Everybody has won and all must have prices: combining cognitive-behavioral, humanistic-experiential and psychodynamic approaches to better understand how psychotherapy works

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Von der philosophisch-humanwissenschaftlichen Fakultät der Universität Bern auf Antrag von Prof. Dr. phil. Franz Caspar (Erstgutachter) und Prof. Dr. phil. Martin grosse Holtforth (Zweitgutachter) angenommen.

Bern, den 6.01.19 Die Dekanin: Prof. Dr. Tina Hascher

I dedicate this work to my grandmother Rosemarie Tscherner (□ 2018)
and my friend Meret Sonntag who taught me life lessons
beyond the limits of higher education.

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Since 2016, I am addressing integration in psychotherapy, practically and theoretically, methodologically and conceptually. One question arose that will keep me busy far beyond the completion of my doctoral thesis: How does psychotherapy work? As a child, I remember constantly asking my parents "How does that work?". They patiently searched with me for answers and encouraged me to continue asking questions. At this point I would like to thank them for their incredible support and for the gift of life.

My gratitude also goes to my grandparents, who were always there when I needed them. Losing my grandmother in the summer of 2018 was one of the biggest stressors of my life.

Defense mechanisms represent different strategies for dealing with stressors. In this thesis, I focused on the concept of defenses with the aim of contributing to the answer of the question how psychotherapy works. Especially during the last few months, this

thesis has led me to the use of an above-average number of immature defense mechanisms such as repression, denial and help-rejecting complaining.

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Summary

This dissertation presents four articles as part of the *Improve Project* (project 100019_159425) funded by the Swiss National Science Foundation (SNSF) and granted to Franz Caspar as principal investigator and Thomas Berger and Martin grosse Holtforth as co-applicants. The *Improve Project* is concerned with psychotherapy integration and investigates the effects of combining Bernese cognitive-behavioral therapy (CBT) with elements of emotion-focused therapy (EFT) or aspects of self-regulation theory (SR) in a randomized controlled trial with add-on design. The project falls in the category of assimilative integration, which reflects common integrative practice but lacks empirical support. Previous research and research gaps are presented which the *Improve Project* and this dissertation aim to fill.

Article one of this dissertation presents the study protocol of the *Improve Project*. Article two describes a study examining the therapeutic adherence to the two treatment conditions CBT + EFT and CBT + SR. Article three, a meta-analysis, was conducted to evaluate the current state of research on defense mechanisms in longitudinal studies. Article four presents a study investigating change in defense mechanisms over the course of psychotherapy depending on treatment condition and diagnostic group.

An introduction to the topic of psychotherapy integration is followed by the four articles. On the basis of the presented results, possibilities and limitations of this dissertation are discussed and an outlook for future research in the field of psychotherapy integration is given. Bridging the gap between research and practice may well produce treatments that are rooted in both clinical reality and empirical validation.

Table of contents

1. General introduction……3

1.1 The past 25 years of research on psychotherapy integration.....3

1.2 First generation approaches.....5

1.3 Second generation approaches.....6

1.4 Cognitive-behavioral assimilative integration.....10

1.5 The Improve Project.....11

1.6 Contributing to the Improve Project……...17

2. Scientific articles……20

2.1. Psychotherapy integration under scrutiny: Investigating the impact of integrating emotion-focused components into a CBT-based approach: a study protocol of a randomized controlled trial……..20

2.2. Adherence to new elements in integrative psychotherapies……60

2.3. Comparing Change in Defense Mechanisms in Patients with and without Personality Disorder: A Meta-Analysis of Psychotherapy Outcome Studies…….87

2.4. Comparison and change of defense mechanisms over the course of psychotherapy in patients with depression or anxiety disorder: Evidence from a randomized controlled trial……120

3. General discussion……151

3.1 Summary of this dissertation……151

3.1.1 Article 1……151

3.1.2 Article 2……151

3.1.3 Article 3……152

3.1.4 Article 4……153

3.1.5 Conclusion……154

3.2 An agenda for the next 25 years of psychotherapy integration……155

3.2.1 Harmful effects……..156

3.2.2 Therapist effects……157

3.2.3 Practice-oriented research……157

3.2.4 Training ……....158

3.2.5 Conclusion…….....161

4. References……162

1. General introduction

1.1 The past 25 years of research on psychotherapy integration

From the 1970s onward, interest in findings beyond the boundaries of therapy schools increased. By the 1980s, integration became a rapidly growing and widely respected movement (Castonguay & Goldfried, 1994). Integration is not a specific, operationalized approach, but it subsumes a combination of interventions. Psychotherapy integration refers to a movement of conceptual and clinical rapprochement "which is not only an effort to integrate diverse models and techniques but also an attempt to better understand and improve psychotherapy by considering the perspective of different approaches" (Castonguay & Goldfried, 1994, p. 160). The four most common types of psychotherapy integration according to Norcross (2005) are described in what follows:

(1) *Technical eclecticism* is based on data rather than theoretical considerations. For a specific person with a specific problem, the most promising technique is singled out based on previous data from the most similar case. Practical application rather than theoretical justification is central in technical eclecticism.

(2) *Theoretical integration* unites two or more approaches on a theoretical level. It is more about the creation of a new conceptual framework with elements from different approaches than about combining their methods and techniques. By synthesizing the elements of existing approaches, something new is created that is more than the sum of its parts.

(3) The basis of the *common factor* approach is the conviction that therapeutic success is determined by shared rather than approach-specific factors that differentiate therapy forms. According to McAleavey and Castonguay (2015) the term *common factors* is used to refer to "those elements of psychotherapy that are so widely present in different psychotherapeutic treatments that they may not be considered as being

restricted to one school of psychotherapy" (p. 3). Theoretical interest in the shared processes of different therapeutic approaches was triggered by the observation that many therapists in practice did not limit themselves to the use of interventions prescribed by their original approach. Therapists of different orientations behaved in a similar rather than dissimilar manner (e.g., Solomonov, Kuprian, Zilcha-Mano, Gorman, & Barber, 2016), and thus created more effective and economical therapies by using those factors that are shared by different forms of therapy.

(4) *Assimilative integration* is the incorporation of attitudes, perspectives and techniques from an auxiliary therapy into a therapist's primary, grounding approach (Messer, 1992). It adopts a contextual perspective, proposing that a therapeutic technique can be evaluated only in relation to the larger theory or therapy of which it is a part (Woolfolk, Sass, & Messer, 1988). *Assimilative integration* thus combines the advantages of a single, coherent system with the flexibility that comes from a wider range of techniques. However, when a clinical procedure originally conceptualized and practiced within one therapy is incorporated into another, its conceptual fit with the different theoretical and therapeutic framework and its clinical meaning within the new therapeutic context should be considered and the empirical validity of its efficacy must be established anew (Messer, 2001).

The common denominator of all four forms of integration is that they all seek to improve the effectiveness, efficacy and application of psychotherapy by overcoming the limitations of individual psychotherapeutic approaches (Norcross, 2005). Surveys have shown that integration is widespread in psychotherapeutic practice, with few therapists strictly adhering to only one single treatment approach. In 2005, an integrative attitude was the most common orientation of therapists, closely followed by cognitive therapy and cognitive behavioral therapy (Norcross, 2005). Norcross, Karpiak, and Lister (2005) showed that 50% of integrative therapists in the

US first followed one approach (mostly a cognitive therapy) before integrating aspects of other approaches. This suggests that assimilative integration is a commonly used form of integration by therapists in naturalistic and experimental settings.

For a long period of time, referred to by Norcross (2005) as “ideological cold war” (p. 1), however, it was common for psychotherapists to work exclusively within their own theoretical framework.

1.2 First generation approaches

The question as to which theory best explains the various effects of psychotherapy can be addressed empirically. Hypotheses can be tested and theoretical assumptions about causal relationships can be confirmed or rejected. This characteristic of empirically examining theoretical assumptions is lacking in first-generation psychodynamic, behavioral, or humanistic psychotherapeutic theories (Grawe, 1995) that were based on uncontested assumptions.

By contrast, a scientifically tenable psychotherapeutic theory should be based on empirical findings obtained in accordance with empirical methodology (Grawe, 1999). Empirical testing has shown that different well-established therapeutic approaches indeed produce the desired outcomes with their therapies (Smith, Glass, & Miller, 1980).

Despite substantial theoretical and practical differences, most forms of therapy proved to be equally effective (e.g., Luborsky et al., 2002). The quote from Alice in Wonderland (1936) for this phenomenon, i.e. that "everybody has won, and all must have prizes", became known as the Dodo-bird verdict. However, it could also be shown that no single therapeutic approach was successful in helping all patients and research failed to prove consistent superiority of one approach over others (Grawe, Bernauer, & Donati, 1994).

Essentially three explanations exist for the conception that very different therapeutic approaches all lead to the same results:

First, most comparative psychotherapy studies were performed with relatively small sample sizes and thus low statistical power. Between-group differences must therefore be very large to show statistical significance, but actual differences may remain undetected (Grawe, 1992).

Second, most studies compared the average effectiveness of treatments. Averaging over large groups of patients leads to a loss of differential effects between patients (Grawe, 2004). A given therapeutic approach may be well-suited for some patients, but less effective for another group of patients.

Third, the same non-specific mechanisms of change are manifest in various therapeutic approaches (Frank, 1971). However, change mechanisms that are specific to a certain therapeutic approach also exist besides such general change mechanisms.

1.3 Second generation approaches

Psychotherapeutic theories of the second generation emerged (Grawe, 1995; Grawe, 1998). These theories combine empirical findings about causal relationships and integrate knowledge about the specific mechanisms of change in various therapeutic approaches. Grawe (2004) presented various empirical findings that could easily be applied to different forms of psychotherapy. For example, to evoke emotions different interventions can be used: exposure in behavioral therapy, two-chair work in humanistic psychotherapies and interpretation in psychoanalysis. The effect of evoking emotions and thus the underlying processes may be similar while the specific procedures used to get there are very different. The great variety of empirically supported causal relationships was condensed by Grawe (1998) in his *Psychological Therapy.*

Based on a meta-analysis of approximately 900 comparative outcome studies on the effectiveness of psychotherapy by Grawe, Donati, and Bernauer (1994), Grawe (1995) concluded four general change factors: problem mastery, clarification, problem activation, and resource activation. Therapeutic procedures should be planned according to these general change mechanisms (Grawe & Caspar, 2011). Unlike in treatment manuals, the rules associated with this approach are heuristic, allowing for a wide range of techniques to be used and thereby adding a great deal of flexibility to the psychotherapeutic treatment. Heuristic procedures come with two advantages: First, they can be more easily combined if several goals are relevant simultaneously and second, they are still useful when the circumstances change. A flexible approach, however, must also be accompanied by a special commitment to ongoing monitoring of the processes and outcomes of psychotherapy.

One principle of change shared by many therapeutic approaches is that therapists directly help their patients to master a specific problem. Instructions on how to help patients master their problems can be found in specific treatment manuals, which in recent years have been published in great number and covering a broad spectrum of disorders. The main concern of problem mastery is that the patient develops skills empowering him to better cope with a problem (Grawe et al., 1994). By this experience he builds up self-efficacy, promoting the confidence of the patient in his own abilities to master problems.

A second, empirically well-established mechanism of change emphasizes the patients understanding of himself, his own experience and behavior (Grawe, 1994). The therapist helps the patient to make implicit motives, values and goals, which determine his experiences and actions explicit. Here, the question to be answered aims at motivational clarification not the ability or non-ability of the patient as in problem mastery (Grawe, 2004).

Another general change factor is problem activation (Grawe, 1998) referring to the great importance of the immediate experience of the patient in the therapy session. Problem activation is based on the assumption that only what is currently being processed can be changed: problematic experiences and behaviors can only be changed while they are occurring in a particular situation, because change means that a different experience or behavior takes place right in that situation.

It should be noted that problem activation can hardly have a positive effect in itself, however, when preceded by clarification and followed by problem solving, problematic behavior can be overwritten. Problem activation works as a moderator of change. Problem-solving together with procedural activation can be understood as a corrective experience (Alexander, 1950). In the assessment of psychotherapeutic interaction, it must be distinguished if the patient merely reports on something without feeling it, or whether the patient is emotionally experiencing what he is reporting. Only the latter is expected to have a profound curative effect.

Further, it has been shown that the probability of change in psychotherapy is greatest when problem activation and resource activation keep the balance (Gassmann, 2002). Resources represent the positive potential of a patient to satisfy his basic needs (Grawe & Grawe-Gerber, 1999). Resource activation as a general change mechanism in the psychotherapeutic process uses this potential with regard to the achievement of therapy goals. An increased consideration of individual resources in psychotherapy should result in a good therapeutic alliance, the willingness of the patient to open up and an overall increase in self-efficacy (Koban, Willutzki, & Schulte, 2005; Schmied & Grawe, 2003). Here, the therapeutic relationship was subsumed under resource activation, while elsewhere it is referred to as an additional general change factor (Grawe, 2004).

The therapeutic relationship is also known as a common factor, a factor shared by most if not all psychotherapeutic approaches. Today, common factors have not only been recognized as legitimate therapeutic processes, they are by far the variables that have received the most empirical attention in psychotherapy process research (Castonguay, Eubanks, Goldfried, Muran, & Lutz, 2015). The correlation between the therapeutic alliance and outcome is robust across different types of therapy, including CBT, and remains so even when moderators such as study design and researcher allegiance are included in the analysis (Flückiger, Del Re, Wampold, Symonds, & Horvath, 2012). However, controversy exists as to whether the alliance is an important causal factor in producing change (DeRubeis, Brotman, & Gibbons, 2005). Despite the many advances made in psychotherapy treatments and techniques, dropout rated are still about the same as five decades ago, leaving considerable room for improvement (Caspar & Kächele, 2016). If all therapeutic approaches are lacking something, it will persist after their integration (Caspar, 2015). With his term *General Psychotherapy* Grawe (2004) has postulated an ongoing process of including all interventions and concepts relevant for a domain, be they from other approaches to psychotherapy or basic science. As all these are ever changing and developing, *General Psychotherapy* is rather a process, an ideal to strive at than a state that can ever be reached (Grawe, 2004). The approach of a *General Psychotherapy* with derived general change mechanisms differs from the common factor approach in that it is not limited to searching for shared factors within already existing psychotherapeutic approaches.

Different approaches vary in their profile of general change mechanisms. While cognitive behavioral therapy (CBT) is primarily working towards problem solving, humanistic approaches such as Emotion-Focused Therapy (EFT) are mainly characterized by problem activation (Grawe, 1995) while both rely heavily on

clarification. Ideally, therapy would include a set of general change mechanisms (Schwartz, Hilbert, Schlegl, Dietrich, & Voderholzer, 2018).

1.4 Cognitive-behavioral assimilative integration

CBT refers to a popular therapeutic approach that has been applied to a variety of problems. In general, its evidence-base is very strong (Hofmann, Asnaani, Vonk, Sawyer, & Fang, 2013), however, traditional cognitive-behavioral therapy techniques are not always sufficient to treat patients' distress and to help them develop better ways of dealing with life's difficulties. Several authors have criticized CBT for not paying sufficient attention to interpersonal factors involved in psychotherapy (e.g. Goldfried & Castonguay, 1993; Robins & Hayes, 1993) and for approaching emotions as phenomena to be controlled rather than being experienced (Mahoney, 1980).

Thus, adding techniques aiming to facilitate interpersonal functioning and emotional deepening seem promising when intending to increase CBT's efficacy. Findings suggest that adding techniques from the psychodynamic and interpersonal traditions to address client's maladaptive relationship patterns might increase the therapeutic impact of CBT (Blagys & Hilsenroth, 2000). As a whole, research further suggests that adding techniques that facilitate client experience and expression of emotions may also improve the effectiveness of CBT (Castonguay, Goldfried, Wiser, Raue, & Hayes, 1996).

The beneficial use of what many would consider non-cognitive-behavioral therapy methods has raised the question of how best to incorporate methods derived from humanistic, psychodynamic, interpersonal or systematic approaches into our CBT practice. How do we actually combine traditional CBT techniques with interpersonally and emotionally focused interventions that are derived from interpersonal, psychodynamic, and humanistic orientations?

1.5 The Improve Project

Researchers and therapists became more and more aware that not a single approach is successful in treating all patients (Norcross, 2005). *Psychological Therapy*, the therapeutic approach largely corresponding to the ideas of *General Psychotherapy* draws mainly on empirically validated interventions from CBT and is based on concepts with a strong basis in academic psychology and neighboring fields. With an emphasis on individual case conceptualizations, reference to general therapeutic factors and an explicit prescriptive concept for building and maintaining the therapeutic relationship, *Psychological Therapy* has a major influence in the field.

The underlying *Consistency Theory* (Grawe, 2004) is derived from both broadly accepted findings that goals and schemes govern mental activity, and from Grawe's own argument that goal formation is developed to satisfy our basic needs. The core construct of consistency is key to understanding the development and maintenance of both normal and pathological mental processes (Grawe, 2007). Consistency is described as the "compatibility of many simultaneously transpiring mental processes" Grawe, 2007, p.170), and is a systemic demand, on a neural level, for harmonious flow. When the relationship between intra-psychic processes is harmonious, there is a state of consistency. The human mental system strives to avoid inconsistency and develops various mechanisms to move from a dissonant, inconsistent state to a more harmonious state. The mechanisms we use to avoid or correct strong states of inconsistency are very heterogeneous and have been known as defense mechanisms, coping strategies, or affect regulation.

The case conceptualization then includes an individual etiology for the development and maintenance of patient problems (Grawe, 2004). Important overarching questions are on the one hand, what factors lead to inconsistency, which has been shown to be closely related to mental problems. On the other hand, patient

resources (abilities, favorable circumstance, etc.) are emphasized and used. The patient's ability to secure and enhance consistency and to solve problems, are conceptualized in terms of self-regulation in the sense of Carver & Scheier (2000), and more elaborated for practical use in this project. The case conceptualization also includes an analysis of problems and possibilities in the therapeutic relationship. The prescriptive concept for how to develop an individually adapted therapeutic relationship is the Motive Oriented Therapeutic Relationship (Caspar, 2007, 2008) as derived from Plan analysis (Caspar, 2018).

The main focus of Plan analysis according to Caspar is the instrumentality of behavior and experience: based on the patient's verbal, and in particular, nonverbal behavior, the therapist makes inferences about the implied Plans and motives, answering the question "Which conscious or unconscious purpose could underlie a particular aspect of an individual's behavior or experience?" (Caspar, 2007, p 251). The individual results to this question are depicted in a graphical form as a Plan structure. This graph depicts the hypothetical motives and Plans "behind" the observed behaviors and experiences, as well as the links between these behaviors, Plans, and motives.

Based on Plan analysis, the therapist defines and implements in an individualized way the therapeutic relationship offer for a specific patient, the motive-oriented therapeutic relationship (MOTR; Caspar, 2007). The principle of MOTR is to assure the patient that therapy will provide the means to satisfy his basic needs or motives within the limits of the therapeutic relationship, without reinforcing problematic Plans, behaviors, or experiences (Caspar, 2007). For the patient, it is therefore no longer necessary to use his problematic means to attain his motives or goals, if these goals are satisfied within the therapeutic relationship. The latter is the case by using MOTR in a proactive way. Since the structure of motives is highly

individual, the relationship offers must be constructed differently for each patient, based on the information collected in the Plan analysis (Caspar, 2009).

