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RESEARCH ARTICLE

Training of emotional intelligence in depressive inpatients.

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Manuscript Info**Abstract****Manuscript History:**

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Deficits in emotional intelligence are possible factors in provoking and maintaining depressive symptoms in patients with major depressive disorder. Aim of the present study was to explore the effects of a training of emotional intelligence based on the model of Salovey and Mayer on emotional competencies and depressive symptoms in depressive inpatients over six weeks (t_{post}) and twelve months ($t_{\text{follow-up}}$). 171 depressive inpatients (men = 67, women = 104) were randomly assigned to either a training of emotional intelligence together with treatment as usual (TAU) or TAU alone. Participants of the training group showed significant positive changes in their emotional competencies after six weeks of therapy (Cohens $d = 0.43-0.49$); in contrast, they showed no differences in depressive symptomatology compared to the control group. In the follow-up, the patients of the control group declined significantly in their depressive symptoms while the training group maintained or even improved. The acquired emotional competencies may facilitate the use of adaptive coping strategies as well as of social support in stressful situations. In conclusion, this training of emotional intelligence enhances emotional competencies, in the long term it may prevent relapse in depressive episodes.

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Introduction:

Major depressive disorder (MDD) is a prevalent (Kessler et al., 2003), impairing and chronic mental disease. According to international guidelines, MDD is ranked fourth on all mental and physical disorders when considering the DALY-scale. Suicide is among the most negative consequences: The risk for suicide in depressive patients is at least 30 times higher than in the general population. Untreated, the disease often take a chronic course and even after response to treatment, 40-60% of the patients relapse (Thase et al., 1992; Vittengl et al., 2007). Furthermore, only about 50% are among the responders to acute treatment which is defined as considerably symptom improvement (Casacalenda et al., 2002). In addition, Cuijpers et al. (2008; 2010) assumed an overestimation of effects in treating MDD. Therefore many studies try to complement therapeutic interventions to enhance its effectiveness.

Emotional intelligence seems to be one possible strategy to improve treatment interventions of depressive disorders. Salovey and Mayer (1989/1990) defined emotional intelligence as “the ability to monitor one’s own and others’ feelings and emotions, to discriminate among them and to use this information to guide one’s thinking and actions“ (p. 189). Referred to this definition, emotional intelligence compouse of different emotional competencies, which are conscious and can be used to regulate mental activity as well as to influence and manipulate the own life and the life of others.

Out of this definition and view of emotion, Salovey and Mayer (1989/1990) developed the so-called *Four-Branch-Model* of emotional intelligence: Emotional intelligence is divided into four competencies which can be enlarged and learned during life: 1. Identifying and expressing emotions, 2. using emotions, 3. understanding emotions and 4. managing and regulating emotions. To measure emotional intelligence according to the Four-Branch-Model, Mayer et al. (2002) construed a performance-based test (Mayer-Salovey-Caruso-Emotional Intelligence Test MSCEIT) in order to overcome problems of self-rating scales, like reporting in a social desirable manner.

Emotional intelligence and depression:

Biological, psychological and social factors influence the etiology of depressive disorders: Critical life-events like losing an important person, deprivation or acute and chronic stress are the most important and frequently risk factors of depressive symptoms (Lara & Klein, 1999; Hammen, 2005). Furthermore, neurobiological dysregulations and genetic factors are known to influence the vulnerability of depression and they also affect the perception and appraisal of stress: The central-nervous system is overburden by repeated stress exposition and the effects are shown both psychologically (dysfunctional cognitive style; Hammen, 2005) and biologically (higher cortisol blood level; Lee et al., 2002).

According to current studies, emotional intelligence moderates the relationship between stress and depression: Persons high in emotional intelligence show less blood cortisol level in stress situations (u.a. Salovey et al., 2002) as well as more adaptive reactions and behavior (u.a. Ramos et al., 2007). Moreover, persons with high emotional competencies have closer and more satisfactory social relationships and they better notice and use social support to buffer stress, independent of cognitive abilities and personality (DiFabio, 2015). High emotional intelligence also come along with more adaptive emotion regulation strategies (Gross & John, 2003): less rumination and suppression on the one hand and more reappraisal and problem solving strategies on the other hand.

