically relevant residual symptoms even after trauma therapy [30]. As to the critical appraisal of the methods, it is to be stated that, in in-patient approaches like the one described in this paper, it is possible only to a limited extent to ascribe the therapeutic effects to one of the components (e.g. the group therapy sessions) – a problem arising in psychotherapy studies rather frequently [31].

In addition, the patients were not randomly assigned to the therapy group and the control group, so that it cannot be excluded that patients with a more favorable prognosis were selected for the therapy group. As there were no significant differences between the composition of the two groups and the average gravity of illness prior to the therapy, this methodological reservation will probably have had a minor impact.

Significance of the results was also impaired by the fact that the interpersonal competency for relationship of the patients was assessed on a clinical basis only, taking into consideration individual MMPI scales (e.g. Social Inversion). Compared with the Inventory of Interpersonal Problems (IIP) e.g., these scales are not of the same comprehensive diagnostic value for the assessment of interpersonal behavior.

Moreover, the results only allow to draw conclusions on short-term therapeutic effects for the time being, since long-term catamneses are still in progress.

It may appear unusual to use the MMPI-K in the clinical monitoring of a psychotherapy process, since it is a time-invariant rating tool that is therefore rather unusual for the rating of therapeutic changes [32]. In the original concept of the study, the MMPI-K was included into diagnostic investigation, since numerous clinical evaluations are available [33] and since it was intended to correlate the changes observed in the SCL-90-R with premorbid personality characteristics. The clear and significant changes identified in the post-therapy test therefore came rather as a surprise. They might indicate that the therapeutic approach described here was also efficacious with regard to structural changes in the group of patients being subject of this study. Due to its age structure, this group may be assessed to be particularly sensitive to changes. Comparable to these assumptions, changes in MMPI scales could be found in a longitudinal study of young conscripts before and after Vietnam war experiences [34].

**Conclusion**

The results of this study are considered to indicate that in-patient, short-term group psychotherapy may, in combination with additional setting components, be helpful in improving psychological symptoms in German soldiers. It was possible to take a positive influence on both the symptoms in the SCL-90-R and personality structure deviations in the MMPI-K. Stress-related disorders showed improvements that were comparable to the other treated diagnostic groups.

It should, however, be investigated additionally if the form of therapy described here is similarly suited for all subgroups of Bundeswehr soldiers or if it is to be adapted,
e.g., to younger patients or patients with more serious personality disorders. Future studies should focus on the question if short-term group psychotherapy also yields positive results in homogeneous groups of Bundeswehr soldiers with mental-health problems caused by deployments abroad. Another resultant scope of application might be primary prophylaxis of mental-health problems caused by deployment. It might be an option, for example, to conduct group training of social competences within predeployment training.

Notes

Conflicts of interest

None declared.

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