Overall, in *Psychological Therapy* the therapeutic procedure is developed individually aiming to provide custom-tailored psychotherapies but utilizing general and disorder-specific etiological models as well as concrete therapeutic procedures, often described in manuals (Caspar, 2009). In the sense of *General Psychotherapy* (see above), the choice of useful concepts and interventions is generally open, but empirical evidence is a strong argument for the therapist to favor one over the other. In principle, all general change factors, clarification, resource activation, problem activation, and problem mastery (Grawe, 2004) are utilized, and the whole range of broad-spectrum behavior therapy interventions is open, as in previous studies (Grawe, Caspar, & Ambühl, 1990; Grosse Holtforth, Grawe, Fries, & Znoj, 2008). It was found, however, that working with emotions (general change factors problem activation and clarification) has usually less weight than more cognitive forms of clarification, as well as the development of competencies and behavioral exercises (problem mastery).

The range of emotion-related interventions commonly used in *Psychological Therapy* is limited when compared with an approach like EFT (Greenberg, 2011). EFT appears thus as a suitable complement and enrichment to *Psychological Therapy* as commonly practiced. In various places therapists have indeed begun to combine CBT with EFT. There is increasing evidence for the effectiveness of the latter, it fulfills the APA criteria for an empirically validated treatment for depression and couples therapy (Greenberg & Goldman, 2008; Greenberg & Watson, 2006), and evidence for more diagnoses have been published (e.g. Paivio, Jarry, Chagigiorgis, Hall & Ralston, 2010). However, effects of integrating EFT-based interventions in a way that is close to common integrative practice have not yet been studied.

The ongoing *Improve Project* under the direction of Prof. Dr. Franz Caspar (see project proposal, Caspar, 2015; study protocol, Babl et al., 2016) investigates the effects of integrating components of Emotion-Focused Therapy (EFT) into *Psychological Therapy* in a manner that is directly mirroring common integrative practice in the sense of assimilative integration. A total of 130 adults diagnosed with unipolar depression, anxiety or adjustment disorder were randomized to receive either *Psychological Therapy* with integrated emotion-focused components (TAU+EFT) or *Psychological Therapy* emphasizing self-regulation theory. Primary outcome variables are psychopathology and symptom severity at the end of therapy and at follow up; secondary outcome variables are interpersonal problems, psychological wellbeing, quality of life, attainment of individual therapy goals, and emotional competency. Furthermore, process variables are being studied as well as aptitude-treatment interactions and underlying mechanisms of change. Variables are being assessed at baseline, after 8 and 16 sessions, at the end of therapy, after 25 ± 3 sessions, and at 6-, 12- and 36-month follow-ups. The two add-ons EFT and SR are briefly explained below.

EFT has its origins in the humanistic approaches of psychotherapy (Elliot, Watson, Goldman, & Greenberg, 2004). As the name Emotion-Focused Therapy implies, emotions are at the center of the therapeutic work. Maladaptive and secondary emotions should be transformed into primary adaptive emotions (Greenberg, 2011). In this context, maladaptive means that emotions are unhelpful because only adaptive emotions lead to actions that meet the needs of this individual (Greenberg, 2011). It is thus important to provide access to primary, immediate emotions that reflect the true needs of a person. These primary emotions are often covered up by learned and so called secondary emotions. A detailed introduction to EFT can be found elsewhere (e.g. Greenberg & Watson, 2006).

Self-regulation offers one perspective from which to look at adaptive and maladaptive functioning of human beings and includes both, conscious, deliberate, explicit regulation as well as non-conscious, self-organized, implicit regulation (Caspar, 2016). It deals with the question of how an individual manages or fails to satisfy his needs or–in the terminology of Grawe's Consistency Theory (1998) to produce and maintain consistency. Although, self-regulation represents a theoretical concept that can be used for treatment planning by determining a specific focus and choosing specific interventions it was not yet elaborated in a way that would allow therapists to directly put it into practice and thus use its full potential. The transfer from self-regulation theory into practice was developed by Franz Caspar as part of two sabbaticals at the University of Miami when working with Charles Carver and resulted in a treatment manual for the self-regulation condition of the *Improve Project*.

Carver and Scheier (1998) presented the processes involved in self-regulation in a theoretical model, beginning with a comparison between the actual and the desired state. The desired state provides information about a person's goals, standards, and needs, while the actual state describes the situation as it is currently perceived (Miller, Galanter, & Pribram, 1960). If the comparator is hyper or hyposensitive, responding too often and to very small deviations from the desired state or too little and thus only to very large discrepancies between the actual and the desired state it is psychotherapeutically relevant. Then, instead of leaving it to self-organization, psychotherapy works towards a conscious, deliberate activation of the comparator (Caspar, 2016).

Whenever there is a discrepancy between the actual and the desired state, behavior is initiated to reduce this discrepancy (Carver & Scheier, 1998).

An individual may have routines that run self-organized without requiring conscious information processing. This is economic at best and leads to the use of old behavioral patterns completely unsuitable for the current situation at worst. If such patterns are so strong that the individual fails to replace them with more adaptive behavior the comparator continuously sets off the alarm, often resulting in people starting psychotherapy. While the specific therapeutic consequences can be very different, the general aim is to increase flexibility, so that the affected person can react to situations more adequately.

Human behavior, especially in the interpersonal context, typically does not directly lead to an effect in the sense of self-regulation because it is influenced by environmental factors (in particular reactions by other people) and leads to an effect, which, as interpreted by the individual, subsequently serves as input for the new actual state. The process then repeats itself.

Carver and Scheier postulate that adaptive regulation includes both, conscious, deliberate, explicit regulation as well as non-conscious, self-organized, implicit regulation. Ideally, these two ways of regulation complement each other. Psychological problems are often related to one type of regulation taking over when the other would be more adaptive. Psychotherapy usually attempts to interrupt self-organized processes and replace them with consciously regulated ones which might eventually develop to be adaptive self-organized patterns. As an alternative and complement to classical models of information processing and action control emphasizing conscious processes, connectionist and neural network models have been developed since the 1980s (Rumelhart et al., 1986). According to these, behavior and especially learning can happen without conscious control. Similar to the functioning of the central nervous system, it is assumed that information is represented and processed in very large network associations of nodes. In connectionist learning,

networks self-organize and change to reach minimal tension. Tension increases when negatively connected nodes are activated simultaneously and decreases if only positively linked elements are activated at the same time. Patterns can develop and shape behavior and experience without peoples' awareness. A simplified illustration of such self-organization models that can be of great help when working with patients in the SR condition is the tension landscape (Casper et al., 1992).

The tension landscape represents the total tension of all states into which an individual may fall. Lower in the tension landscape means tension-free and thus better. The probability of landing and remaining in low-tension valleys is greater than on high-tension hills. The lowest point is called "global minimum". In addition, there are "local minima", where tension may be higher but lower when compared to the immediate surroundings. Local minima stand for patterns in which elements such as emotions, cognitions, behavior, biological conditions and the environment fit well. The clinical relevance arises from the fact that mental disorders can be understood as such local minima. Dysfunctional patterns often have little tension in themselves. However, there is high tension between the dysfunctional patterns and other areas of functioning which is experienced as distressing. Nevertheless, it is difficult to leave local minima since it first requires an increase in tension before eventually decreasing (Caspar, 2016).

In the CBT + SR condition the emphasis lies on the identification and change of factors leading to the use of disadvantageous forms of regulation. Corresponding interventions were derived from the theoretical model of self-regulation and are explained in detail in the study protocol (Babl et al., 2016).

1.6 Contributing to the *Improve Project*

As part of the *Improve Project,* I wrote four articles, the first two of which covered the study protocol and therapist adherence to treatment. The third was a meta-

analysis on change of defense mechanisms in patients receiving psychotherapy, which, in turn, was a prerequisite for the fourth article investigating defense change for the first time in an integrative, randomized controlled trial with add-on design. Within the scope of this dissertation it is possible to cover one part of the *Improve Project*, while other areas are covered by further doctoral theses or the main publication and additional aspects of psychotherapy integration remain open for future research.

The study protocol describes the background, rationale, objectives, design, methodology, statistical considerations and aspects related to the organization of the *Improve Project.* allowing all study team members to review the project's steps and refer to this trial protocol in their own investigations.

The aim of the second article was to measure adherence to treatment in this integrative randomized-controlled trial with add-on design. A video-based adherence rating was used: Treatment arms were broken up into specific therapeutic interventions so that the proportion of session time dedicated to each over the course of therapy could be rated. Ensuring not only a theoretical but also a practical difference between the two treatment conditions is important in comparative studies and constitutes a crucial prerequisite for further analyses of between-group differences.

It is methodologically reasonable to study therapies that follow two approaches (EFT and SR) with concepts of a third approach that does not a priori favor one of the two approaches. Not only the effect of the add-ons, but also those of *Psychological Therapy* which strives for consistency in the human mental system should be studied. Defense mechanisms, a concept originating in psychoanalytic theory can be used to correct strong states of inconsistency and previous studies also concluded that defenses may play a mediating role in symptom and functioning

change (e.g. Hill et al., 2015). Defense mechanisms thus seem to be a suitable choice for an independent measuring instrument of between group differences. However, sample sizes of previous defense studies were small, resulting in a low reliability of findings. The third article as part of this dissertation is thus a meta-analysis examining studies measuring change of defense mechanisms in psychiatric patients over the course of psychotherapy in relationship to other treatment outcomes.

The aim of the fourth study was then to investigate defense change over the course of 25 ± 3 therapy sessions in a randomized controlled trial comparing CBT + EFT with CBT + SR in patients with depression, anxiety and adjustment disorder and relate it to psychotherapy outcome.

2.1 Article 1

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Psychotherapy integration under scrutiny: Investigating the impact of integrating emotion-focused components into a CBT-based approach: a study protocol of a randomized controlled trial

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Abstract

This currently recruiting randomized controlled trial investigates the effects of integrating components of Emotion-Focused Therapy (EFT) into Psychological Therapy (PT), an integrative form of cognitive-behavioral therapy in a manner that is directly mirroring common integrative practice in the sense of assimilative integration. Aims of the study are to understand how both, an existing therapy approach as well as the elements to be integrated, are affected by the integration and to clarify the role of emotional processing as a mediator of therapy outcome. A total of 130 adults with a diagnosed unipolar depressive, anxiety or adjustment disorder (seeking treatment at a psychotherapy outpatient clinic) are randomized to either treatment as usual (PT) with integrated emotion-focused components (TAU+EFT) or PT (TAU). Primary outcome variables are psychopathology and symptom severity at the end of therapy and at follow up; secondary outcome variables are interpersonal problems, psychological wellbeing, quality of life, attainment of individual therapy goals, and emotional competency. Furthermore, process variables such as the quality of the therapeutic relationship are studied as well as aptitude-treatment interactions. Variables are assessed at baseline, after 8 and 16 sessions, at the end of therapy, after 25 ± 3 sessions, and at 6, 12 and 36 month follow-up. Underlying mechanisms of change are investigated. Statistical analyses will be conducted using the appropriate multilevel approaches, mainly two-level regression and growth analysis. The results of this study will indicate whether the integration of emotion-focused elements into treatment as usual increases the effectiveness of Psychological Therapy. If advantages are found, which may be limited to particular variables or subgroups of patients, recommendations for a systematic integration, and caveats if also disadvantages are detected, can be formulated. On a more abstract level, a cognitive behavioral (represented by PT) and humanistic/experiential (represented by EFT) approach will

be integrated. It must be emphasized that mimicking common practice in the development and continued education of psychotherapists, EFT is not integrated as a whole, but only elements of EFT that are considered particularly important, and can be trained in an eight-day training plus supervision of therapies.

Keywords: Emotion-Focused Therapy, Integration, Self-regulation, Psychological Therapy, Cognitive-behavioral therapy, Randomized Controlled Trial

Introduction

Grawe formulated an approach designated General Psychotherapy (Caspar, 2010; Caspar & Znoj, 2011; Grawe & Caspar, 2011) in which he postulated that first generation approaches, the original approaches to psychotherapy as developed by their founders, had to be overcome. In his opinion they neglect or even suppress and fight concepts and findings that are not in line with their original stance. Second generation approaches, in contrast, utilize all concepts and evidence relevant for a scope of applications. The domain for which it claims relevance may be limited, but all that is relevant to the claimed range of application should be integrated. As research is continually developing, *General Psychotherapy* stands for a continuous endeavor despite the end state never fully being reached. It is not just another approach to psychotherapy with a fixed set of concepts and interventions, but rather a model in continuous development. Psychological therapy (PT; Grawe, 2004; Grawe, 1998) as practiced in Bern at the outpatient clinic of the Institute of Psychology and taught in the postgraduate training program as well as in many other German-speaking institutions, follows the idea of General Psychotherapy. It is mainly a cognitive behavioral approach that has its roots in humanistic and learning theories, but also relies on cognitive science, emotion and social psychology, neurobiology, and interpersonal and systemic approaches. Since its origins in the late 70's, there has been an ongoing attempt to follow the principles of General Psychotherapy. This has led to an approach that could be described as integrative (Norcross & Goldfried, 2005). The integration, however, is not eclectic but guided by theoretical concepts such as general change factors (Grawe, 2004). These change factors include clarification, resource activation, problem activation, and problem mastery. Psychotherapeutic interventions can be related to these factors, which allows for the description of approaches to psychotherapy in terms of their typical profiles.

Cognitive-behavioral therapy (CBT), for example, has an emphasis on mastery, and problem activation takes specific forms, such as behavioral exposure. Systemic approaches have a traditional strength in resource activation. Client centered therapy and psychodynamic approaches predominantly offer interventions fostering clarification, etc. A problem is that not all patients need the same profile in their therapy, and matching the patients' needs with what a traditional approach has to offer is not an optimal solution: The same patient may need different approaches for different problems, there may be a change of needs over time, and not all relevant problems may be known in the beginning of a therapy. Therefore a psychotherapeutic approach should be adaptable to the patient needs and possibilities as reflected in a case formulation (Caspar, 2009). To reach this goal, it is desirable that for all change factors a sufficient range of interventions and concepts upon which they are based is available, and the use of each has been empirically studied.

In the past decades Emotion-Focused Therapy (EFT) has become increasingly popular, both in clinical practice and in research. EFT is an approach of humanistic, client-centered, and gestalt origin. Main proponents are Greenberg, Elliott, Paivio, Watson, Pascual-Leone, Goldman, and Pos (for an overview: Greenberg, 2010). EFT refers to common concepts of emotion psychology and other relevant domains of psychology and includes a number of concepts as well as interventions. EFT is a process-oriented approach that integrates an empathic relationship offer and process-directive interventions aiming to improve a patient's ability to constructively deal with emotions (Greenberg, 2002). According to the prescriptive concepts of EFT, various types of emotional experiencing/processing are distinguished, which require different interventions. Important distinctions are primary vs. secondary emotions (roughly: natural/spontaneous vs. transformed/distorted) and adaptive vs. maladaptive emotions (roughly: helpful vs. not helpful for satisfying one's needs). It is assumed

that a patient's problems are often related to an inability to understand own emotions and thus an inability to derive appropriate responses. It can also be an inability to expose oneself to threatening or painful emotions, even though such exposure has a potential of fostering personal development. The overarching goal is to enable the patient to become asymptomatic and improve quality of life by transforming maladaptive emotions into adaptive emotions. The therapeutic procedure is led by "markers" (indicators for problems in emotional processing, but also for a patient's readiness to work on emotional problems), which become visible/audible in the therapeutic process and indicate which therapeutic interventions are most promising under which circumstances. Within a relatively short time, EFT has acquired a sound scientific stance in several empirical studies (Elliot, Greenberg, Watson, Timulak, Freire, 2013). It corresponds to APA (American Psychological Association) standards of empirically validated treatments for individual treatment of depression and for couples therapy, for which manuals have been developed (Greenberg, 2002; Greenberg & Goldman, 2008; Greenberg & Watson, 2005; Paivio, 2013). Moreover, there is evidence for positive effects on other disorders.

In practice, psychotherapists increasingly tailor their interventions to the characteristics of an individual patient and thereby use a number of methods not confined to a single therapy approach. Recent evidence shows that a big part, if not a majority of psychotherapists, adopt a rather integrative stance (Norcross & Rogan, 2013). Trained in one approach, therapists seek complements in other approaches when they find conceptual and practical weaknesses of their initial approach. With experience, therapists acquire elements from other therapy schools and traditions and thus become more flexible in the treatment of their patients, conceptually and technically. Therapists tend to integrate therapeutic elements from a new approach into the old one, once they were found effective through empirical evidence. They

rather integrate elements of a new approach into an old one than changing completely from the original approach to another (Messer, 2001). At the level of training, a recent study conducted in the United States showed that one third of the accredited training programs in psychotherapy offer mandatory or optional training in five major psychotherapy theories (psychodynamic theory, humanistic theory, cognitive theory, behavioral theory, systems theory), 90% reported teaching psychotherapy integration in one or more courses (Boswell, Castonguay, & Pincus, 2009). The majority of trainees characterizes their therapeutic approach as "eclectic/integrative" (Boswell et al., 2009), and in private practice, only two percent of therapists completely identify themselves with one single orientation (Cook, Biyanova, Elhai, Schnurr, & Coyne, 2010). A common type of integration has been named assimilative integration, that is, therapists are trained in a particular approach and take it as a point of departure for integrating other concepts and interventions that appear as particularly useful complements to the original one (Messer, 2001). A recent expert panel on the future of psychotherapy in the United States of America ("Psychotherapy in 2022") estimated a likely increase of integrative approaches (Norcross, Pfund, & Prochaska, 2013).

Nevertheless, it is uncommon to study such integration, and research on its effects on process and outcome is rather rare (Boswell et al., 2009). Thus, more research on psychotherapy integration is needed, if psychotherapy research is to cover real practice in an endeavor to reduce the currently much bemoaned scientist-practitioner gap. The main aim of this study is to compare Psychological Therapy corresponding to the usual practice in Bern to Psychological Therapy with integrated EFT elements. A central characteristic of the presented project is its external validity being particularly evident in the elaboration of naturalistic conditions and treatment as usual (TAU) being part of both conditions (TAU+EFT and TAU). Twenty-three

therapists per condition treat a total of 130 patients from the outpatient clinic of the University of Bern, suffering from depressive, anxiety and adjustment disorders. Therapists vary in their general therapy experience and extent of training. This will allow for evaluating the influence of these variables. To secure balance regarding the amount of training and supervision between the project conditions, TAU without EFT will be supplemented with additional units elaborating on some elements that are already part of PT.

The overarching question addressed is: What are the consequences of systematically integrating emotion-focused concepts and interventions into Psychological Therapy? This is seen as exemplary for major steps in therapy development in the sense of General Psychotherapy and follows suggestions by others (Borkovec & Castonguay, 1998). The general research question can be subdivided into the following questions:

1. Is there a general superiority of TAU+EFT over TAU in the changes from pre to follow-up (with indicators such as stability of change, post-therapeutic gain, and reduction of relapses)?
2. Is there a superiority of TAU+EFT over TAU in variables indicating deeper levels of processing?
3. Are there negative side effects of the integration e.g. due to less attention and time dedicated to more traditional but useful elements and procedures?
4. Additional exploratory research questions include the examination of potential predictors, moderators and mediators of outcome (e.g. symptom severity, onset of primary disorder, previous psychotherapies, and process variables such as experiencing ratings).