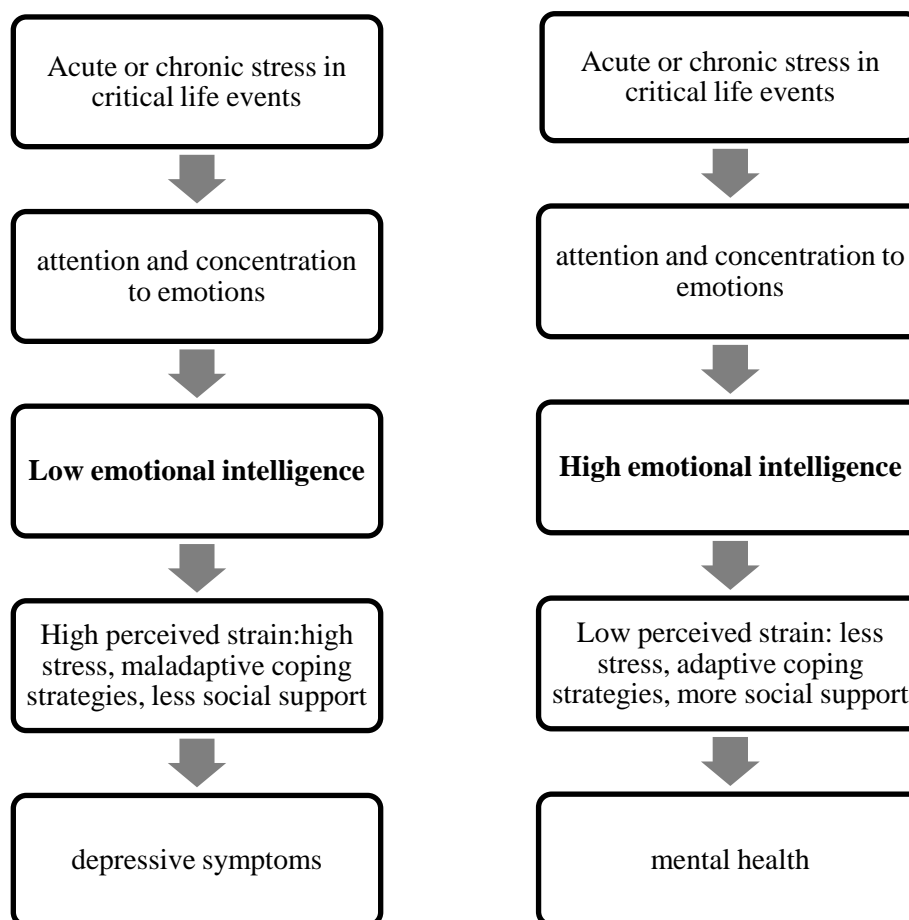


Fig 1. Emotional intelligence and depression

The relationship between depression and emotional intelligence raises the question if a training of emotional competencies in addition to psychotherapy can enhance the effectiveness in the short and long run and if the improvement of emotional intelligence influence the risk of relapse. Berking et al. (2013) examined the effect of a training of emotion regulation (The Affect Regulation Training ART) together with cognitive-behavioral therapy. The group showed an improvement in depressive symptoms and well-being as well as a reduction of negative affect, by integrating strategies of emotion regulation skills. Other trainings of emotional intelligence in a therapeutic context also showed positive outcomes: Jahangard et al. (2012) proved enhancement of depressive symptoms and

emotional competencies after a twelve-week training of inpatients with borderline disorder and comorbid depressive symptoms. Iacoviello et al. (2014) undertook a cognitive-emotional training for depressive patients over an eight-week period and they showed both an improvement of depressive symptoms and of emotional control. In contrast, the patients of the control group, who participated in a control intervention, didn't showed these changes. Interestingly, both groups could improve their performance of attention and working memory. Overall, Nyclicek et al. (2015) examined the influence of integrating emotional intelligence training in psychotherapy and they suggested, that an increase of emotional competencies during therapy may have positive effects on symptom decrease as well as on preservation of treatment results in patients with different diagnosis.

The present study:

Aim of the present study was the evaluation of a training of emotional intelligence to improve emotional competencies and depressive symptoms in depressive inpatients and to maintain these improvements to prevent relapse in the following twelve months. Beside the emotional abilities, it was tried to enhance general understanding of mental states and to support the development of emotional-cognitive competencies.