Some questions are specific in terms of differential effects regarding TAU and TAU+EFT (e.g., level of experiential processing, emotion-regulation skills). The

example of emotional processing (EP) is used to illustrate the kind of planned analyses. EP is assumed to be a trans-theoretical mechanism of change (Foa & Kozak; 1986) and emotion-focused interventions are considered potent ways to facilitate emotional processing (Greenberg & Watson, 2005; Pascual-Leone & Greenberg, 2007). Moreover, the level of EP has predicted psychotherapy outcome in previous research (Grosse Holforth et al., 2012; Hayes, Beevers, Feldmann, Laurenceau, & Perlmann, 2005). Therefore, we hypothesize that patients in TAU+EFT will show higher levels of EP than patients in TAU, and the level of EP in both conditions will mediate the relationship between emotion-focused interventions and therapy outcome. Higher levels of EP will predict better outcomes at follow-up.

Method

Participants

A total of 130 patients fulfilling the diagnostic criteria for a unipolar depressive (ICD, F32), anxiety (ICD, F40, F41) or adjustment disorder (ICD, F43.2) are being recruited, with 65 participants randomly assigned to the TAU+EFT condition and 65 to treatment as usual. Participants are recruited at the psychotherapy outpatient clinic of the University of Bern, once they have registered for therapy and meet the requirements for participation in the study. As both conditions can be offered as treatments with empirically supported effects, it is not expected that many patients will decline, although the standard of 25 ± 3 sessions may be an obstacle to some.

With an average of three therapies per therapist, 23 therapists are needed per condition. In support of external validity and generalizability of our findings, therapists of varying experience are included. The participation of five experienced therapists and 18 therapists in training per condition is planned. All therapists in this

study have a master's degree in psychology and therapists in training have been in postgraduate training at the University of Bern for at least one and a half years.

Inclusion and exclusion criteria

One important goal of this project is to inform therapists about the effects of integrating emotion-focused elements in Psychological Therapy in a naturalistic and routine practice setting. To maximize external validity and generalizability to common therapeutic practice the patient sample should not be too homogeneous and the sample should be replicable. A good solution seems to focus on patients with unipolar depressive, anxiety and adjustments disorders as the most prevalent patient groups in psychotherapy outpatient settings (Strauss et al., 2015), making about 50% of the patients in our outpatient clinic. Minimum age is 18. Exclusion criteria are active substance dependence for the previous six months, current suicidal risk or immediate threats of self-harm, or meeting criteria for organic mental disorders. In addition, we exclude individuals with health conditions that require medication potentially affecting their mood (e.g., steroids), and individuals receiving concurrent psychological treatments, including psychotherapy. Patients who have been under antidepressant medication at a stable dose for at least one month are allowed to participate. Comorbidity with disorders not on the exclusion list does not lead to exclusion as long as anxiety, depression, or adjustment problems are of primary concern.

Sample size calculation

Based on a power analysis with G*Power (Faul, Erdfelder, Buchner, & Lang, 2009) an optimal total sample size of 130 patients allows for the detection of a small effect (Cohen's f = 0.10) for the interaction between time (pre, post, follow-up) and treatment condition (TAU+EFT vs. TAU) (repeated measures analyses of variance (ANOVA), within-between-interaction; $\alpha = 0.05$; power = 0.80; number of groups=2;

number of measurements=3; pre-post correlation of pre-post values: r = 0.6; non-sphericity correction=1). Multilevel models allow for assessment-by-assessment approaches: Assuming 130 patients and three assessments per patient (pre, post, follow-up), the resulting N would be 390. Further assuming a 20% dropout rate at follow-up, this sample would be reduced to 312. This would enable the detection of small effects of 3.4% explained variance in a regression model (linear multiple regression: random model; H1: $\rho 2 > 0$; $\alpha = 0.05$; power = 0.80) with three predictors (treatment condition, time, and their interaction); and would still allow the identification of small effects of 5.1% explained variance in a model including additional covariates with a total of ten predictors (Faul et al., 2009).

Study design and group allocation

This study is conducted as a randomized controlled trial with two active treatments: TAU+EFT and TAU. A 2x3 design is used with one between-subject factor (two treatment conditions) and one within-subject factor (time: pre, post, 12 month follow-up).

After completion of the baseline assessment and checking of the inclusion and exclusion criteria, a randomization procedure with equal allocation of patients to each treatment condition is used. To ensure a balanced distribution of diagnostic groups in the two treatment arms, a stratified randomization is applied. The allocation lists are created by an independent researcher with a computerized random number generator and are unknown to the investigators. The study design is shown in Figure 1.

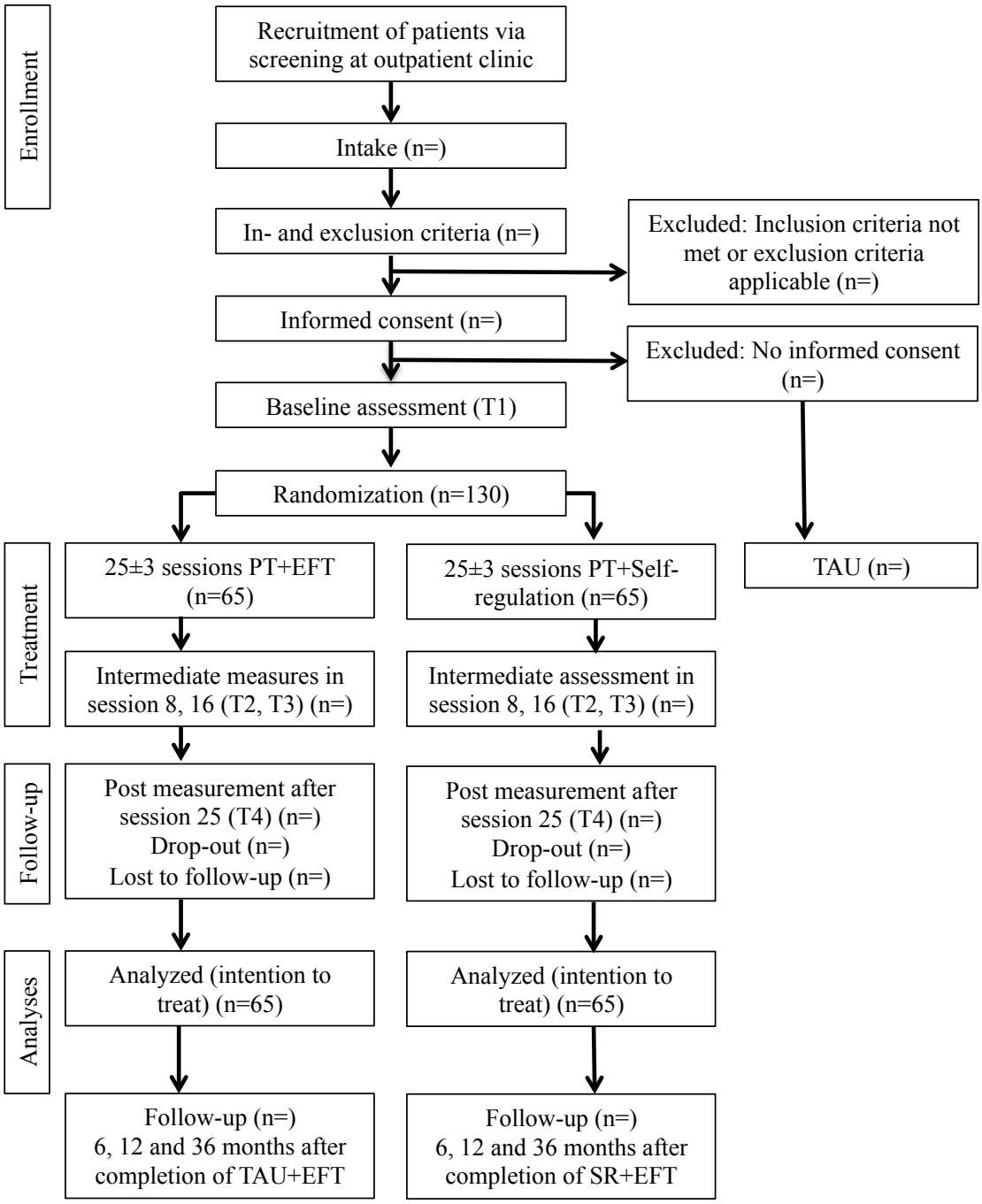

Figure 1 Participant recruitment and study flow chart

Description of the interventions

The treatment conditions are Psychological Therapy as usual and Psychological Therapy with emotion-focused components. Each intervention consists of 25 ± 3 sessions of 50 minutes each. 25 sessions is the official standard for short-term therapies in the German health-care system. To standardize the duration to some extent serves to facilitate the comparison of therapies in the planned process analyses.

Case formulation and Plan Analysis: Both treatments are based on Psychological Therapy [5], an integrative form of cognitive-behavioral therapy and are based on explicit individual case formulations. The case formulations include an analysis of the individual etiology for the development and maintenance of patient problems. A first overarching question is which factors lead to inconsistency (i.e., the tension resulting from discrepancies between needs and reality and from internal conflicts; Grawe, 2004). Inconsistency has been shown to be closely related to mental problems (Fries & Grawe, 2006). Second, patient strengths and resources are emphasized and used (e.g., abilities, preferences, favorable circumstances, etc.). The patient's ability to secure and enhance consistency and to solve problems is conceptualized in terms of Plan Analysis (Caspar, 2007). The case formulation also includes an analysis of problems and potentials for the therapeutic relationship.

Psychological therapy further makes reference to general change factors, and an explicit prescriptive concept for fostering the therapeutic relationship (Motive-Oriented Therapy Relationship as derived by the therapist from Plan Analysis). The main focus of Plan Analysis (Caspar, 2007) is the instrumentality of behavior and experience (what conscious or non-conscious purpose does an aspect of overt or covert behavior hypothetically serve?). From the patient's verbal and nonverbal behavior, the therapist infers underlying Plans of which many are non-conscious. For a specific patient, the therapist defines and implements a customized therapeutic relationship offer based on an individual Plan Analysis. Whereas the Motive-Oriented Therapy Relationship is a prescriptive approach, it is neutral in terms of therapy orientations. Its essence is to recognize, support and foster a patient's positive motives in an active way that is not contingent to the presenting problem behaviors. Whereas the therapeutic procedure is developed individually, it utilizes etiological models and therapeutic procedures as often described in manuals. Following the principles of

General Psychotherapy, the choice of helpful concepts and interventions is generally free, but empirical evidence is a strong argument for the therapist to favor one over another. In principle, all change factors, clarification, resource activation, problem activation, and problem mastery (Grawe, 2004), are utilized, and the whole range of broad-spectrum behavior therapy interventions may be implemented (Grawe, Caspar, & Ambühl, 1990; Grosse Holtforth et al., 2011; Grosse Holtforth, Grawe, Fries, & Znoj, 2008). However, it has been found in the past that working with emotions (instances of the change factors problem activation and clarification) has normally less weight in comparison to more cognitive/rational forms of clarification, skill building, or behavioral exercises. As explained above, this is closely related to lesser familiarity with and a greater insecurity in the implementation of interventions focusing on emotions.

Treatment as usual with emotion-focused components (Greenberg, 2010) is based on Psychological Therapy, but emphasizes working with emotions, particularly the use of EFT models and techniques. This involves the practice of mainly four psychological skills: empathy, focusing, two-chair work and empty-chair work. These are conveyed in a special eight-day training and supported by supervisions (individually or in small groups of up to four supervisees) on average every two weeks, so that therapists feel comfortable using them. In addition every three months a supervision of the supervisors by expert EFT supervisors takes place. Manuals, which are relatively heuristic/flexible to allow for individualized procedures, accompany instructions for the interventions. All components of both interventions must be implemented according to the manual's specification. For detailed information on the content of EFT-components see Table 1.

Table 1 Content of the emotion-focused components

EFT-Component	Content
Empathy	Empathy forms the basis of the therapeutic work in emotion-focused therapy as a technique and the fundament of the therapeutic relationship. Different forms of empathy play an important role in the shaping of the therapeutic relationship, affect regulation, deconstruction and the establishment of positive behavior towards the self.
Focusing	Focusing is a therapeutic technique to help expand the cognitive memories by the corresponding bodily reactions and thereby activate affective schemes usually arising in problematic situations. The goal is to look at current behavior in a larger context and recognize potential relationships to past experiences.
Two-chair work	The two-chair dialogue is used for confrontational processes e.g. self-evaluative splits, anxiety-splits and hopelessness splits where the patient operates alternating from both chairs. The main aim of two-chair work is an increase in self-compassion.
Empty-chair work	An indication for the empty-chair work is unfinished business with a significant other. The significant other can be imagined in the empty chair and contacted. The objective is a change in emotional schemes concerning the significant other.

Treatment as usual: In an add-on design, it would be problematic to give special training and attention to therapists only in one condition, because it would be hard to retrospectively single out factors such as higher expectancy, additional investment of time, allegiance, etc. To ensure that effects are specifically attributable to the add-on condition, it is important to balance out the conditions by making an equivalent addition also to the TAU condition, while keeping these additions within the concepts that characterize TAU. Thus in the TAU condition, self-regulatory processes as conceptualized by Carver & Scheier (2000) and others receive particular attention as an equivalent addition. Self-regulatory processes are part of the consistency theory described by Grawe (2004) and are conceptually part of Psychological Therapy as usual. It has been found though, that therapists seldom exploit the concrete possibilities of utilizing the self-regulation perspective in practice. Therefore, concrete self-regulation based interventions including psychoeducation on self-regulation models have been described and conveyed in the training. The self-regulation perspective does not come along with specific

interventions. However, the self-regulation perspective determines the planning of interventions in this condition, the way therapists are conveyed to their patients, and the choice of an attention focus.

In addition, therapists in this condition are advised to use strategies emphasizing emotions not more than considered necessary based on the individual case conceptualization. The first category in Table 1, empathy, is considered to be part of TAU, although plausibly more typical and frequent in the TAU+EFT condition. Techniques most typical for EFT (categories 2-4 in Table 1) are proscribed although in the improbable case that a therapist thinks, that an intervention typical for EFT is absolutely required for a particular patient, he or she can argue in favor of such an intervention vis a vis the supervisor who can approve it, if convinced that no non-EFT procedure would lead to similar effects.

The amount of training and supervision is equivalent in both conditions. Besides the basic model of self-regulation by Carver & Scheier (2000) other concepts are part of this active control condition, e.g. practicing an inner monologue for the planning and regulation of behavior (Meichenbaum & Cameron, 1989) and clarification which factors lead to maladaptive self-organization, in particular ego depletion (Baumeister & Vohs, 2007). For a detailed description of the self-regulation components see Table 2.

Table 2 Content of the self-regulation components

SR-Component	Content
Explanation of the SR-model	Explanation and discussion of the basic model of self-regulation. Illustration of both, self-regulatory and self-organized processes. Responding to the different boxes in the model and development of possible therapeutic starting points.
Clarification, when the patient produces perceptions, instead of objective change	Identification of changes reducing discrepancies between desired and the perceived states in perception only, as opposed to more tangible, concrete changes.
Deliberate reflection of goals and values	Goals, values, needs and standards are brought to mind and reflected. Finding out possible meanings for the activity of the comparator (which compares perceived to desired states).
Tracing the development of ideals and norms from personal history	Clarification of the origin of goals, values, needs and standards from the biography of the patient.
Attention-regulation	Training of conscious adaptation of the allocation of attention to the requirements and the switching between different modes of perception (deliberate/conscious vs. implicit/self-organized). Focusing attention on self-organized patterns of attention.
Work on self-instruction	Practicing self-control by the concretization of long-term consequences, to strengthen them over short-term consequences.
Regulation of behavior	Learning to monitor and control own behavior in terms of dual-process models (deliberate vs. self-organized regulation).
Regulation of the body	Relaxation exercises and techniques to reduce tension and agitation.
Emotion-regulation	Training of skills in emotion regulation as part of self-regulation.

Measurements

For an overview of assessments at baseline, intermediate measurements (8 weeks, 16 weeks), post-treatment after 25-weeks, as well as 6, 12 and 36 month follow-up see Table 3.

Table 3 Measurements and time of assessment

Instrument	Abbr.	Aim	Time of assessment
Clinician administered			
Structured Clinical Interview for DSM IV	SCID	DSM-IV Axis I/II disorders	pre, post
Hamilton Depression Rating Scale	HDRS	severity of depressive symptoms	pre, post
Goal Attainment Scaling	GAS	individual goals	pre, intermediate, post
Self-report ratings			
A. Symptom severity			
Brief Symptom Inventory	BSI	symptom impairment	pre, intermediate, post, follow-up
Beck Depression Inventory	BDI-II	severity of depressive symptoms	pre, intermediate, post, follow-up
Beck Anxiety Inventory	BAI	severity of anxiety symptoms	pre, intermediate, post, follow-up
B. Wellbeing			
World Health Organization 5	WHO-5	psychological wellbeing	pre, intermediate, post, follow-up
Short Form 12 of the Health Survey	SF-12	health-related quality of life	pre, intermediate, post, follow-up
C. Coping/ Emotion regulation			
Self-assessment of Emotional Competences	SEK-27	dealing with negative emotions	pre, post
D. Interpersonal problems			
Inventory of Interpersonal Problems	IIP-32	interpersonal problems	pre, intermediate, post, follow-up
E. Motives/ Incongruence			
Inventory of Approach and Avoidance Motives	FAMOS	motivational goals and schemes	pre, post
Incongruence Questionnaire	INK	incongruence	pre, intermediate, post, follow-up
F. Process measures			
Bern Post-Session Report Patient Version	BPSR-P	treatment process	after every therapy session
Bern Post-Session Report Therapist Version	BPSR-T	treatment process	after every therapy session
Symptom Checklist	SCL-9	psychological distress	after every therapy session
Classification of Affective Meaning States	CAMS	emotional processing	rating of therapy session
Experiencing Scale	EXP	experiencing	rating of therapy sessions

Primary outcome measures

Measures of psychopathology, symptoms of depression and symptoms of anxiety are used as a composite primary outcome measure (Flückiger, Regli, Grawe, & Lutz, 2007). This composite measure consists of the Brief Symptom Inventory (Franke, 2000), the Beck Depression Inventory II (Hautzinger, Keller, & Kühner, 2006) and the Beck Anxiety Inventory (Margraf, Beck, & Ehlers, 2007).

Brief Symptom Inventory

The Brief Symptom Inventory (BSI; Franke, 2000) is a self-report measure consisting of 53 items and detecting the subjective impairment by a range of psychological symptoms during the last seven days. The BSI offers information about

the psychological burden with regard to nine subscales: somatization, obsessive-compulsive, interpersonal sensitivity, depression, anxiety, hostility, phobic anxiety, paranoid ideation, psychoticism. As an economic screening instrument with robust psychometric properties, this inventory is commonly administered to detect pre-post changes (Franke, 2000).

Beck Depression Inventory II

The revised version of the Beck Depression Inventory (BDI-II; Hautzinger et al., 2006) is a self-assessment tool consisting of 21 items to determine depressive symptoms during the past two weeks. The BDI-II is not only an indicator of the severity of depressive symptoms in accordance with DSM-IV but also one of the most widely used self-report measures for depression in clinical practice and research (Kütner, Bürger, Keller, & Hautzinger, 2007). It has shown robust psychometric properties (Hautzinger et al., 2006).

Beck Anxiety Inventory

The Beck Anxiety Inventory (BAI; Margraf et al., 2007) is a self-report questionnaire to detect the severity of anxiety symptoms. The BAI consists of 21 descriptive statements with regard to symptom severity during the last seven days. 13 of 21 items detect physiological symptoms, 5 items measure cognitive aspects of anxiety and three items refer to both, somatic and cognitive symptoms. The BAI can be cited as a reliable and valid questionnaire (Margraf et al., 2007).

Secondary outcome measures

World Health Organization

The WHO-5 (Henkel et al., 2003) is a short questionnaire measuring subjective psychological wellbeing over the past two weeks using 5 items. A low value indicates low wellbeing and quality of life and a high value is associated with wellbeing and high quality of living. The WHO-5 has shown to be a sensitive and

specific screening instrument for depression (Topp, Østergaard, Sondergaard, & Bech, 2015). The clinimetric validity, the responsiveness and sensitivity were evaluated. The WHO-5 performed well with regard to all these aspects (Topp et al., 2015).

Short Form of the Health Survey

Health-related quality of life is measured with the Short Form of the Health Survey (SF-12; Topp et al., 2015). Its two subscales measure physical and mental aspects of health-related quality of life. It captures general health as well as pain, disabilities in daily life and mental problems. The SF-12 asks for the presence and severity of 12 items over the course of the last four weeks. The re-test reliability is good and roughly equivalent to the long form (Morfeld, Kirchberger, & Bullinger, 2011).

Emotional Competence

Emotional Competence is measured by the SEK-27 (Berking & Znoj, 2008). The emotional competence is recorded both, in general (trait) as well as with respect to the last week (prolonged state). The questionnaire consists of 27 items that are resumed to nine subscales: attention, clarity, body perception, understanding, acceptance, resilience, self-support, willingness to confront and regulation. The total value generally corresponds to the constructive handling of negative emotions. The SEK-27 is a reliable, valid and sensitive self-assessment measure for the constructive dealing with negative emotions (Berking & Znoj, 2008).

Inventory of Interpersonal Problems

The Inventory of Interpersonal Problems (IIP-32; Thomas, Brahler, & Strauss, 2011) is a questionnaire for the self-assessment of interpersonal problems. With the help of this instrument patients can describe how much they suffer from specific difficulties in dealing with other people. The IIP-32 consists of 32 items and the 8

scales correspond to the octants of the Interpersonal Circle (Kiesler, 1997): too autocratic/ dominant, too expressive/ intrusive, too caring/ friendly, too exploitable/ resilient, too insecure/ obsequious, too introverted/ socially avoidant, too repellent/ cold, too quarrelsome/ competitive. In addition, a total value is formed which characterizes the degree of interpersonal problems. The IIP-32 has shown adequate psychometric properties (Horowitz, Rosenberg, Baer, Ureno, & Villasenor, 1988).

Inventory of Approach and Avoidance Motives

The Inventory of Approach and Avoidance Motives (IAAM/ German: FAMOS; Grosse Holtforth & Grawe, 2000) assesses motivational goals of psychotherapy patients. The FAMOS consists of 94 items, which are rated in terms of their importance. The motivational goals are differentiated into approach-goals (14 scales; intimacy, socializing, helping others, recognition, impressing, autonomy, performance, control, education, faith, variety, self-confidence, self-rewarding) and avoidance-goals (9 scales; loneliness, contempt, humiliation, criticism, dependence, tension with others, being vulnerable, helplessness, failure). The FAMOS is both, a diagnostic tool in the context of treatment planning as well as a measure of change throughout psychotherapy and has shown good psychometric properties (Grosse Holtforth & Grawe, 2000).

Incongruence Questionnaire Short Version

The Incongruence Questionnaire Short Version (K-INK; Grosse Holtforth, Grawe, & Tamcan, 2005) is a procedure for the determination of incongruities between the perceived reality and the motivational goals of psychotherapy patients. The K-INK is based on the Inventory of Approach and Avoidance Motives (Grosse Holtforth & Grawe, 2000) and the consistency theory by Grawe (1998). The short version of the INK includes the 23 items of the long version with the highest item-total correlation with each of the 23 INK-scales, whereby 14 target the approach-goals and 9 items

target the avoidance-goals. The INK is the second questionnaire to attempt the building of a test-theoretical basis for Grawes psychotherapy research approach and has shown good psychometric properties (Grosse Holtforth et al., 2005).

Clinician administered measures

Structured Clinical Interview for DSM-IV

The patients' diagnostic status at baseline will be assessed with an interview of about one and a half hours conducted by trained raters (therapists in training) using the Structured Clinical Interview for DSM-IV (SCID; Wittchen, Zaudig, & Fydich, 1997).

Hamilton Depression Rating Scale

The Hamilton Depression Rating Scale (HAMD; Hamilton, 1967) is administered together with the SCID. It is a well-established clinician-rated assessment of depressive symptom severity and encompasses psychological and somatic symptoms. The clinician rates the severity of these symptoms based on patient reports and his or her own observation.

Goal Attainment Scaling

The Goal Attainment Scaling (GAS; Kiresuk, Smith, & Cardillo, 1994) is a tool for the definition of individual goals and the evaluation of goal attainment in psychotherapy. The patient can indicate to what extend he/she was able reach the individual goals that were formulated at the beginning of psychotherapy on a 7-point scale from -2 to 4. Point 0 describes the current state of the problem, point +4 describes the desirable state and -2 the state if the problem deteriorated. The GAS interview is conducted with the patient by trained Master students.

Process measures

Bern Post-Session Report

The Bern Post-Session Report (Patient and Therapist Version; BPSR-P/BPSR-T; Flückiger, Regli, Zwahlen, Hostetten, & Caspar, 2000) is an instrument for the assessment of treatment processes and a regular quality-monitoring tool, completed at the end of each therapy session. The patient version consists of 32 bipolar items which are rated on a scale ranging from -3 = not at all to +3 = yes exactly. The subscales include resource activation, positive bonding experiences, positive therapeutic relationship, problem mastery, positive problem solving experience, positive clarification experiences and treatment progress.

The therapist version assesses the treatment processes from the therapists' perspective and consists of 27 bipolar items, which are also rated at the end of each therapy session. The subscales include resource activation, therapeutic relationship, openness and engagement, willingness to work hard, problem mastery, problem solving, motivational clarification, treatment progress, interactional perspective and interactional difficult. Further, new items concerning the study-specific interventions were added to the Bern Post-Session Report Therapist Version (see Table 4).

Table 4 Checklist of the study-specific interventions implemented in the therapy session

Today I conducted emotion-focused intervention(s)
If so, which emotion-focused interventions (empathic exploration, empathic validation, engendering of a medium degree of emotional activation, focusing, allowing and expressing emotions, biographical work, systematic evocative deduction, two-chair dialogue, empty-chair dialogue, other Emotion-focused intervention)?
Today I conducted intervention(s) to improve self-regulation (SR)
If so, which interventions fostering self-regulation (explanation of the SR-model, clarification, deliberate reflection of goals and values, derivation of ideals and norms from personal history, attention-regulation, work on self-instruction, regulation of behavior, regulation of the body, emotion-regulation, other self-regulatory interventions)?
Has it been difficult to integrate emotion-focused components into today's therapy?
If so, which difficulties occurred?
Has it been difficult to integrate self-regulation into today's therapy?
If so, which difficulties occurred?
Did you have reasons to not realize any study-specific interventions?
If so, which reasons would that be?

Symptom Check List

The Symptom Checklist - 9 (SCL-K-9; Klaghofer & Brähler, 2001) is a short form of the revised Symptom Checklist (SCL-90), which in turn is a previous version of the Brief Symptom Inventory. The results of the SCL-K-9 on session-level thus correspond to the results of the BSI total score (General Symptom Index; GSI) as a primary outcome measure (measured at pre, post and follow-up). The SCL-K-9 assesses the construct of psychological distress through symptom severity. The SCL-K-9 is composed of 9 items corresponding to the 9 scales of BSI and SCL (see above). It is a reliable and valid instrument that is used in clinical diagnostic and in practice as a measure of quality assurance (Hayes-Skelton, Roemer, & Orsillo, 2013).

Classification of Affective Meaning States

The Classification of Affective Meaning States (CAMS; Pascual-Leone & Greenberg, 2005) is a process rating system for the systematic identification, observation and measurement of distinct emotional states in psychotherapy sessions. This observer-based rating system was developed based on emotion-focused theory (Greenberg, 2002). The CAMS assesses ten affective meaning states that can be ordered on nine different levels of emotional transformation referring to a sequential model of emotional processing (Pascual-Leone & Greenberg, 2007). In several studies an excellent inter-rater reliability was reported (Kramer, Pascual-Leone, Rohde, & Sachse, 2015).

Experiencing Scale

The Experiencing Scale (EXP; Klein, Mathieu-Coughlan, & Kiesler, 1986) is a rating scale assessing the degree to which clients orient to, symbolize, and use internally felt experiences as a source of information when solving their problems. Raters use verbal communication, including features of content, expression, grammatical selection and paralinguistic to code segments of therapy. Ratings on the lower scale levels represent clients' attempts to identify and symbolize their internal experience. Higher scale

levels by contrast reflect the clients' efforts to use an experientially- oriented understanding for problem solving. The Experiencing Scale stands among the most studied and validated observational measures in psychotherapy research (Klein et al., 1986). Depth of change will be measured by the observer-rated CAMS and EXP as well as by patient and therapist rated process questionnaires (e.g. problem actuation, clarification, emotional processing, and experiencing).

Procedure

Patients are randomly assigned to the TAU+EFT or TAU condition. The patients receive 25±3 sessions of weekly Psychological Therapy with or without integration of EFT elements. Both groups are assessed at baseline (t0), immediately after completing therapy (t3, 25 sessions), for intermediate measurements (t1, 8 sessions; t2, 16 sessions) and at 6, 12 and 36 month follow-up (t4, t5, t6) with an elaborated measuring battery (see Table 2). Additionally, participants and therapists complete self-report measures after every session for the detection of the treatment process and symptom severity. All data will be saved in an anonymous way only identified by a code, which is not related to the participant's identity. Servers are protected by high-end firewall systems. Only the researchers directly involved in the study have access to the data. The procedure is shown in Figure 2.

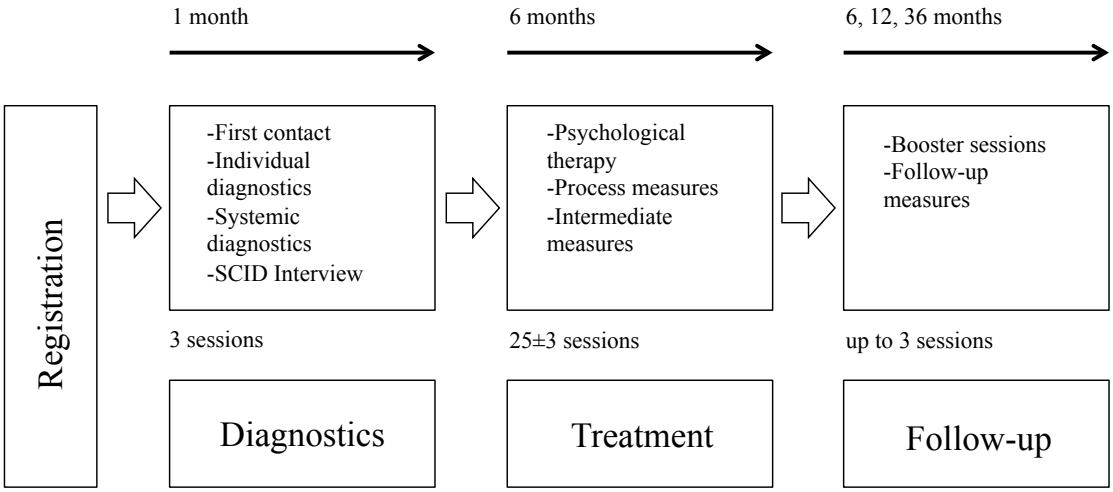

Figure 2 Procedure of the study

Analysis

Baseline descriptive statistics will be generated for all randomized patients and compared between the two study arms with ANOVA (for continuous variables) and $\chi 2$ statistics (for categorical variables). Missing values will be substituted with the procedure of multiple imputation. The research questions will be examined with the appropriate multilevel approaches, mainly two-level regression and growth analyses. These approaches take into account non-independence of observations in repeated measures outcome and the different number of sessions attended by the patients. Furthermore, we intent to test potential variability within therapists based on a longitudinal three-level model. The primary outcome analysis will be a modified intention-to-treat analysis that includes all patients who were randomized and attended at least one therapy session. These analyses will compare treatment differences in continuous outcome variables over time for TAU+EFT and TAU. Separate multilevel analyses will be run for the primary and each of the secondary outcome variables across three time points (pretreatment, post- treatment, 12-month follow-up). We expect primary and secondary outcome measures to be highly inter-correlated loading on one outcome factor (Flückiger et al., 2007). For the purposes of

the present study, a standardized composite measure taking primary and secondary symptom-related, self-report measures into account will be reported. Models will be run assuming random intercepts and slopes. For the main research questions, level-one models of individual change over time and level 2 models for the between-subjects factors are conducted. Each analysis will examine the overall effect of change over time (time), the difference between TAU+EFT and TAU, and the differences in changes over time by condition as a cross level interaction. To assess maintenance of gains, the multilevel regression analyses will be repeated with just the post-treatment and follow-up time points. A secondary series of analyses will include only those patients who completed the originally allocated treatment. Mechanisms of change will be examined as mediation effects in multilevel regression and structural equation models. Moderator effects will be analyzed as cross level interactions. Therapist effects will be investigated in three-level models. Multiple regression models will be used to predict residual change in the composite score between post and follow-up, by the level of structural change at post-treatment.

Discussion

In this randomized controlled trial, the effectiveness of treatment as usual with integration of emotion-focused components (TAU+EFT) and TAU is compared. The originality of this project lies in the examination of the consequences of integrating interventions of another promising evidence-based approach (EFT) into treatment as usual in a way that is directly mirroring common integrative practice. The use of an elaborated and intensively used psychotherapeutic model (TAU) speaks for a general effectiveness of both conditions. Emotion-Focused Therapy has acquired empirical validation for the treatment of depression, trauma and abuse (Greenberg & Watson, 2005). Clinically significant improvements with substantial effect sizes for both treatments in primary and secondary outcome measures are thus expected.

Other projects dealing with the integration of EFT elements (Greenberg & Watson, 2005; Grosse Holtforth et al., 2012; Hayes et al., 2005; Newman et al., 2012) did not report great differences in effectiveness. Newman and colleagues for example (Newman et al., 2012) compared an integrative psychotherapy of generalized anxiety disorder that added EFT and interpersonal elements to a standardized CBT treatment with a treatment that added supportive listening to the same CBT component. The integrative therapy was equally effective post treatment and two years later, so that the authors concluded that the augmentation of CBT with emotion-focused and interpersonal techniques might not lead to better outcomes for generalized anxiety disorder patients. Similar results were found in an RCT on the treatment of patients with depression by grosse Holtforth et al. (2012), comparing Exposure-Based Cognitive Therapy (EBCT) with CBT. Component studies, which look at the effects of either adding particular techniques to a form of therapy (additive design) or taking them away (dismantling studies) rarely find that the presence or absence of specific techniques makes much difference to the overall outcomes (Klein et al., 1986). In the history of psychotherapy, there are many examples of interventions that were less effective than expected, showed negative side effects, and worked in a different way than was believed (Carryer & Greenberg, 2010; Öst, 2008).

Grawe criticized what he called "the myth of an outcome equivalence, an artifact created by research design" (Tschuschke & Czogalik, 2013). There have in fact been some deficiencies in studies on comparative therapies that exacerbate the finding of specific change factors, e.g. the uniformity myth, small sample sizes, insufficient control of group assignments, disregard of competences and experiences of the therapists, inconsistent assessments of therapy success, lack of recording complementary interventions, differences in frequencies and durations of therapies, exclusion of drop-outs and missing of follow-up measures (Bozok & Bühler, 1988).

One point of criticism viewed alone results in considerable limitations on the validity of studies. In the summation of individual points of criticism doubt should arise on the general meaningfulness of the results.

From a General Psychotherapy perspective, newness is always part of a continuous development, of which the integration of a complementary concept with the potential of enriching an existing one can be an important step. This is a methodologically challenging endeavor, and this is a major reason why a relevant part of contemporary psychotherapy practice is not empirically examined. The application of pure approaches can be studied more easily, and consequently more evidence exists relating to such applications. The problem is that in clinical reality, a majority of practitioners do not apply pure approaches, partly because they question their relevance for routine practice. The endeavor of studying an integrative procedure corresponding to widespread practice requires not only an appropriate design but also a group of researchers possessing first-hand clinical knowledge in each of the conditions under investigation. Another requirement is motivated therapists being trained in practicing integrative therapy and at the same time, being able and willing to skillfully implement the procedures defined by the experimental the conditions. Finally, to render such a study realistic, an institution is highly desirable in which a practice similar to the one required by the study design is already well-established routine.

An obvious question is, of course, what will be different in the current study? This project is characterized by highly naturalistic conditions and thus it can be considered a major step towards closing the science-practitioner gap with respect to psychotherapy integration. On average, therapists will be more experienced and better trained than in previous studies. Certified EFT trainers including Dr. Greenberg have conducted the training. The supervisors have completed an advanced EFT training.

Fostering external validity, therapies will be conducted in a regular treatment setting, and the inclusion of EFT will correspond more to regular practice. This will make a competent implementation easier and the procedures will be better integrated in an overarching model. It should be emphasized again that this is not a comparison of complete and pure EFT (which would require more extensive training) with treatment as usual. The spectrum of diagnoses will be larger, therapies will be somewhat longer, and the change processes will be studied extensively. Furthermore, the proposed study uses multilevel models to analyze treatment outcomes, hypothesized moderators and mediators, as well as therapist effects. While this approach is not yet common practice in randomized controlled trials (RCTs), it is very flexible, and exposes new perspectives on predictors of change at the within-person and the between-person level in the psychotherapeutic process.

A methodologically fundamental question is how therapist variance shall be controlled. It may seem like an ideal solution to let the same therapists conduct therapies in both conditions, and some studies actually use this strategy (Grosse Holtforth et al., 2012; Newman et al., 2012). However, having the same therapists in both conditions does not necessarily ensure that their preferences, belief in the methods, fit of the personal profile with the method, competencies etc. are equal between the two conditions, but may vary between the two conditions within one and the same therapist. In addition, it has been argued plausibly that there may be considerable carry-over effects when using therapists in more than one condition (Falkenström, Markowitz, Jonker, Philips, & Holmqvist, 2013). Whereas both options seem viable, we decided in this trial to control at the level of relevant psychological variables. Therapist variables (e.g., therapist experience in the respective condition) will be assessed, and their impact on differential change in the outcome variables will be investigated and taken into account in the interpretation of potential differences

between the groups. We will also be able to test for differential effects, e.g. whether good effects depend on therapist experience in one but not the other condition. Also higher order interactions can be studied, e.g. whether the readiness of a particular kind of patient to engage in particular interventions depends on the perceived therapist competence, etc.