Material and Methods:

Participants:

171 participants (104 women, 67 men) were recruited from a routine clinical care sample treated between february 2013 and december 2013 for a six-week-period. To be eligible for the study, participants had to reach the following criteria: 1. Current primary or secondary diagnosis of MDD or adjustment disorder with depressive symptoms according to ICD-10; 2. age > 18 years; 3. informed consent; 4. sufficient german language and cognitive skills; 5. no acute psychosis, suicidality, severe OCD or anxiety disorders. In order to maximize external validity and the representativeness of the study, no further exclusion criteria were applied (antidepressant medication; comorbidity). Diagnostic assessment was conducted during the intake interview with either a psychologist or a psychiatrist with Master's degree or above and with training in classification of ICD-10.

Instruments

To measure emotional intelligence, a performance-based test (german version of Level of Emotional Awareness Scale LEAS; Subic-Wrana et al., 2001; original version by Lane et al., 1990) and a self-rating scale (Emotionale Kompetenzfragebogen EKF; Rindermann, 2009) were used:

LEAS:

The LEAS is a well-validated performance-based test to measure alexithymia (inability to experience and name emotions; Sifneos, 1972) and therefore an important part of emotional intelligence. The test based on the five level emotional-developmental theory by Lane and Schwartz (1987). The LEAS is a written test with 20 different conflict scenes (vignettes) between two persons that asked the subjects to describe the emotions firstly of the self-perspective and secondly of the other-perspective. There are two testforms (A and B) with 10 scenes in each case. In dependence on the five level emotional-developmental theory, the answers are rated on a five point likert-scale. The analysis of the answers follow the criteria of Subic-Wrana et al. (2001). Beside the analysis of the self- and the other-rating, we also used a total score (= the higher score of self and other) as well as a sum-score (= self- and other-score together). An empirical study with 364 german students by Subic-Wrana et al. (2001) showed a satisfying internal reliability of both testforms A and B (A: $r = .81$; B: $r = .76$) as well as a sufficient homogeneity. The inter-rater reliability ($r = .84$, $p \leq 0,001$) was also satisfying.

EKF:

The EKF is a reliable self-rating scale to measure emotional intelligence as ability on the basis of four branches: 1. *Recognizing and understanding own emotions EE*, 2. *Recognizing emotions of other EA*, 3. *Regulation and control of own emotions RG* and 4. *Emotional expressivity EX*. These four dimensions produce a total score of emotional competency. Furthermore, it is possible to analyse two other dimensions: 1. *Regulation of emotions of others RA* and 2. *Attitude towards emotions EU*. The reliability measured by homogeneity of the scales is sufficient ($\alpha = .90$) and both the internal validity and the factor structure could be approved.

Depression: The Brief Symptom Inventory (BSI; Derogatis, 1993) measures the perceived strain of physical and mental symptoms with 53 items which are represented in the following nine subscales: *Somatization, Obsessive-Compulsive, Interpersonal Sensitivity, Depression, Anxiety, Hostility, Phobic Anxiety, Paranoid ideation and Psychoticism*. Additionally, there are three global indices to quantify the patients severity of illness. The answers

refer to the last seven days and are analyzed by a five-point rating scale. In the original english version, the reliability, validity and utility have been demonstrated in many studys (Derogatis & Melisaratos, 1983). In contrast, Franke (1997) indicated some deficits in the german version: The internal consistency showed scores between Cronbachs alpha = .39 – .72; the factor-analysis approved five of nine factors. The divergent und convergent validity can be verified only in some correlations. The retest-reliability after one week showed results between $r = .73$ and $.92$, the retest-reliability of the global indices was $r = .92$.

Procedure:

All patients participated voluntarily in the study after receiving informed consent before starting. In the first week of therapy ($t_{prä}$) the patients who were diagnosed as having MDD or adjustment disorder, took part in the testing session and answered the LEAS (part A or B), the EKF and the BSI. They were randomly assigned either to the training group or control group: While the training group participated in the training of emotional intelligence in addition to treatment as usual (TAU), the control group only took part in the TAU. In the 6th and last week of therapy (t_{post}), all participants filled out the LEAS (part A or B), the EKF and the BSI again. After twelve months ($t_{follow-up}$), the participants received the EKF and the BSI the 3rd time by post.

Table 1. Summary of study procedure

$t_{prä}$	Intervention	t_{post}	$t_{follow-up}$
BSI*	Training: Fivesessionsá 90 minutesover a six-weekperiod	BSI	BSI
EKF**		EKF	EKF
LEAS***		LEAS	

*Brief Symptom Inventory, **EmotionaleKompetenzFragebogen, ***Level of Emotional Awareness-Scale

Training of emotional intelligence:

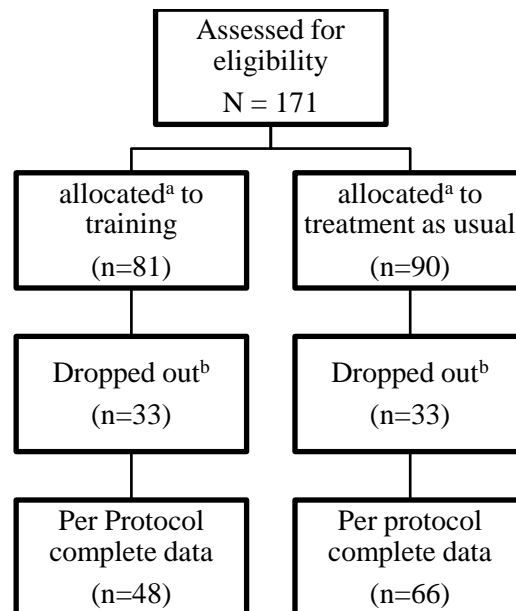
This training of emotional intelligence is based on the Four-Branch-Model of emotional intelligence by Salovey and Mayer (1989/1990). Aim of our training was to improve the emotional competencies in the following branches: 1. Identifying and expressing emotions, 2. using emotions, 3. understanding emotions and 4. managing and regulating emotions. The training consists of five 90-minutes sessions and took place during a six week inpatient hospitalization. To enhance group cohesion, training was designed as a closed group with eight to twelve participants. Every session took place in the same order and the interventions tried to enable emotional involvement.

Table 2. Interventions of the training of emotional intelligence

<p>1. Identifying and expressing emotions:- Psychoeducation: Basic emotions (anxiety, anger, sadness and happiness) and the appropriate needs Mindfulness: Identifying emotions consciously without evaluation</p> <p>2. Managing and regulating emotions:- Emotion regulations skills</p> <p>3. Using emotions:- Cognitive interventions (e.g. Rational-Emotive Therapy by Ellis, 1973).</p>

Data preparation:

All variables were checked for conformity to the assumption of normal distribution, which could be found either in the LEAS and the EKF, while the data of the BSI were not distributed normally. Missing data originated mainly due to missing tests ($t_{prä}$ or t_{post}) as well as participation in the training less than 80% or missing data in the follow-up. Due to a dropout rate of 30%, there was no possibility to deal with missing data (Armijo-Olivo et al., 2009), so an intention to treat-analysis was rejected. Hence, the results (per protocol analysis) are based on data from 114 inpatients participating completely to $t_{prä}$ and t_{post} .



^aRandomization; ^bno significant differences between the groups

Fig 2. Study flow diagram

Results

Preliminary analysis:

Training- and control group were compared with regard to gender, age, level of education, illness severity and chronicity as well as comorbidity. Both group were comparable to all of these variables: gender (U-Test: $z = -.24$; n.s.), level of education (U-Test: $z = -1.52$; n.s.), age (t-test for independent samples: $t(112) = -0.41$; n.s.), severity of depressive symptoms (U-Test: $z = -1.01$; n.s.), chronicity (U-Test: $z = -1.57$; n.s.) and comorbidity (U-Test: $z = -.39$; n.s.), so that differences between the two group may be caused by manipulation of study design. Table 3 gives an overview over the demographic characteristics.

Table 3. Descriptive sample characteristics

Demographic variables	Total (N=171)	TG ¹ (n=81)	CG ² (n=90)
Gender (male)	67 (39%)	36 (44%)	31 (34%)
Age in years ($M \pm SD$)	46.14 \pm 8.57	47.04 \pm 8.23	45.33 \pm 8.83
Level of education (2nd school) ³	89 (52%)	50 (62%)	44 (49%)
Severity of depression ($M \pm SD$)	70.27 \pm 10.65	69.98 \pm 10.23	70.53 \pm 11.07
Chronicity (> 8 years)	69 (40%)	38 (47%)	31 (35%)
Comorbidity	86 (47%)	42 (52%)	44 (49%)

¹training group; ²control group; ³Austrian equivalent of 2nd school = after 9 years of schooling

Hypothesis analysis:

The first hypothesis assumed that the participants of the training group are able to enhance their emotional competencies more than the control group in both the performance-based measure and the self-rating scale over the six weeks of therapy. The hypothesis is based on the general assumption that depressive patients show deficits in emotional intelligence compared to healthy controls and that these deficits are either a releasing or a maintaining factor for MDD. Due to the therapeutic interventions for all participants, it is expected that all participants will enhance their emotional competencies, whereby the improvement of the participants of the training group are assumed to be significantly higher.