To conclude, an essential contribution of this study will be to better understand how an existing and well-elaborated psychotherapy approach may be further enriched by the integration of new elements. In addition to studying the effectiveness of the two treatment protocols, the current study examines unique and joint factors which moderate and mediate treatment effects in TAU+EFT and TAU. Furthermore, predictor variables are not only assessed before and after treatment but also over the course of treatment through weekly process measures. This provides the opportunity to measure temporal precedence and to make inferences about causality. We hope that insights into which treatment works best for whom and how, will help improve the care for patients with depressive, anxiety and adjustment disorders. Furthermore, the results of this study promise to indicate whether an 8-day EFT-training plus supervision can enhance the effectiveness of treatment as usual. Such an add-on format, if shown effective, would represent a “light” alternative to the full EFT-training, which may be more realistic and attractive for many therapists and would therefore contribute to a deserved larger implementation of EFT concepts and interventions into psychotherapy. The procedures and training could also be modified to treat other conditions as well.

Abbreviations

ANOVA: analysis of variance; **BAI**: Beck Anxiety Inventory; **BDI**: Beck Depression Inventory; **BPSR-P/BPSR-T**: Bern Post-Session Report Patient Version/ Therapist Version; **BSI**: Brief Symptom Inventory; **CAMS**: Classification of Affective Meaning States; **CBT**: cognitive-behavioral therapy; **EFT**: Emotion-Focused therapy; **EXP**: Experiencing Scale; **FAMOS**: Inventory of Approach and Avoidance Motives; **GAS**: Goal Attainment Scaling; **HDRS**: Hamilton Depression Rating Scale; **ICD**: International Classification for Disease; **IIP**: Inventory of Interpersonal Problems; **INK**: Incongruence Questionnaire; **PT**: Psychological Therapy; **SCID**: Structured Clinical Interview for DSM-IV; **SCL-9**: Symptom Checklist; **SEK-27**: Self-assessment of Emotional Competences; **SF-12**: Short Form 12 of the Health Survey; **SR**: self-regulation; **TAU**: treatment as usual; **WHO-5**; World Health Organization 5.

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2.2 Article 2

Babl, A., grosse Holtforth, M., Albrecht, A.-M., Eberle, D., Stähli, A., Heer, S., Lin, M., Berger, T., & Caspar, F. (2018). Adherence to new elements in integrative psychotherapies.

Adherence to new elements in integrative psychotherapies

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Abstract

Therapist adherence is defined as the compliance with techniques and interventions specific to the treatment condition one has declared to follow, and the omission of those from other treatment conditions. The aim of this study was to measure adherence to treatment in an integrative randomized-controlled trial with add-on design. A video-based adherence rating was developed and implemented to assess the proportion of session time dedicated to interventions specific to one treatment condition. The sample consisted of 20 adults with diagnosed unipolar depressive or anxiety disorders who received either cognitive-behavioral therapy (CBT) with integrated emotion-focused components (CBT + EFT) or components of self-regulation (CBT + SR). Adherence was rated over the course of therapy (at baseline, sessions 8 and 16 and towards treatment termination, session 24). Overall, therapists were adherent to treatment, indicating not only a prescribed but also an actually realized difference between the two treatment conditions. It was found that the proportion of EFT interventions carried out in CBT + EFT (24.33%) was higher than the proportion of SR interventions in CBT + SR (18.78%). Empathy was the most widely used EFT-intervention. Since empathy has been identified as a common factor in psychotherapy, it was probably also used in the CBT + SR condition. However, it may have been less often rated.

Keywords: Adherence to treatment, Psychotherapy integration, Randomized controlled trial, Cognitive-behavioral therapy, Emotion-focused therapy

Introduction

Adherence to treatment describes the extent to which therapists use techniques appropriate for their respective treatment condition (Perepletchikova & Kazdin, 2005) and refrain from using procedures specific to other treatment conditions (DeRubeis & Feeley, 1990). Rigorous experimental research requires careful checking of the manipulated variable. In therapy outcome evaluations, the manipulated variable is typically represented by treatment or a key characteristic of treatment. Just because a study has been designed to compare different therapeutic approaches or interventions does not guarantee that the independent variable (treatment) has been implemented as intended (Comer & Kendall, 2013). Thus, the treatment that was assigned may not in fact be the treatment that was provided (Perepletchikova & Kazdin, 2005). To ensure that treatments are indeed implemented as intended, it is wise to require that a treatment plan be followed, that therapists are carefully trained, and that sufficient supervision is available throughout (Comer & Kendall, 2013). Some authors even suggest conducting an independent check for the manipulation (Wampold and Imel 2015; Kendall et al., 2008).

To assess therapist adherence in an experimental setting, Comer and Kendall (2013) recommend the video-based method where therapy sessions are recorded so that independent rater can listen to and watch the recordings and conduct a manipulation check, thereby not only allowing to check on treatment adherence within each separate treatment condition or study, but also increasing comparability of different treatment conditions in and across studies.

The literature also offers some scales for measuring therapeutic adherence, such as the Collaborative Study Psychotherapy Rating Scale (CSPRS; as cited in Webb et al., 2010) or the Cognitive Therapy Adherence and Competence Scale (CTACS; Liese, Barber, & Beck, 1995). The former divides adherence into three

subscales, which include cognitive and behavioral methods, as well as the structure of the session (as cited in Webb et al., 2010). The latter assesses adherence next to the quality of the cognitive processes and interventions. Both scales are particularly used in behavioral and cognitive-behavioral therapies where highly structured manuals are available to ensure the implementation of empirically supported interventions, provide orientation in complex treatment situations and help inexperienced therapists through concrete guidelines (Caspar, 2017).

Contrasting approaches, however, suggest to select procedures for a given patient in terms of that patient's needs instead of trying to make the patient adhere to a particular form of therapy (Garfield, 1992). Delivery of therapeutic ingredients should thus be coherent and consistent with the rationale for treatment provided to the client. This is very much in line with the Bernese approach to psychotherapy put forward by Grawe (1995), who postulated that the strict distinction between different approaches to psychotherapy has to be overcome and useful elements of several approaches as well as basic science have to be used to optimize treatment success and adapt treatment to a maximal number of those who can benefit from it. Grawe's goal was to establish an approach to psychotherapeutic research and practice free from rivalry and demarcation and instead focused on the effectiveness of treatment. His approach – termed *General Psychotherapy* in theory and *Psychological Therapy* in practice – has its basis in the cognitive-behavioral therapies but will never reach a final state as new, empirically supported interventions from different therapeutic approaches are continuously integrated (Grawe, 1995).

Grawe (2004) presented various empirical findings that could easily be applied to different forms of psychotherapy. In order to evoke emotions, for example, different interventions can be used: exposure in behavioral therapy, two-chair work in humanistic psychotherapies and interpretation in psychoanalysis. The effect of

evoking emotions and thus the underlying process may be similar, but the specific procedures are very different. This way, general change mechanisms could be determined, which decisively influence therapy outcome. These general change mechanisms comprise the therapeutic relationship, problem activation, resource activation, problem solving and clarification (Grawe, 1995). Different approaches vary in their profile of general change mechanisms. Cognitive behavioral therapy (CBT) is primarily working towards problem solving, whereas humanistic approaches such as Emotion-Focused Therapy (EFT) are mainly characterized by problem activation (Grawe, 1995) and both foster clarification. Caspar (2017) thus recommended to plan therapeutic interventions with regard to general change mechanisms along with great flexibility in their implementation as done in this study. This combines both, the advantages of manualization and those of flexibility, which might eventually help to optimize treatment outcome.

Up until recently, therapist adherence to specific treatment protocols was also thought to be central to achieving positive clinical outcomes (Baldwin & Imel, 2013). However, the current opinion regarding the influence of treatment adherence on outcome is changing due to mixed results provided by adherence-outcome studies. A meta-analysis of 32 adherence-outcome studies indicated a negligible and statistically non-significant correlation between the two (Webb, de Rubeis, & Barber, 2010). There was a moderate amount of between-study heterogeneity with some studies confirming a positive relationship between therapist adherence and treatment outcome (e.g. Strunk, Brotman, & DeRubeis, 2010) and others showing that adherence can have very little impact or even a negative relationship with psychotherapy outcome (e.g. Boswell, Castonguay, & Wassermann, 2010). Several studies have provided evidence for quadratic effects of adherence on clinical outcomes, wherein very high and very low adherence was associated with negative outcomes (Barber et al., 2006).

Thus, the evidence does not consistently support a strong relationship between adherence and outcome, which may indicate that therapist adherence to a treatment approach does not impact outcomes. However, the current state of evidence is not sufficient to fully draw these conclusions.

Boswell et al. (2013) further observed that over half of the variance in adherence and competence was explained at the session level, suggesting that treatment fidelity is contextually driven. Interestingly, the variability of adherence scores from session to session predicted better outcomes – that is, patients of therapists who were flexible in their degree of adherence from one session to another achieved better outcomes (Owen & Hilsenroth, 2014). This demonstration of mutual influence provides statistical support for the responsiveness hypothesis. Responsiveness to the individual patient has become a highly promising approach to increase the effects of psychotherapy and also provide help to those patients who previously did not benefit from highly structured, manualized therapies (Kramer & Stiles, 2015). As each traditional approach to psychotherapy has its limits, integration is a natural consequence of the attempt to increase responsiveness.

The aim of our study was to develop and implement a tool for the assessment of treatment adherence in integrative psychotherapies. In contrast to previous studies, the present study emphasized adherence to the elements that were to be integrated. A direct comparison between the two treatment conditions TAU + SR and TAU + EFT was conducted to assess the extent to which interventions specific to one treatment condition were realized. Not only did we want to derive frequency counts but also assess the amount of session time dedicated to these specific interventions. We expected a higher proportion of EFT interventions in the TAU + EFT condition than in the TAU + SR condition and vice versa. Further, to evaluate both, the successful integration of emotion-focused components into Psychological Therapy and the effect

of assessment time, the temporal pattern of using EFT or SR-specific interventions was also examined across different therapy sessions (1, 8, 16 and 24).

Since this study was conducted within an ongoing randomized controlled trial (RCT), adherence outcome relationships could not be reported. However, the discussion section provides more details on what research questions should be investigated and which analyses should be used upon completion of the RCT to supplement the results presented here.

Methods

Participants

The sample consisted of twenty dyads of patients with the diagnoses of unipolar depression (ICD-10: F32; WHO, 1992), adjustment disorder (ICD-10: F43.2; WHO, 1992) or anxiety disorder (ICD-10: F40 and F41; WHO, 1992) and their respective therapists. Diagnoses were based on the Structured Clinical Interview for DSM-IV (First, Williams, Spitzer, & Gibbon, 2007). Patients were recruited when they sought treatment at a university psychotherapy outpatient clinic. All examined patients fulfilled the inclusion criteria (see Babl et al., 2016). They were randomly assigned to receive 25±3 sessions of psychotherapy in either TAU + EFT or TAU + SR. Ten therapies per treatment condition were examined. The mean age was 31 years for the patients (*SD* = 9.84) and 37 years for the therapists (*SD* = 9.34). Seventy percent of the patients and the therapists were female. All patients were blind to their treatment condition and gave written informed consent prior to participation. Non-eligible patients were offered adequate treatment at the center, too.

Design

Of the total 25±3 sessions, four sessions (1, 8, 16 and 24) per therapy were rated for therapist adherence. This resulted in a 2 x 4 design with one between-subject factor (two treatment conditions) and one within-subject factor (4 assessment times).

Materials

The ELAN Coding Software (Max Planck Institute for Psycholinguistics, Netherlands), a professional tool to manually and semi-automatically annotate and transcribe audio or video recordings was used in this study. Tapes of therapy sessions were temporarily loaded into the program and played, while the beginning and end points of the EFT and SR specific interventions (as described below) were annotated and labeled on different tracks (one track for each intervention). The frequency and duration of the interventions was captured and data could be exported as an Excel file and thus be made accessible to SPSS. The output in milliseconds allowed for a precise calculation of the proportions of the various condition-specific interventions. It must be emphasized that mirroring common integrative practice, therapists were not expected to primarily perform EFT or SR but implement condition- specific elements when indicated. Short manuals were prepared for interventions specific to each of the two treatment conditions. In the following, interventions specific to EFT and SR will be described.

Emotion-focused therapy

Empathy is the basis of the therapeutic work in EFT. It is both, an intervention and a therapeutic stance, building the foundation of the working relationship between patient and therapist (Bohart & Greenberg, 1997). In addition, empathy is used to raise awareness of implicit emotional experiences, to make them explicit and understand them (Herrmann & Auszra, 2016).

Focusing is a therapeutic technique to stimulate memories and cognitive representations with the help of corresponding physical reactions (Gendlin, 2007). The goal of focusing is to take a look at current behavior and identify potential relationships with past experiences (Greenberg, 2016). Focusing is used when the patient describes a vague feeling, feels blocked or empty and describes his feelings rather globally or externally-oriented (Herrmann & Auszra, 2016). It is also used when patients avoid feelings, have difficulties expressing their feelings or answering questions about feelings (Herrmann & Auszra, 2016).

Two-chair work is used for confrontation processes (Greenberg, 2016). Confrontation can be used in self-critical, hopelessness-inducing, fear-inducing and self-interrupting processes (Greenberg, 2016). In the case of two-chair work one chair represents the current experience of the patient, the other chair represents the self-critical, hopeless, fear-inducing or self-interrupting counterpart. The patient changes seats and thus perspectives several times during chair work with the main goal of increasing self-compassion (Herrmann & Auszra, 2016; Shahar et al., 2012).

An indicator of *empty-chair work* is "unfinished business" with a significant other (Greenberg, 2016). Unfinished business is characterized by long-lasting and unresolved feelings of hurt, resentment or shame (Greenberg, 2016). In two-chair work the significant other is placed on the empty chair by imagination so that wishes or concerns can be expressed to that person. Responses from the significant other can then be acted out. Emotional expression is intended to transform maladaptive emotions into adaptive emotions (Herrmann & Auszra, 2016). The aim of empty-chair work is to achieve changes in emotional schemes associated with the significant other (Herrmann & Auszra, 2016).

Self-regulation (Babl et al., 2016; Carver, 2016; Caspar, 2016)

Explanation and discussion of the self-regulation model. Self-regulatory and self-organized processes are illustrated and responses to the different segments of the model as well as possible therapeutic starting points are developed.

Goals, values, needs and standards are brought to consciousness and *reflected*. Possible reasons for the discrepancy between perceived and desired state are gathered.

Exploration of the development of ideals and norms from the personal past. The origin of ideals and norms is clarified based on the biography of the patient to better understand how values were formed and developed in one's own history.

Clarification means the identification of changes in perception rather than reality or concrete action. The patient is to develop insight into his own functioning and schemes.

Work on *self-instruction*. Self-control is practiced through adequate self-instruction so that long-term consequences can prevail over short-term consequences.

Regulation, comprises behavioral, body or emotion regulation and can be achieved using stress-management techniques, physical exercise or self-regulatory training.

Procedure

The patients received 25±3 sessions of weekly integrative CBT plus one of the add-ons, EFT or SR (Babl et al., 2016). In both treatment conditions therapists received an extra five-day training; in the CBT + EFT condition they were trained in emotion-focused interventions while in the CBT + SR condition therapists were given in-depth insights into self-regulatory concepts. Leslie Greenberg, the founder of Emotion-Focused Therapy, lead part of the therapist training for the EFT condition, and the rest as well as the supervision was provided by trainers certified for this approach (Babl et al., 2016; Caspar, 2015). The deepening of self-regulation was

carried out by expert clinicians with an initial workshop by Charles Carver, a prominent author of the Self-Regulation model. Both groups were instructed to integrate the respective interventions whenever useful. Therapist adherence was then assessed at baseline and termination as well as twice for intermediate measurements (sessions 8 and 16). All therapy sessions at the university outpatient clinic are regularly video recorded. Recordings served as rating material for therapist adherence to CBT + EFT and CBT + SR. The rating of adherence was performed using the ELAN Coding Software (see materials section), which was found to be suitable for rating the duration and frequency of specific therapeutic interventions. While the video played, the beginning and end points of EFT-specific interventions (empty-chair work, two-chair work, focusing and empathy) and SR-specific interventions (explanation of the self-regulation-model, reflection of goals and standards, development of ideals and norms, clarification, self-instruction, regulation) were marked on different tracks. In order to evaluate the collected data of the video ratings, they were first exported from the ELAN Coding Software as "On tab-limited text", which could then be imported into Excel and SPSS. The output format (hh:mm:ss) was converted into industry minutes (hh: mm: ss.ms * 60 * 24) to make it compatible with SPSS calculations.

Results

Hypothesis one states that in the CBT + EFT condition the proportion of EFT interventions is greater than the proportion of SR interventions. Figure 1 illustrates the therapeutic interventions in the emotion-focused condition, with EFT techniques being performed during about a quarter of the time. As expected, SR interventions were only detectable to a negligible extent (0.10%). The right-hand pie chart details the use of EFT interventions. Empathy (12.74%) was the largest contributor, followed by two-chair work (7.14%), focusing (2.94%) and empty chair work (1.65%).

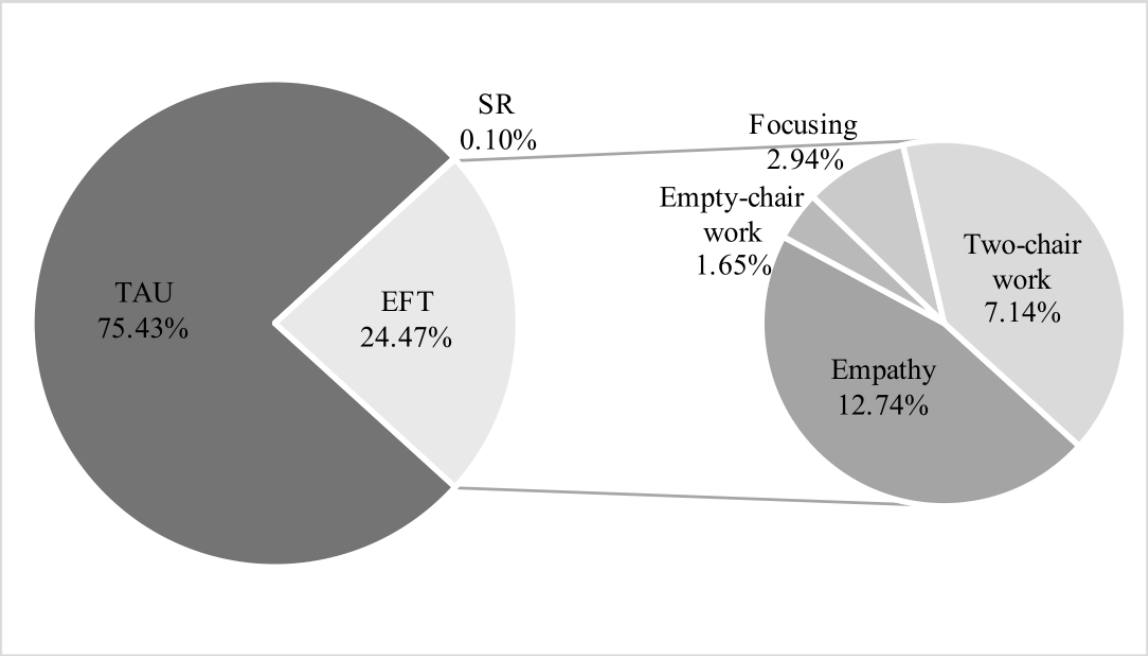

Figure 1. Left Pie Chart: Share of CBT, EFT and SR interventions in the total time of all therapy sessions of the CBT + EFT condition. Right Pie Chart: Proportion of each EFT intervention.

In the CBT + SR condition, the percentage of SR interventions was greater than the one of EFT interventions. Figure 2 gives an overview of the interventions associated with the self-regulation condition. SR interventions were found in 18.78% of the time, whereas only a very small number of interventions rated as belonging to SR were performed. A closer look at the right-hand pie chart shows that the reflection of goals and values (11.66%), the development of ideals and norms (2.48%) and regulation (2.39%) represented a large proportion of SR-specific interventions used.

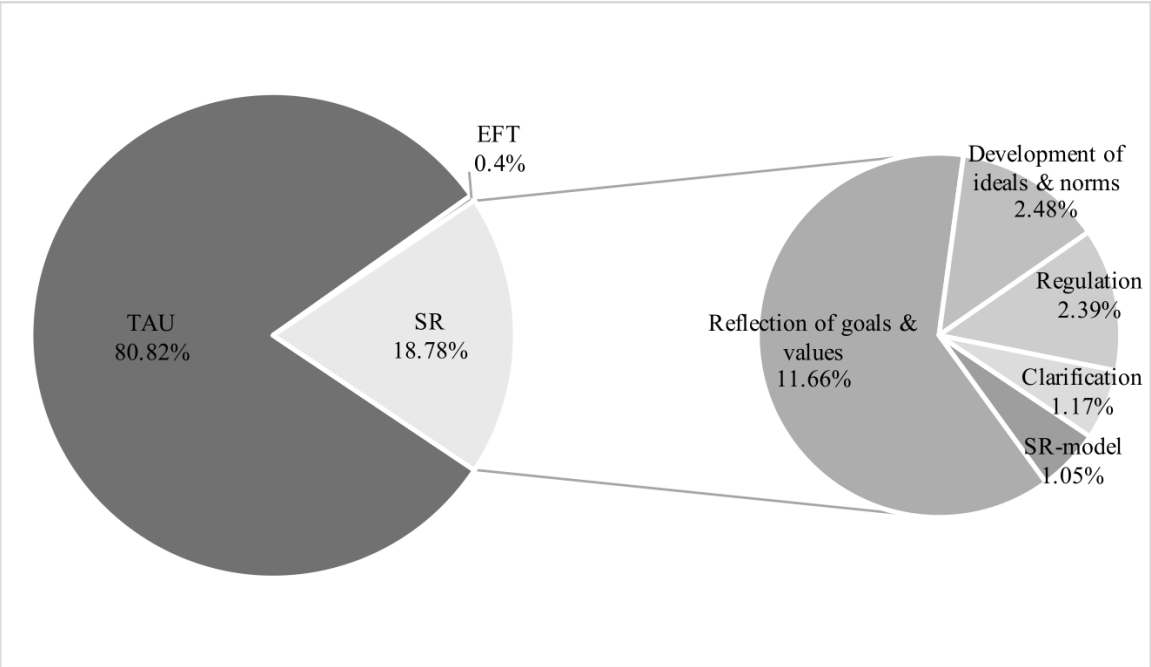

Figure 2. Left Pie Chart: Percentage of CBT, SR and EFT interventions in the total time of all therapy sessions of the CBT + SR condition. Right Pie Chart: Proportion of SR-specific interventions.

In addition to the examination of the main hypothesis, explorative analyses on the pattern of EFT and SR-specific interventions across the different therapy sessions were carried out. Figure 3 displays which EFT interventions were realized to what extent. Generally, EFT-specific interventions increased over the course of therapy (17.93% in session 1, 28.96% in session 8, 23.17% in session 16) reaching a peak in the 24th session (31.65%). During sessions 1, 8 and 16 the most common intervention was empathy in all its forms.

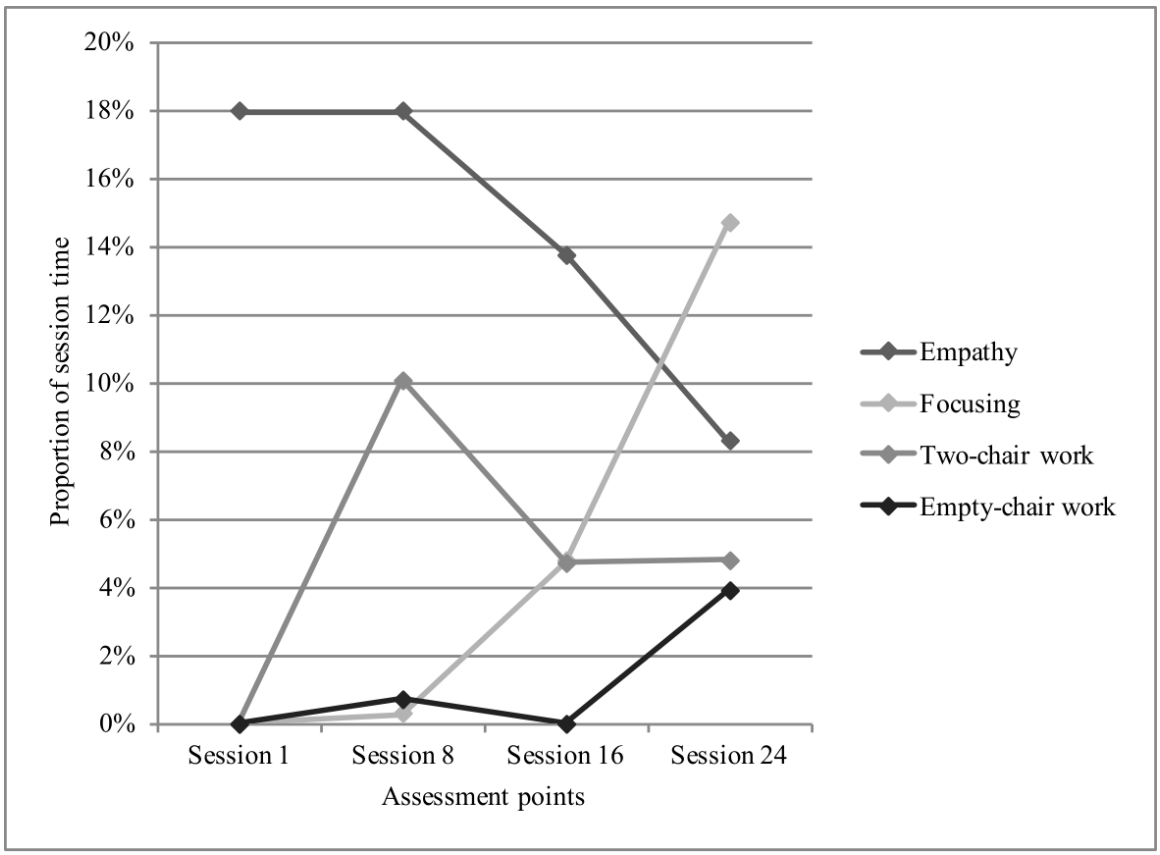

Figure 3. Share of EFT-specific interventions, separately for the 1st, 8th, 16th and 24th sessions.

Figure 4 depicts the proportion of SR-specific interventions at the four assessment points (20.85% in session 1, 18.36% in session 8, 24.25% in session 16 and 20.42% in session 24). The explanation and discussion of the model of self-regulation was barely realized. The most commonly used intervention was reflection of goals and values, exceeded only in session 16 by regulation (behavioral, body and emotion regulation).

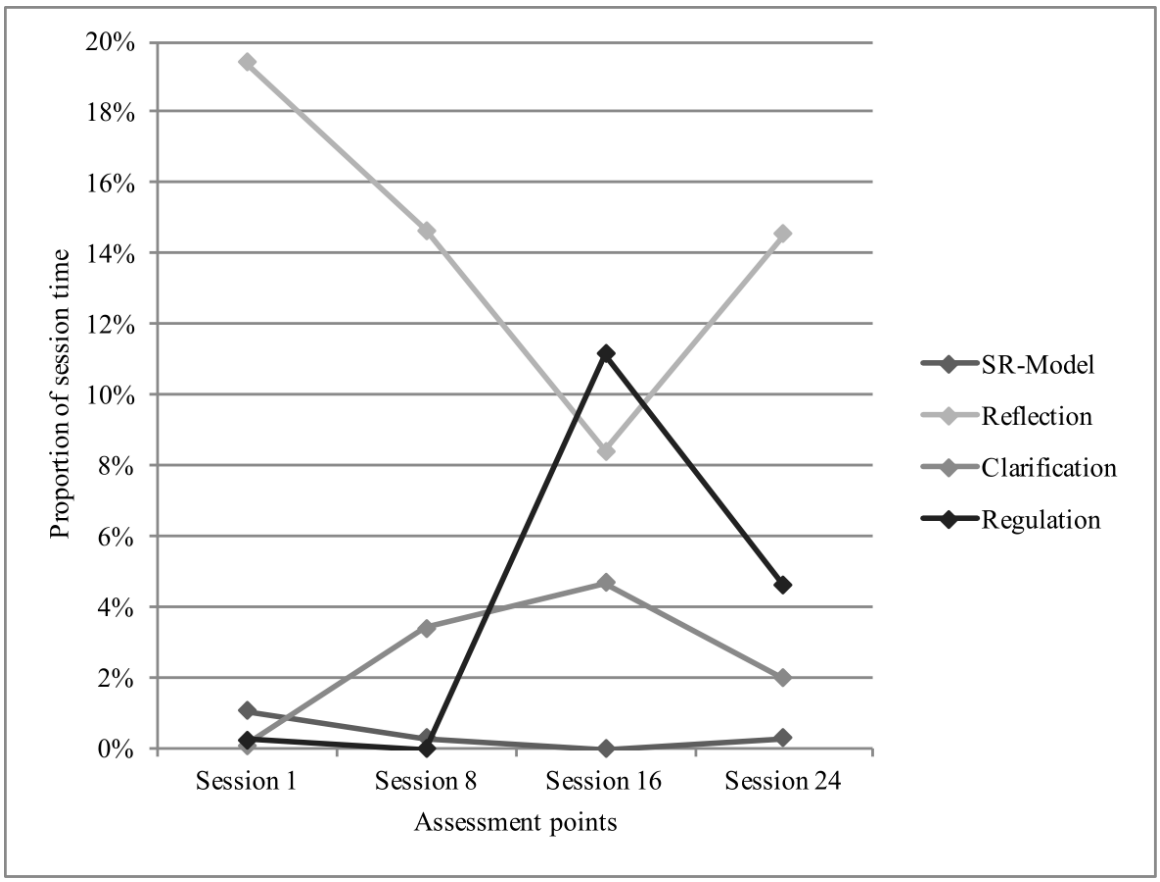

Figure 4. Proportion of SR-specific interventions, separately for sessions 1, 8, 16 and 24.

For a check of agreement, 20% of the therapy sessions, were coded by a second, independent rater. Two 1st, 8th, 16th and 24th sessions were included per condition. Intraclass correlation (Wirtz & Caspar, 2002) was used to calculate the inter-rater reliability (ICC = .896, p = .000). The agreement between the raters was high (Fleiss, Levin, & Paik, 2003). Considering the intraclass correlation coefficients for each condition separately, one obtains an ICC of .955 (p = .000) for TAU + EFT, which corresponds to a very high agreement, and an ICC of .477 (p = .000) for the TAU + SR condition, indicating a mean size fit (Fleiss et al., 2003).

Discussion

This study used video-based adherence ratings to investigate adherence to treatment in an integrative randomized-controlled trial with add-on design. Treatment

arms were broken down into specific therapeutic interventions to rate the proportion of session time dedicated to interventions specific to the respective treatment conditions. Overall, therapists were adherent to their treatment condition. As expected, more EFT than SR was performed in the CBT + EFT condition and vice versa. Further, the proportion of EFT interventions carried out in CBT + EFT was higher than the proportion of SR interventions in CBT + SR. This observation may be due to the different nature of EFT and SR: While EFT is very practice-oriented and consists of concrete interventions, self-regulation depicts a rather theoretical approach from which certain interventions can be derived or retrospectively assigned to.

Further, it was investigated whether the therapists used techniques specific to the other study condition. Therapists largely refrained from using interventions that were assigned to the respective other treatment condition, with the exception of some interventions expressing empathy in the CBT + SR condition. One factor that might help explain the repeated use of empathy not only in the CBT + EFT but also in the CBT + SR condition is that empathy has been identified as a common factor in psychotherapy, supporting both, the therapeutic relationship and affect regulation (Greenberg, 2011). Since empathy plays such a large role in conducting psychotherapy (Weinberger, 2014) it seems obvious that it was used by all therapists, and the distinction between EFT and therapy in general is somewhat blurred.

At the four assessment times (session 1, 8, 16, and 24), type and proportion of interventions differed meaningfully in both conditions. While empathy (EFT) and reflection of goals and values (SR) were predominantly performed in first sessions and less over the course of psychotherapy, the use of most other interventions increased and was larger in later sessions. In contrast, focusing was not practiced at first but increased with treatment duration. This makes sense because in the beginning of therapy, the focus is on building a working relationship, empathy being an

indispensable component. Later, the relationship is consolidated and it is reasonable that therapists subsequently carry out more exploration and treatment of emotions, which is in line with EFT theory (Greenberg, 2011).

Chair work in EFT aims at starting clarification-oriented processes (Greenberg, 2015), meaning to increase awareness, reflect and gain insight into previously unconscious matters. Two-chair work reached its peak in the 8th session, while empty-chair work was conducted little overall. It can thus be assumed that patients in the TAU + EFT condition faced confrontation processes in the early phase of therapy, which in terms of general change mechanisms corresponds to clarification. However, the absolute frequency of chair interventions was comparably low.

A fluctuating use of interventions was also found in the TAU + SR condition. The reflection of goals and values initially took up a great deal of time and declined over the course of therapy, reaching another peak at the end of therapy. It is plausible that therapists initially used the reflection of goals and values to clarify the individual needs and therapy goals before eventually evaluating the achievement of those goals. Alike the CBT + EFT condition, where empathy and focusing exhibited an interaction-effect, in the CBT + SR condition the reflection of goals and values was superseded by regulation. With regard to general change mechanisms as proposed by Grawe (1995), this suggests increased problem solving in the middle phase of psychotherapy, as would be expected in cognitive-behavioral therapies. The explanation and discussion of the self-regulation model was used little. This somewhat challenges the successful realization of the CBT + SR condition: First, because the explanation of the self-regulatory model was considered central in this condition (Babl et al., 2016) and second because the model was considered a well-suited starting point of psychotherapy according to Carver & Scheier (2004). It is very likely, however, that the introduction of the self-regulation model was realized

somewhere between sessions two and seven and could not be detected by assessments of sessions 1 and 8.

The ELAN Coding Software was helpful in assessing therapeutic adherence. This method could build a basis for others aiming to measure adherence in integrative or comparative studies. The resulting quantitative data can easily be used for further analyses.

The relationships between adherence and outcome should be examined once the RCT this study builds on is completed. The following questions should be answered: What is too much or too little adherence? A study by Castonguay et al. (1996) suggests a curvilinear relationship between adherence and outcome – with too much or too little being detrimental. How is variance in adherence across therapy sessions related to treatment outcome? Previously, Barber et al. (2006) found that when alliance was high, adherence was irrelevant, but when it was low, moderate levels of adherence were most effective. Thus, the therapeutic alliance and symptom measures should be considered when choosing suitable therapy outcome measures. However, detecting the true association of adherence and outcome will require sophisticated modeling and larger sample sizes that are currently not available due to the labor intensiveness of human behavioral coding (Atkins, Steyvers, Imel, & Smyth, 2014).

In conclusion, therapist adherence can be measured in integrative randomized-controlled trials with add-on design. Therapists did adhere to treatment and performed interventions specific CBT + EFT or CBT + SR on average one quarter of the session time, indicating not only a theoretical but also a practical difference between the two treatment conditions.

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2.3 Article 3

Babl, A. & Perry, J. C. (under revision). Comparing Change in Defense Mechanisms in Patients with and without Personality Disorder: A Meta-Analysis of Psychotherapy Outcome Studies. Submitted to *Psychotherapy Research*,

Comparing Change in Defense Mechanisms in Patients with and without Personality Disorder: A Meta-Analysis of Psychotherapy Outcome Studies

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Abstract

Defenses are fundamental mechanisms that underlie basic personality functioning, affecting both symptoms and adaptation. This meta-analysis examines those studies that measured change in defenses in patients with and without personality disorders over the course of psychotherapy in relationship to other outcomes. There is a great need to identify predictors of treatment response, and the analysis of defense mechanisms is a promising approach. Sixteen longitudinal studies meeting inclusion criteria for psychotherapy studies were located. They all used a standardized assessment method for rating defenses before and after treatment, thus allowing for the calculation of raw change and effect size, as well as reporting other outcomes. The studies used one observer-rated method, the Defense Mechanisms Rating Scale (DMRS) and one self-report method, the Defense Style Questionnaire (DSQ). They reported results for individual defenses, defense levels, defense styles and Overall Defensive Functioning (ODF), which reflects the average level of adaptation. *Overall Defensive Functioning* improved significantly in all studies reporting it (mean Effect Size = 1.34) while fewer studies reported results broken down by defense levels or individual defenses. These findings converged with changes in symptoms and functioning. The proportion of personality disorders in a treatment arm did not significantly affect treatment response, controlling for other variables. It seems that patients with personality disorders improve like patients with other psychiatric disorders over the course of psychotherapy and are not associated with less change. They might just require longer therapies to reach a healthy range of defensive functioning.

Keywords: defensive functioning, psychotherapy, personality disorders, meta-analysis, outcome studies

Introduction

Personality disorders have widely been viewed as profound and resistant to treatment as evidence indicates that core conflicts of personality disorders indeed reflect problems at the level of social relationships and interactions (Sachse, Fasbender, Breil & Sachse, 2011). Interestingly, it appears that the characteristics of personality disorders often occur in less pronounced forms in patients with axis I disorders, such as major depression, as well as in the general population. Personality disorders may therefore represent extreme manifestations of healthy psychological processes (Fiedler, 2007), used to deal well with meaningful stressors. A promising approach to investigate these psychological processes on a dimensional scale is the study and monitoring of defense mechanisms. The present meta-analysis therefore investigated the change of defense mechanisms over the course of psychotherapy for differential effects and may help to better understand related differences underlying axis I and II disorders.

Defense mechanisms have been one of the most persistent constructs in psychoanalysis, dynamic psychiatry and psychology in understanding and treating clinical psychopathology (Perry & Bond, 2012) ever since first recognized by Sigmund Freud as a means of avoiding "psychic pain" (Freud, 1893-1895). Freud described defensive functioning as both adaptive and pathological depending on the circumstances and frequency with which the mechanism was applied (Freud, 1894). He recognized that his patients used repression as a form of protection from the pain associated with conflicting thoughts, ideas, and affects (Freud, 1893-1895). Further, he reported an intimate connection between specific defenses and particular disorders.

Several psychodynamic clinicians continued to describe and define specific defense mechanisms, and developed a three-level hierarchy of defenses: mature, neurotic and immature, according to their level of adaptation (Vaillant, 1971). The

highest adaptive level of defenses may represent potential repair mechanisms, while the lowest may play a role as survival strategies in the presence of real threats. Generally, it is believed that defense mechanisms advance op the hierarchy over life (Vaillant, 1976) and especially over the course of psychotherapy (Perry & Bond, 2012).