Descriptive results:

The descriptive results of the LEAS (Total score) in the whole sample yielded a mean total score of $M = 19.23$ ($SD = 8.22$) in the first measure. The one-sample t-test showed a significant difference between the depressive sample of our study compared to a group of healthy controls in the study of Subic-Wrana et al. (2001) ($t(108) = -13.82$, $p < .001$).

Noticeable in our sample are the low correlations between severity of illness and the total score of the LEAS (Spearman: $r_s(103) = -.09$, n.s.). These results support the assumption that deficits in emotional intelligence not only originate in MDD, but are also possible risk factors in the etiology of depressive symptoms.

In the EKF, our sample reached both in the total score ($M = 91.79$; $SD = 12.88$) and the different subscales, results on average and hence a self-rating comparable with a healthy standard random sample. The correlation between the total score of the EKF and the depressive symptoms was, as expected, moderately negative (Spearman: $r_s(108) = -.46$, $p < .001$), so that persons with more severe depressive symptoms estimated their emotional intelligence more impaired.

Changes in LEAS and EKF from $t_{prä}$ to t_{post}

Between $t_{prä}$ and t_{post} , all participants improved significantly in the LEAS (Total score), the LEAS (Other) and the LEAS (Sum) measured by t-test for independent samples.

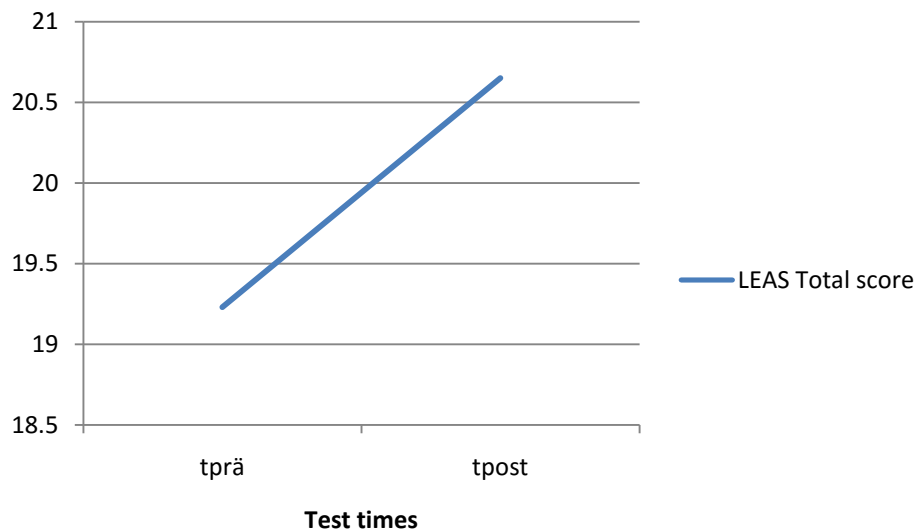


Fig 3. Changes in LEAS (Total score) from $t_{prä}$ to t_{post}

Despite the significant positive changes in the LEAS, it was impossible to establish a development in the emotional-cognitive competencies by Lane and Schwartz (1987; LEAS Total score $_{post}$: $M = 20.65$, $SD = 8.11$) over all participants: There still remained a significant difference between the depressive participants and the healthy control group by Subic-Wrana et al. (2001) (one sample t-test: $t(106) = -12.39$; $p < .001$). Nevertheless, significantly more individuals of the intervention group reached the 3rd step of the emotional-cognitive scale and thereby a meaningfully higher emotional and mental state through training ($t(43) = -2.31$, $p < .05$). A more detailed analysis with the reliable change index (RCI) by Jacobson and Truax (1991) also showed, that compared to the control group, more individuals of the intervention group increased their results on the LEAS Sum (15%) as well as the LEAS Other (15%) in a clinically significant manner ($X^2 = 6.77$, $df = 1$, $p < .01$).

In the EKF, all scales remained on average after therapy.

Table 4. Changes in LEAS and EKF from $t_{prä}$ to t_{post}

Scales	$M_{prä}(SD)$	$M_{post}(SD)$	t-Wert	df	p
LEAS Self	18.57 (8.48)	19.72 (8.13)	-1.78	102	.08
LEAS Other	13.54 (8.48)	16.36 (8.62)*	-4.45	102	<.001
LEAS Total score	19.23 (8.22)	20.65 (8.11)*	-2.38	101	.012
LEAS Sum	32.11 (15.91)	36.08 (15.72)*	-3.76	102	<.001
EE	91.85 (11.45)	96.26 (12.29)*	-4.90	108	<.001
EA	97.06 (13.31)	96.26 (12.29)	1.13	106	.26
RG	94.96 (10.40)	93.17 (8.76)**	2.21	106	.03
EX	93.36 (11.75)	101.58 (5.38)*	-7.18	108	<.001
RA	96.67 (11.95)	97.19 (10.44)	-0.16	108	.88
EU	103.36 (10.59)	100.55 (11.83)**	3.35	107	.001
EKF Total score	91.79 (12.88)	92.98 (10.71)	-0.66	107	.51

*significant positive changes **significant negative changes

Beside the changes in emotional competencies (LEAS) during therapy, the depressive symptoms declined significantly from $t_{prä}$ to t_{post} over all participants (Wilcoxon T-Test: $z = -4.27$; $p < .001$). The depressive symptoms changed from a clinically meaningful to a clinically noticable range, meaning changes not only statistically but also clinically significant ($M_{post} = 66.05$, $SD = 12.65$). After therapy, there was no correlation between illness severity and either the EKF (Spearman: $r_s(108) = .02$, n.s.) nor the LEAS (Spearman: $r_s(101) = -.05$, n.s.), demonstrating that the two branches changed independently during therapy.

Comparison of training- and control group:

Repeated measures ANOVA showed that the training group improved significantly more than the control group in LEAS (Sum) during therapy ($F(1,101) = 4.68$; $p = .033$; $\eta^2 = .044$; Cohens' $d = 0.43$ [CI = 0.01 – 0.75]).

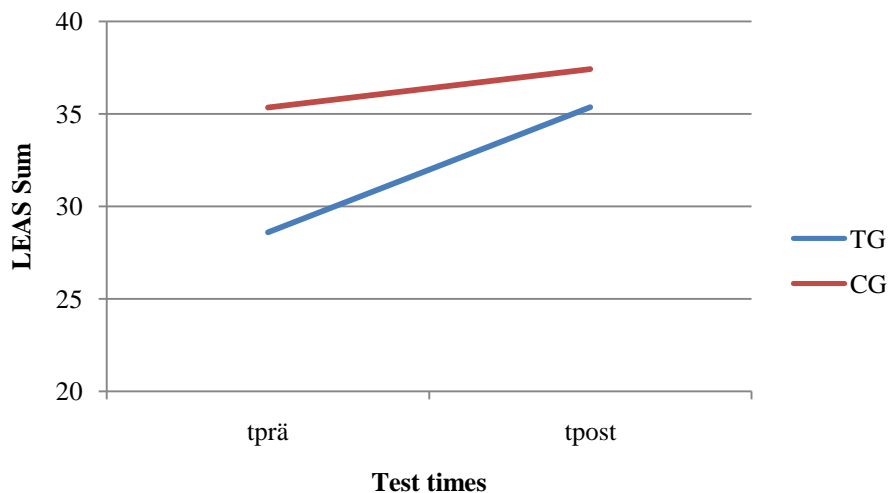


Fig 4. Interaction between training group (TG) and control group (CG) from $t_{prä}$ to t_{post} (LEAS Sum)

Additionally, the training group changed significantly more in the LEAS (Other) than the control group ($F(1,101) = 6.01$; $p = .016$; $\eta^2 = .06$; Cohens' $d = 0.49$ [CI = 0.08 – 0.84]).