Defense mechanisms are linked to how individuals consciously or unconsciously handle a situation. They are defined as automatic psychological processes which protect the individual from anxiety and from unnecessary awareness of internal and external dangers and stressors (American Psychiatric Association (APA), 2000). All defense mechanisms can be adaptive in some situations, whereas in others or when used too frequently or inflexibly the very same mechanism can have rather harmful effects. Adaptive defenses typically maximize awareness of internal states and result in both positive outcome and the most effective psychological protection, whereas maladaptive defenses act to restrict or alter awareness of internal states and conflicts, thus limiting positive outcome (Bond & Vaillant, 1986; Kneepkens & Oakley, 1996). The assessment of defense mechanisms may be useful to indicate a patients' level of psychological functioning which therapists can address moment-to-moment in therapy (Perry & Bond, 2017).

A number of researchers confirmed and further developed the concept of a hierarchy of defenses (e.g. Bond, Gardner, Christian & Sigal, 1983; Perry & Cooper, 1989). Perry (1990) started to standardize and operationalize definitions and assessment procedures for defensive behavior. The method was designed to identify evidence for the operation of the constructs in any type of dynamically meaningful data, e.g. transcripts of therapy sessions (Perry, 1990). The development of systematic assessment methods for defensive functioning (Defense Style Questionnaire (DSQ); Bond, Gardner, Christian & Sigal, 1983; Andrews, Singh & Bond, 1993; Defense

Mechanism Rating Scale (DMRS); Perry, 1990) added great conceptual and methodological maturity to the domain. A derived defense scale consisting of a seven-level hierarchy of 28 defenses was implemented into *The Diagnostic and Statistical Manual of Mental Disorders* (DSM-IV, Appendix B; APA, 2000). As a result, defense mechanisms have prompted increasing research and clinical interest in recent years.

Most defense style studies were conducted with a cross-sectional design relating defenses to a variety of health and psychosocial variables across the life span. Only a limited number of studies addressed defenses from a longitudinal perspective (e.g. Hoglend & Perry, 1998; Despland, de Roten, Despars, Stigler & Perry, 2001; Casacalenda, Perry & Looper, 2002; Bond, 2004; Siefert, Hilsenroth, Blagys & Ackerman, 2006; DeFife & Hilsenroth, 2009, Kramer, de Roten, Perry & Despland, 2012; Perry, Presniak & Olson, 2013; Petraglia, Bhatia, de Roten, Despland & Drapeau, 2015) allowing to observe sustained change in defense style as a much more significant predictor of therapy outcome than a single, baseline defense score.

The aim of this first meta-analysis of defense studies is to summarize the results of all longitudinal studies with available data of patients with both axes I and II disorders who had been treated with diverse forms of psychotherapy in the individual and group setting.

Although validated measures are now available (DSQ, Andrews, Singh & Bond, 1993; DMRS; Perry, 1990), the assessment of defensive functioning is still costly in terms of time, which is why the average number of participants in previous studies was rather small. However, a sufficient sample size in this meta-analysis can answer questions regarding the generalizability of past research findings. Furthermore, the validity of hypothesized theoretical relationships between defenses and therapy outcome can be enhanced with several operationalizations (e.g. DSQ and

DMRS) of theoretical constructs (e.g. defensive functioning). The sample also provides a list of outcome-measures and thus facilitates the discovery of relationships between defenses and outcomes, which homogeneity may have suppressed. Moreover, differential effects have never systematically been investigated in a head-to-head comparison, and as part of a large-scale trend away from efficacy toward effectiveness studies, this is an important consideration.

With the above concerns in mind, we examined raw change and the change rate of defensive functioning over the course of psychotherapy in relationship to improvement in other outcome measures. Further, we investigated sample characteristics, including the proportion with depression and personality disorders, as well as treatment duration in relation to improvement. We examined the following hypotheses:

1. Studies will show significant improvement in overall defensive functioning and an increase in mature defenses as well as a decrease in immature defense categories from both an observer-rated (DMRS) and a self-report (DSQ) perspective.

2. Patients with depression will exhibit greater improvements in overall defensive functioning than patients with personality disorders. These differences will somewhat level out in long-term treatments.

3. Because short-term treatment durations may involve large state-changes, e.g. due to decrease in stress, depression, it is likely that short-term treatment may show moderate or larger effect sizes in the rate of change. However, in longer-term treatments (e.g. greater than one year), these same state-effects would be absorbed in the gradual trait changes. Hence the overall change effect size might be similar (moderate to large), while the rate of change might be smaller than in short-term studies. We will explore this hypothesis given the adequate variability of treatment durations.

4. Improvement in overall defensive functioning will correlate with improvement in other outcome measures from both patient and clinician perspectives.

Methods

Selection of Source Publications

We began by identifying psychotherapy studies addressing change in defense mechanisms that used a standardized assessment method for rating defenses before and after treatment (thus allowing for the calculation of raw change and effect sizes) as well as reporting other outcomes.

A systematic search of PsychINFO and PubMed, using the keywords „defense mechanism(s)“, „defensive functioning“, “defense style” and „defense(s)“ for the title, was conducted. This search turned up seventy-five articles, which were scanned for longitudinal data on defenses. Further, reference sections of all selected articles were considered for additional articles. Altogether 22 articles were recognized that provided defense data for at least two measuring times. However, since six publications were based on the same data used in earlier studies, only the original publications were included in the analysis to avoid counting contributions more than once. Only unique data was used when more than one publication existed from a study, e.g. DSQ from Bond and Perry in 2004; DMRS from Perry and Bond in 2012. As a result, 16 studies remained. Table 1 lists the authors and publications chosen in temporal order of appearance, with the complete citations in the reference section.

Table 1. Selected characteristics of studies included in meta-analysis

Study Authors	Sample characteristics (PD vs. non-PD)	Outcome measures
Winston (1994)	100% PD, primarily Cluster C and B mix	PICS, SCL-90-R, SAS, TC, TAD
Kneepkens (1996)	100% recurrent major depression	DSQ, CES-D
Albucher (1998)	100% obsessive-compulsive-disorder	DSQ, BDI, YBS
Akkerman (1999)	100% major depression	DSQ, SCL-90-R, EPI
Perry (2001)	80% PD and 80% major depression	DMRS
Hersoug (2002)	65% PD, not specified, 67% anxiety disorders	DMRS, DSQ, SCL-90-R, IIP, GAS, WAI
Drapeau (2003)	38% PD, 62% major depression, 36% anxiety disorder	DMRS
Heldt (2003)	100% panic disorder	DSQ, HRS-A, CGIS
Bond (2004)	75% PD, mixed Cluster B and C	DSQ, SCL-90-R, GAF, HRS-D
Svartberg (2004)	100% PD, Cluster C	DMRS, SCL-90-R, IIP, MCMI
Kipper (2005)	100% panic disorder	DSQ
Kramer (2009)	100% adjustment disorder, 22% PD	DMRS, SCL-90-R, CAP
Roy (2009)	not noted	DMRS
Kramer (2013)	100% recurrent major depression	DMRS, SCL-90-R, HRS-D, CAP
Hill (2015)	100% binge eating disorder, 41% major depression	DMRS
Perry (2017)	50% PD, Cluster C, 100% major depression	DMRS, BDI, HRS-D

Note. PICS Psychotherapy Interaction Coding System, *SCL-90-R* Symptom Check List Revised, *SAS* Social Adjustment Scale, *TC* Target Complaints, *TAD* Therapist Addressing Defenses, *DSQ* Defense Style Questionnaire, *CES-D* Center for Epidemiologic Studies-Depression, *BDI* Beck Depression Inventory, *YBS* Yale-Brown Obsessive Compulsive Scale, *EPI* Eysenck Personality Inventory, *DMRS* Defense Mechanism Rating Scale, *IIP* Inventory of Interpersonal Problems, *GAS* Global Assessment Scale, *WAI* Working Alliance Inventory, *HRS-A* Hamilton Rating Scale Anxiety, *CGIS* Clinical Global Impression of Severity, *GAF* Global Assessment of Functioning Score, *HRS-D* Hamilton Depression Rating Scale, *MCMI* Millon Clinical Multiaxial Inventory, *CAP* Coping Action Patterns

Data abstraction

The first author read all articles and filled out two study-data entry forms rating important features of the studies numerically coded. The second author reviewed any questions and resolved any problems or discrepancies as they arose. The first study-data entry form systematically collected data on treatment type, setting, design of the study, diagnostic method, inclusion and exclusion criteria, age, gender, education, diagnoses, therapist, treatment duration and dropouts. The second form systematically assessed all outcome measures (mean, standard deviation) by treatment arm and measuring time (intake, termination, follow-up). The procedure was conducted separately for all active treatment arms (20) of the 16 studies included in the meta-analysis since some studies presented multiple treatment arms with differing

characteristics. In the following, analyses and data are presented not by studies but by active treatment arms.

Participants

The mean age of the sample was 37 years, ranging from 24 to 47. Of all participants 72% were female. The sample had an average of 14 years of education and received an average of 52 weeks of treatment. The majority of patients was diagnosed with axis I disorders, most frequently recurrent major depression (61 %) and anxiety disorders (49 %), while 39% presented with axis II disorders (for a detailed distribution of diagnoses see table 2). Often axes I and II disorders occurred co-morbid. Patients in this meta-analysis were mostly diagnosed through a specific clinical interview or a specific structured interview (e.g. Structured Clinical Interview for DSM-IV; First, Spitzer, Gibbon & Williams, 1995; First, Gibbon, Spitzer, Benjamin & Williams, 1997). All ten studies, which reported inclusion and exclusion criteria, agreed on excluding patients with organic brain damage or mental retardation, substance abuse/dependence and psychotic disorders.

Table 2. Sociodemographic characteristics of the patients (N=20)

Characteristics	N study arm	Mean	SD
Mean age, in years	20	37	6.06
Education, in years	9	14	0.97
Gender, % female	20	72	14.48
Personality disorders	19	39	33.64
Major depression	14	61	37.72
Dysthymia	6	30	16.58
Anxiety disorders	5	49	30.56
Generalized anxiety disorder	6	34	23.91
Panic disorder	5	11	8.87
Social phobia	3	45	15.28
Eating disorders	5	23	43.40
Substance use disorders	4	6	12.50

Note. All means are presented in percent, if not otherwise noted. Patients may have received more than one axis I and more than one axis II diagnosis as well as axis I and II diagnoses combined.

Therapists

Fourteen studies described the practitioners: three included trainees, five included licensed therapists only and six relied on therapists passing a competence test. Practitioners had on average nine years of experience, ranging from three to nineteen years, in their respective therapy type. In more than half of the studies therapists worked with a manual or explicit guideline while in the other half they did not. Therapist adherence to treatment type and competence in delivering the treatment was assessed in 25% of the studies. In one third of the studies practitioners received supervision.

Interventions

Patients in this meta-analysis received therapies of different types (schools), with varying intensities and ranging from weeks to years. The interventions have been grouped into four categories equally representative for four different duration periods (ultra short, short-term, medium length and long-term) as well as four different types of interventions (non-therapeutic interventions, group-therapies, short dynamic psychotherapies, and long-term psychotherapies). For information on specific interventions and treatment duration in weeks see table 3.

Table 3. Treatment duration and therapy type (orientation)

Duration category	Therapy type (orientation)	Duration (weeks)
Ultra short/	Counseling (C)	1
Non-therapeutic Interventions	Clinical Management (CM)	1
(1 month)	Brief Psychodynamic Investigation (BPI)	4
Short-term/	Group Behavior Therapy (GBT)	7
Group-therapies	Brief Cognitive Behavioral Group Psychotherapy (BCBGP)	16
(3-6 month)	Group Psychodynamic Interpersonal Psychotherapy (GPIP)	16
	Medication only (MED)	16
Medium length/	Cognitive Behavioral Therapy (CBT)	26
Short dynamic therapies	Dynamic Psychotherapy (DP)	26
(6-12 months)	Supportive Psychotherapy (SP)	29
	Brief Dynamic Psychotherapy (BDP)	32
	Short-term Dynamic Psychotherapy (STDP)	44
	Brief Adaptive Psychotherapy (BAP)	44
Long-term	Dynamic Psychotherapy (DP)	52/ 104
Long (dynamic) therapies	Cognitive Therapy (CT)	104
(> 1 year)	Psychoanalysis (PA)	104
	Completed Psychoanalysis (CPA)	156
	Long-term Dynamic Psychotherapy (LTDP)	156

Measures

Studies used one observer-rated method, the Defense Mechanisms Rating Scale (DMRS) and/or one self-report method, the Defense Style Questionnaire (DSQ) to measure defensive functioning. Studies reported results for individual defenses, defense levels, defense styles and Overall Defensive Functioning (ODF). For an overview see table 4.

The Defense Mechanism Rating Scale (Perry, 1990) is a quantitative observer-rated method in Appendix B of the DSM-IV. Each of 28 defenses is identified whenever it occurs in the session (transcript). Three levels of scoring are used, all of which are continuous ratio scales.

Individual Defense Score. A proportional (%) score is calculated by dividing the number of times each defense was identified by the total instances of all defenses for the session.

Defense Level Score. The defenses are arranged into seven defense levels hierarchically arranged by their general level of adaptation. Each defense level is represented by a proportional or percentage score.

Overall Defensive Functioning (ODF). The ODF score is obtained by taking the average of

each defense level score, weighted by its order in the hierarchy, yielding a number between one (lowest) and seven (highest).

The Defense Style Questionnaire (Andrews, Singh, & Bond, 1993) is a self-report questionnaire with 88 items. Previous factor analysis yielded four factors of presumed defense mechanisms, which were called defense styles (Ackerman, Lewin & Carr, 1999). The styles are ranked on a continuum of adaptation from 1) maladaptive, 2) image distorting and 3) self-sacrificing to 4) adaptive. An overall defensive functioning score can be calculated, with a higher score indicating greater adaptation or maturity.

Table 4. The hierarchy of defenses and adaptation (Perry & Bond, 2012)

Order	Defense Style	Defense Level	Individual Defenses
7	Mature	High adaptive	Affiliation, altruism, anticipation, humor, self-assertion, self-observation, sublimation, suppression
6	Neurotic	Obsessional	Isolation of affect, intellectualization, undoing
5a	Neurotic	Hysterical	Repression, dissociation
5b	Neurotic	Other neurotic	Reaction formation, displacement
4	Immature	Minor image-distorting	Devaluation of self or others, idealization of self or others, omnipotence
3	Immature	Disavowal	Denial, rationalization, projection, autistic fantasy
2	Immature	Major image-distorting	Splitting of self or others, projective identification
1	Immature	Action	Acting out, passive aggression, help-rejecting complaining
1-7		Overall defensive functioning	Summary variable, consisting of the mean of each defense used, each weighted by its level

Two types of outcome measures were chosen for this meta-analysis based on the most frequently used instruments in the 17 included studies. Measures of psychopathology and symptoms included the Symptom Checklist-90-Revised, the Hamilton Depression Rating Scale and the Hamilton Anxiety Rating Scale. Another set of outcome measures comprised global and social functioning, namely the Global Assessment of Functioning, the Inventory of Interpersonal Problems and the Social Adjustment Scale. For an overview of measuring instruments see table 5.

Most frequently used symptom outcome measures

The Symptom Checklist-90-Revised (SCL-90-R; Derogatis & Unger, 2010) is an instrument designed to evaluate a broad range of psychological problems and symptoms of

psychopathology. The SCL-90-R has nine subscales: somatization, obsessive-compulsive, interpersonal sensitivity, depression, anxiety, hostility, phobic anxiety, paranoid ideation, psychoticism. The sum of all nine subscales adds up to the Global Severity Index (GSI), which can be used as a summary of the test, reflecting overall psychological distress.

The Hamilton Depression Rating Scale (HRS-D, Hamilton, 1960) is a well-established clinician-rated assessment of depressive symptom severity and encompasses psychological and somatic symptoms. The clinician rates the severity of these symptoms based on patient reports and clinical impression.

The Hamilton Anxiety Rating Scale (HRS-A; Hamilton, 1959) is, alike, the most widely used semi-structured assessment scale to evaluate anxiety disorders.

Most frequently used functioning outcome measures

The Global Assessment of Functioning (GAF; Hall, 1995) is a single rating scale for evaluating a person's psychological, social and occupational functioning on a hypothetical continuum from sickest to healthiest individual. The scale is divided into ten equal parts and provides defining characteristics for each ten-point interval.

The Inventory of Interpersonal Problems (IIP; Horowitz, Rosenberg, Baer, Ureño & Villaseñor, 1988) is a questionnaire for the self-assessment of interpersonal problems. With the help of this instrument patients can describe how much they suffer from specific difficulties in social situations. The IIP-32 consists of 32 items and its eight scales correspond to the octants of the Interpersonal Circle (Kiesler, 1997): too autocratic/dominant, too expressive/intrusive, too caring/friendly, too exploitable/ resilient, too insecure/obsequious, too introverted/ socially avoidant, too repellent/cold, too quarrelsome/ competitive. In addition, a total value is formed which characterizes the extent of interpersonal problems. The IIP-32 has shown adequate psychometric properties (Horowitz, Rosenberg, Baer, Ureño & Villaseñor, 1988).

The Social Adjustment Scale (SAS; Weissmann, 1999) covers the patient's role performance, interpersonal relationships, friction, feelings and satisfaction with work, and social and leisure activities. The questionnaire consists of 54 items assessing six social role areas (work, activities, family relationship, marital relationship, parental role, and role within the family unit).

Table 5. Measuring instruments

Instrument	Abbr.	Aim
A. Defense Mechanisms		
Defense Score Questionnaire	DSQ	defense level scores, ODF
Defense Mechanism Rating Scale	DMRS	individual defense scores, defense level scores, ODF
B. Symptom severity		
Symptom Checklist-90-Revised	SCL-90-R	psychiatric symptoms
Hamilton Depression Rating Scale	HAM-D	severity of depressive symptoms
Hamilton Anxiety Rating Scale	HAM-A	severity of anxiety symptoms
C. Functioning		
Global Assessment of Functioning	GAF	global functioning
Social Adjustment Scale	SAS	social functioning
Inventory of Interpersonal Problems	IIP	interpersonal problems

Statistical Analysis

All analyses were conducted with SAS 9.4 for Windows (SAS Institute, 2012). Because we had specific, directional hypotheses, the alpha level was set to .10. Regression models were calculated for each measure for which there were two or more observations, displaying raw change as well as rate of change. The effect sizes for each study's self-report and observer-rated measures were combined to create a mean ES for each study and ultimately the overall sample.

Results

Table 6 displays the modeled data for defensive functioning; the initial and final medians and means of the defense level scores, the amount and rate of change for the overall sample as well as the effect sizes and a statistical test of the null-hypothesis that the slope is zero. Thirteen treatment arms reported DMRS overall defensive functioning. ODF increased significantly over the course of psychotherapy yielding a mean effect size of 1.34 (95%-distribution-free-C.I. = 0.70 to 1.98, p=.000)

as did the use of high adaptive/mature defenses with an effect size of 1.26 (p=.001). In general, the high-level defenses (7) showed a positive direction of change, while lower levels (1 through 6) showed a negative direction of change (see Table 6). The neurotic defense category (levels 5a, 5b and 6) exhibited no significant change from intake to termination with an effect size of 0.03 (p>.05), whereas the immature defenses decreased meaningfully over time with an effect size of .45 (p=.09).