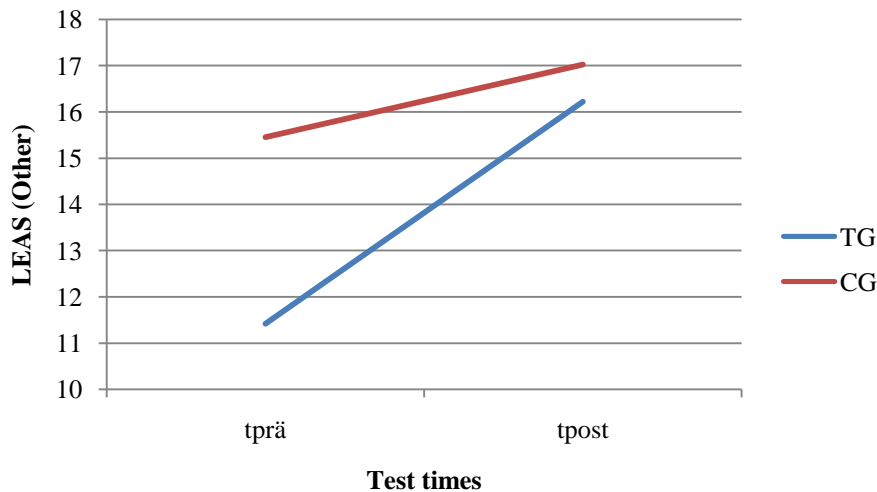


Fig 5. Interaction between training group (TG) and control group (CG) from $t_{prä}$ to t_{post} (LEAS Other)

Both effects can be interpreted as moderately (Cohen, 1988). In contrast to the two variables, there were no differences between the two groups related to either the LEAS (Total score; $F(1,100) = 2.43$; $p = .12$) or the LEAS (Self; $F(1,101) = 1.27$; $p = .26$).

The results of the self-rating measure (EKF Total score: $F(1,106) = 0.03$; $p = .86$) as well as the depressive symptoms ($F(1,107) = 0.19$, n.s.), didn't differ between groups directly after the intervention: Both groups improved equally over the six weeks of therapy. This could be seen as an evidence for emotional intelligence not to be a symptom of depressive disorder again.

Descriptive statistics of the follow-up sample:

78 participants (46%) from the general sample of 171 inpatients took part in follow-up after twelve months. 45 inpatients (26%) were included in the final results because they comply all requirements from $t_{prä}$ and t_{post} .

Overall, 19 (42%) participants were assigned to the training group; 26 (58%) participated in the control group. Mean age in years was $M = 46.44$ ($SD = 8.47$); no group differences could be found (t-test for independent samples: $t(112) = -0.39$; n.s.). Despite the high dropout rate in the follow up (61%), there were no differences between the participants and the dropouts concerning biographical data.

Table 5. Comparison of participants (n_1) with dropouts (n_2) by Mann-Whitney U-Test

Variable	n_1	n_2	Mann-Whitney U	z -Wert	p
Gender	45	69	1315.50	-1.62	.11
Level of education	44	67	1459.00	-0.10	.92
Comorbidity	45	69	1313.50	-1.53	.13
Severity of depression	45	68	1506.50	-0.14	.89
Chronicity	41	64	1220.00	-0.63	.53

Emotional intelligence in the follow-up:

The descriptive results of the self-rating measures showed scores mainly on average after twelve months. There were only two scales, where all participants reached scores below average: *Recognizing emotions of others*: $M = 89.67$; $SD = 15.58$ and *Regulation of emotions of others*: $M = 89.21$; $SD = 9.14$.

There were no differences between training- and control group in follow up. While all participants maintained their perceived emotional competencies in the EKF (Total score) as well as in the EU, five of seven scales were rated significantly worse in $t_{follow-up}$ than in t_{post} over all participants:

- Recognizing and understanding own emotions: $t(43) = 4.55$; $p < .001$
- Recognizing emotions of others: $t(42) = 3.83$; $p = .001$
- Emotional expressivity: $t(43) = 6.95$; $p < .001$

- Regulation of emotions of others: $t(44) = 5.93; p < .001$
- Attitude towards emotions: $t(44) = 2.86; p = .006$

Due to the missing data of the LEAS, the interpretation of these findings is difficult and has to be proven in following studies.

Depressive symptoms in follow-up:

By $t_{\text{follow-up}}$, mean depression severity over all participants was above average ($M = 68.13, SD = 12.23$), as most of the patients estimated their depressive symptoms as clinically meaningful after twelve months. There was no significant difference between the two groups concerning their depressive symptoms, but a clinically interesting trend could be observed:

While the depression of the control participants declined significantly from t_{post} to $t_{\text{follow-up}}$ (Wilcoxon T -Test: $z = 1.98; p < .05; M_{\text{post}} = 63.50 (SD = 13.59); M_{\text{follow-up}} = 67.66 (SD = 11.76)$), the patients of the training group maintained or even improved over time (Wilcoxon T -Test: $z = -.31; n.s. M_{\text{post}} = 69.85 (SD = 12.15); M_{\text{follow-up}} = 68.90 (SD = 13.22)$). Similar to the result of t_{pre} and t_{post} , there were no significant correlations between emotional intelligence and depressive symptoms in follow-up (Spearman: $r_s(34) = -.00; n.s.$).

Discussion:

Aim of the present study was to evaluate a training of emotional intelligence for depressive inpatients. Trainings of emotional intelligence were established in different areas in the last decades: In tradition with the emotional intelligence research, the first trainings were conducted in scholar and occupational settings before they also became more popular in psychotherapy. The large-scaled meta-analysis by Schutte et al. (2013) included trainings of emotional intelligence from all areas and analyzed their empirical procedure and their results. Because of the high-quality methods of four studies, they were included in the final results of the meta-analysis. Overall, the results of these four studies showed a mean effect size of Cohen's $d = 0.46$, so that according to the findings of Schutte et al. (2013), trainings of emotional intelligence showed effect sizes comparable with trainings of positive psychology and mindfulness. In their discussion, Schutte et al. (2013) criticized especially the inconsistency of the methods and the conceptualization, as well as the measure of emotional intelligence, which impeded the comparison of many studies.

The conceptualization of our training, as well as the procedure, tended to avoid the methodological problems found by Schutte et al. (2013): To increase internal validity, our study used a randomized design with a comparable control group receiving treatment as usual. To increase external validity the participants were recruited from a routine clinical care center without considering aspects like gender, age and comorbidity. The present training showed comparable effect sizes ($d = 0.43-0.49$) as the trainings of emotional intelligence summarized by Schutte et al. (2013). In the present case, however, a long-term effect over twelve months on depressive symptomatology was found *in addition* to improved performance on the emotional intelligence measure in depressive inpatients.

The effects (t_{post}) were most notably seen in the general emotional competencies as well as in the identification of emotions in others directly after the training. In the follow-up, the effects could only be found in the total score of the EKF; the LEAS was not used to $t_{\text{follow-up}}$. In contrast to the trainings of Berking et al. (2013) or Jahangard et al. (2012), there were no differences between the training group and the control group related to depressive symptoms directly after the training. This could be due to the duration of the training: The patients received five hours training during six weeks of treatment. Studies showed that depressive symptoms could be reduced in few weeks (Longmore & Worrell, 2007; Hardy et al., 2005) also additive effects can hardly be demonstrated. In psychotherapy to many unspecific effects like the therapist's or the patient's personality or the placebo effect play an important role in the effectiveness of training. Furthermore, it is to be mentioned that the control group was also treated over six weeks and that many patients received antidepressant medication, so that the detection of additive effects would have been surprising. Nonetheless, the mean effect of the training on the emotional competencies could provide an indication for its effectiveness.

In contrast to the results directly after the training, differences in the depressive symptoms could be detected between the training and the control group at follow-up: The participants of the training group could maintain and even improve their depressive symptoms over a twelve months period whereas the control group declined significantly. Importantly, these results suggest that an improvement of emotional competencies through training may prevent relapse to depressive episodes in the following months. These findings coincide with the current literature: Emotional intelligence seems to have a moderating function in handling with stress, as higher emotional

competencies accompany better social relationships and higher perceived social support (DiFabio, 2015), less cortisol metabolism (Salovey et al, 2002), less intrusive thoughts (Ramos et al., 2007) and less rumination (Lanciano et al., 2012). These competencies help to preserve treatment results over a twelve months period.

There are several limitations of the study: Due to the high dropout rate, it is possible that patients quitted participation because of no effects, so that the results are overestimated. Furthermore, there was no recording of psychopharmacological medication during the intervention as well as no recording of psychotherapeutic interventions between t_{post} and $t_{\text{follow-up}}$, thus it cannot be precluded, that these factors influenced the findings. On the basis of the randomized design, however, and the missing differences in demographical characteristics between the intervention group and neither the control group nor the dropouts, it may be that this training of emotional intelligence improves not only emotional competencies but also depressive symptoms as well as prevents relapse in depressive episodes. In this respect, the study adds exploratory knowledge to existing findings and could instigate further research in this direction.

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Conflict of Interest Statement:

The authors declare, that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

Statement:

This study was carried out in accordance with the Rehaklinikfür Seelische Gesundheit. All subjects gave written informed consent in accordance with the Declaration of Helsinki.

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