Table 6. Change in defense style with psychotherapy over time

		Intake Score			Termination Score			Raw Difference					
	N	Median	Mean	SD	Median	Mean	SD	Median	Mean	SD	Rate of change*	ES	p
Defense levels													
7. High adaptive	9	4.12	5.64	3.87	9.82	11.32	5.97	-4.00	-5.64	4.54	7.37 (0.17)	1.26	.000
6. Obsessional	8	22.97	20.33	7.36	23.06	20.68	11.87	-0.07	-0.34	7.52	-16.76 (0.38)	-.01	.820
5a. Hysterical	7	10.26	14.99	7.99	9.30	12.67	7.85	3.40	2.33	2.46	-3.93 (-0.07)	.28	.10
5b. Other neurotic	7	12.40	15.98	7.99	14.10	13.84	7.57	2.83	2.14	2.45	-4.26 (-0.09)	.21	.205
4. Minor image-distorting	8	13.19	12.20	3.58	8.28	9.68	5.52	2.77	2.53	3.14	-13.18 (-0.32)	.30	.102
3. Disavowal	8	16.95	16.46	6.77	15.15	13.73	8.93	2.20	2.73	2.87	-6.13 (-0.15)	.28	.061
2. Major image-distorting	8	1.95	2.63	2.13	1.55	2.06	1.80	0.49	0.57	1.18	-0.76 (-0.05)	.06	.629
1. Action	8	7.40	6.66	3.08	4.70	4.22	2.74	2.52	2.44	1.17	-4.99 (-0.12)	.50	.000
Tripartite categories													
High adaptive (level 7)	9	4.12	5.64	3.87	9.82	11.32	5.97	-4.00	-5.64	4.54	7.37 (0.17)	1.26	.000
Neurotic (levels 5 and 6)	6	52.05	53.17	13.57	51.25	52.06	19.71	0.80	1.11	7.24	-0.08(-0.03)	.03	.911
Immature (levels 1 to 4)	6	28.10	25.34	16.38	18.68	20.10	13.72	3.78	5.24	5.86	-7.84 (-0.19)	.45	.09
Summary variables (overall defensive functioning)													
ODF of DSQ	2	3.93	3.93	0.08	4.13	4.13	0.03	-0.20	-0.20	0.06	0.27 (0.01)	.52	.140
ODF of DMRS	13	4.41	4.16	0.71	4.87	4.87	0.40	-0.55	-0.72	0.64	1.03 (0.02)	1.34	.000

Note. *Rate of change is expressed as change per year and change per session (parentheses) in the proportion of defenses at each level. A rate of .001 indicates an increase of 0,1% of total defensive functioning attributed to the respective defense each session, or 1% each 10 sessions. NS = non-significant.

We examined differences in defense change with regard to measuring instrument, diagnostic group, treatment duration and therapy outcome.

First, Table 6 indicates a difference in change of ODF comparing the self-report DSQ and observer-rated DMRS measuring instrument. ODF changed less from the patient perspective (effect size = .52, p=.001) than it did from the observer perspective (effect size = 1.34, p=.000). The two studies that included DSQ-ODF also included DMRS- ODF, allowing a more direct comparison between the two measures.

A median one-way test indicated that the DMRS-ODF tended to be larger (chi-square 3.0, df=1, p=.08).

Second, the proportion of diagnoses of major depression and personality disorder were reported in a majority of treatment arms allowing us to examine their relationship to change in overall defensive functioning. Overall, the proportion of depressed patients per study arm correlated positively with ODF change (r=.57, n=9, p=.10), but when weighted by N in treatment arm that correlation decreased to the non-significant range (r=.28, n=9, p=.47). By contrast, the proportion of patients with personality disorders correlated mildly negative with ODF change (r=-.12, n=13, p=.71). However, when partialling out major depression and weighing by N in treatment arm the relationship with ODF change became slightly positive (r=.25, n=9, p=.54) albeit still non-significant. With the additional step of weighting the correlation by the study arm size, the correlation rose in magnitude and significance (r=.72, n=9, p=.04). This indicates a strong relationship between the proportion with a personality disorder and Effect Size of improvement, when major depression is partialled out.

Third, we examined treatment duration as a predictor of ODF change per therapy session, using regression models. While a linear model was significant, the best fit was found with a quadratic regression model (see Figure 1), showing that treatment duration generally influenced the rate of change in ODF (F=14.92, df=2,9, R^2=.768, p=.001).

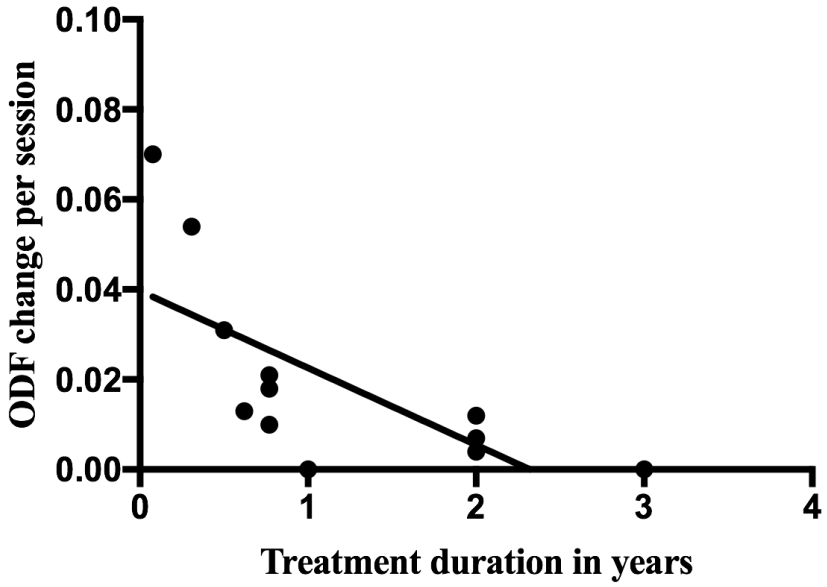

Figure 1. ODF change per session as a function of treatment duration in years

Finally, we examined change in DMRS-ODF (effect size=1.34) compared to mean change in all self-report measures (effect size=.91, SD=.74, sign-rank score=45.5, n=13, p=.000; weighted mean=.72, n=13, t=4.17, p=.001) and mean change in all observer-rated measures (effect size=1.01, SD=0.96, n=16, sign-rank score=68, p=.000; weighted ES=0.66, n=6, p=.000). ODF change correlated highly with change in observer-rated measures (r=.78, n=15, p=.000) but less so for self-report measures (r=.37, n=11, p=.26). The correlation with observer-rated measures remained of the same magnitude, when the duration of treatment, proportion of patients with personality disorders and proportion of those with major depression in the sample were partialled out, indicating a robust relationship between change in ODF and change in other observer-rated measures. The relationship to change in self-report measures diminished when treatment duration or proportion of personality disorderss in the study arm were partialled, but became near zero when the proportion with major depression was also partialled out (r=.07, n=9, p=.90).

Discussion

We found 16 studies that had measured changes in defenses and met our inclusion criteria. While 13 of the active study treatment arms used our main independent variable, Overall Defensive Functioning, other aspects of defensive functioning, such as the mature-neurotic-immature categories, were available on even fewer. Analyses employing additional variables, such as the proportion with major depression or a personality disorder, resulted in even lower power for those analyses. The data using the DSQ-ODF was limited to two treatment arms which also employed the DMRS ODF. As a result, this report could only detect findings that were of medium or greater effect size and relatively robust.

Our main finding upheld the first hypothesis, that ODF change was significant and large (median ES = 1.01, 95%-distribution-free-C.I. = 0.70 to 1.98). In fact, no study arm had an ES < 0.30. This suggests that our finding that defensive functioning improves with psychotherapy is very robust. The self-report DSQ-ODF based only on two study arms, evidenced positive change but about half the effect size for the observer-rated ODF.

Additional analyses examined the change in the hierarchy of defenses. Again as hypothesized, mature defenses increased significantly, and immature defenses (levels 1- 4) decreased (p=.09). Among the immature category, the strongest change (ES = .50) was for the level 1 action defenses – acting out, passive-aggression, and help-rejecting complaining – which are often found in personality disorders. Intermediate neurotic defenses displayed more study to study variability, resulting in no overall significant change. As discussed below, the study population (e.g. PDs vs. no PDs, proportion with depression), and treatment duration may also factor into expectations for change in neurotic defense levels. Basically, when change is largely due to state changes, e.g., improvement in a depressed state – one should expect a decrease in immature defenses to result in an increase in neurotic and mature

defenses. Conversely, when a longer term treatment is used resulting in trait changes, one may expect that a large decrease in immature and a modest decrease in neurotic defenses accompanies a large increase in mature defenses.

In general, Perry, Banon and Ianni (1999) found in psychotherapy studies of patients with personality disorders that self-report defense measures produced smaller effects than observer-rated ones. This finding may indicate that self-report measures tend to yield more conservative estimates of treatment effects (Svartberg, Stiles & Seltzer, 2004). On the one hand, given that defensive processes are largely or partly unconscious, patients might be less aware of their shift in defense use until such changes appear on the behavioral level, which may not be the case until the therapy has elicited stable effects. On the other hand, therapists' awareness regarding the concept of defenses may vary depending on the therapy school they originate in. In dynamic therapy, where therapists are usually familiar with the theory of defenses, these might be addressed immediately, which may not be the case in cognitive-behavioral therapy. Previous research (e.g. Winston, Winston, Wallner Samstag & Muran, 1994) indeed established a positive relationship between the frequency of a patient's defensive behavior and the therapist addressing these defenses.

In addition, therapy school may not only affect therapists in dealing with defenses but also affect treatment length. Dynamic therapies tend to last much longer than cognitive-behavioral treatments or group interventions, not to mention counseling or clinical management. In short therapies, weekly fluctuations might affect personal experience much more than in long-term therapies, where fluctuations are more likely to level out over time. This may be the case here, as DSQ and DMRS scores converged over time (i.e. regression to the mean). Indeed, evidence indicates that about half of the variance in these scores can be attributed to session to session variability and error (e.g. imperfect rater reliability) (Perry, 2001).

The other half of variance in reported change has been suggested to be related to within-subject changes (Perry, 2001). This is a considerable amount of change attributed to the subjects themselves, thus raising the question of whether these changes can best be described as situational (state) or personal (trait). In general, traits are more enduring, while states change with respect to internal and external stimuli (Bond & Perry, 2004). In the context of psychiatric diseases, the maladaptive use of defenses can be seen as part of the psychopathological process, i.e. when self-induced or externally induced stress occurs, their capacity to use mature adaptive defenses may diminish selectively (Bond & Perry, 2004). As patients regress, their least adaptive defenses emerge, i.e. they start to employ maladaptive defenses more frequently, which they may have used less often while they were well compensated (Bond & Perry, 2004). Therefore, the use of high-adaptive defenses might reflect more state-dependent phenomena rather than trait aspects early on in the treatment of personality disorders. At the same time, intermediate-level defenses have not been reported to change as much throughout shorter-term treatments and recovery, and might be more stable and trait-like (Akkerman, Lewin & Carr, 1999). Immature defenses settle in between the two.

In conclusion, the stability and variability of defenses seems to include both some trait and state characteristics. Adaptive defenses and to a lesser extend maladaptive defenses might be rather state-dependent phenomena while neurotic defenses may reflect trait aspects. Consequently, therapeutic interventions should foster the use of mature defenses and reduce the use of immature defenses.

The ambiguity of trait versus state components in immature defenses leads to the question of how these can be linked to the psychopathology of personality disorders. In previous studies, a close association was shown between immature

defense mechanisms and diagnoses as well as the core symptoms of PDs (e.g. Zanarini, Weingeroff & Frankenburg, 2009, Perry, Presniak, & Olson, 2013.

This meta-analysis found a general improvement in ODF over the treatment period within both patient groups, those with axis I and those with axis II disorders. Perry (2001) reported that patients presenting with personality disorders relied primarily on immature (about 50%) and neurotic (about 40%) defenses. Not surprisingly, they also used some high-adaptive defenses (about 10%) but in neither a consistent nor sufficient proportion to offset the effects of their less adaptive defenses, whereas axis I patients exhibited a much more distinct profile of defense use (Perry, 2001). The observed difference in ODF in patients with axis I and II disorders might thus be driven mainly by a difference in the proportion of immature defenses and thus trait-aspects. Quantitative profiles of defense levels found when considering personality disorders overall should be extended to include particular PDs. It is likely that certain types (e.g. cluster A) may have more stable defenses, whereas disorders known for instability (e.g. cluster B) would show more variability across situations and stressors. A difference in defenses between the two patient groups could emerge with regard to the amount and rate of change over time.

The amount of change in defensive functioning was measured as defense level at intake compared to that at discharge. This is important because change in defenses is believed to appear in a stepwise fashion, meaning that immature defenses trade up for neurotic defenses before eventually trading up for mature defenses (Perry & Bond, 2012). Patients with axis II disorders are considered to be more symptomatic and poorer in functioning, as reflected by greater reliance on low-level defenses and thus lower ODF at intake. Therefore, they would have to exhibit much greater raw change as compared to axis I patients until they reach defenses within the healthy-neurotic range. This is in line with recent research illustrating that, generally, individuals who

are more symptomatic at baseline (lower ODF, higher proportion of immature defenses) show greater treatment response (McMain et al., submitted). They may just need more time, which leads to considering the rate of change.

The rate of change in defensive functioning was measured as change per year in the proportion of defenses at each level. Bond and Perry (2004) found that subjects who initially scored high on the maladaptive defense style displayed a significant decrease over time, while those initially scoring low exhibited no significant change. Similarly, subjects who scored high on the neurotic style had a decrease in use over time, but those who initially scored low increased their use. This indicates that axis I patients may have already reached a defense style that allows them to become aware of and understand their problems, requiring only little additional progress to achieve changes on the behavioral level and thus, ultimately, reach the level of high-adaptive defenses. Axis II patients at treatment begin, however, demonstrate their specific disease-related behavior, relying heavily on low-level defenses with continuing patterns of unstable and disrupted functioning in early sessions (Perry, 2001). The delayed onset of improvement in patients with personality disorders compared to those without could therefore serve as one potential explanation of the difference in the rate of change in ODF between the two subsamples.

For a sustained period of time, personality disorders have been known to be particularly challenging to treat. This meta-analysis presented reasonable evidence for believing that especially defense mechanisms do change with psychotherapy and – even more noticeable – that defenses may serve as predictors of treatment response (e.g. Zanarini, Frankenburg, & Fitzmaurice, 2013). The fact that patients with axis II disorders demonstrated a decreased rate of change and an increased use of immature defenses compared to patients with axis I disorders suggests that more severely

diseased patients may simply require longer-term therapies to achieve a given level of improvement (Zanarini, Frankenburg & Fitzmaurice, 2013).

It was thus reasonable to investigate change in defenses with regard to treatment duration. In this meta-analysis, interventions were grouped into four duration categories, ultra-short (1 month), short (3-6 months), medium-length (6-12 months) and long-term interventions (>1 year). The best fit between duration of treatment and rate of change/session in ODF was found for a quadratic regression model.

First, ultra-short interventions included counseling, clinical management and brief dynamic investigations. For example, counseling and psychotherapy are often used interchangeably, although there are some important distinctions between the two. Counseling usually focuses on a specific problem, addresses it in the present-tense and takes steps to solve it, requiring few sessions. Psychotherapy, on the other hand, goes farther, considering overall patterns, chronic issues and recurrent feelings, thus demanding more sessions. The rate of improvement in a sample of 6,000 patients receiving on average five sessions of therapy (as offered in the ultra-short interventions) was only about 20% (Hansen, Lambert & Foreman, 2002).

Second, short-term therapies were held in the group setting and therefore might have resulted in a smaller dose of therapeutic components per participant than offered in individual therapy of longer durations. Few studies have been published on the dose-response relationship, but there is general consensus that about 15-20 sessions of therapy (as compared to 7-16 sessions here) are required for 50% of patients to improve (Hansen, Lambert & Foreman, 2002).

Third, medium-length treatments were de facto short dynamic psychotherapies. Brief dynamic psychotherapies concentrate on maladaptive patterns rather than highlighting adaptation and higher levels of functioning (Winston,

Winston, Wallner & Muran, 1994). The therapist's focus would then lie on the intermediate defenses (Pollack, Flegenheimer, & Winston, 1991). If this were the case, in medium-length treatments a notable success could only be brought about up to the field of the neurotic defense level.

Last, the smallest rates of change were observed in long-term therapies. True individual insight, which usually requires a longer period to be achieved, may eventually develop as the individual trades up neurotic defenses for high-adaptive defenses, thereby identifying and linking patterns without minimizing feelings, but in fact capitalizing on the information contained in those feelings (Drapeau, De Roten, Perry & Despland, 2003). Long-term therapies might therefore be required to enable a stable use of high-adaptive defenses.

Further, it is important to note that the four duration categories chosen in this meta-analysis were equally representative of different treatment types (non-therapeutic interventions, group-therapies, short-dynamic treatments and long-term therapies of different schools). This represents a confounding variable, meaning that both the dependent variable (change in defensive functioning) and the independent variable (treatment duration) could be influenced by a third factor, namely type of treatment.

Interestingly, aside from any effects of treatment duration or treatment type, improvement in defensive functioning does not appear to stop after treatment termination. Indeed, it may be that change in the level of defense may not occur until some time after therapy is completed. Vaillant (1971), who studied defense change in patients and healthy individuals found that in both groups change appeared years to decades later. Vaillant's studies (1976) suggest that longer term follow-up is needed to assess the impact of treatment on defensive structure.

Beyond that, and in line with previous studies (e.g. Perry & Bond, 2012),

results of this meta-analysis demonstrated that change in defenses during therapy was associated with improvement in both self-report and observer-rated measures over the follow-up period. The list of outcomes with several operationalizations of theoretical constructs in this meta-analysis (symptoms: e.g. SCL-90, HRS-D, HRS-A; functioning: e.g. GAF, IIP, SAS) and the consideration of self-report and observer-rated measures enhanced the validity of the hypothesized relationships. Other studies obtained the same results for both patients with depressive and personality disorders (e.g. Perry, 2001; Drapeau, De Roten, Perry & Despand, 2003) and for different treatment types (e.g. Ackermann, Lewin & Carr, 1999; Johansen, Krebs, Svartberg, Stiles & Holen, 2011) of varying durations (eg. Kramer, de Roten, Michel & Despland, 2009; Kramer, de Roten, Perry & Despland, 2013). Overall, the findings across studies indicate a clear correlation between severity of psychopathology and maladaptiveness of defenses. One might therefore wonder whether a measure of defense style could serve as a substitute for a measure of health. However, the correlation is not perfect and the evaluation of defenses seems to offer a different dimension than any overall rating of symptoms (Bond, 2004). This supports the notion that defensive behavior is our first - automatic or spontaneous - adaptive response to threat and may play a role in the formation of symptoms (Fenichel, 1945). Previous studies concluded that defenses may play a mediating role in symptom and functioning change (e.g. Hill et al., 2015).

Although it could not be determined whether defense change caused symptom change or vice versa, or whether both changed as a function of some third factor, change in overall defensive functioning was highly correlated and a potent predictor of change in symptoms and functioning (Bond, 2004; Perry & Bond, 2012), highly significant so in the case of observer-rated measures in this report. The assessment of defense mechanisms may be used to indicate patients' level of functioning (Perry,

2001). In a next step, they should thus be included in studies aiming to differentiate among those who drop out, continue but do poorly in treatment or do well in treatment.

Further, to address the causation of change, randomized controlled trials comparing change in defensive functioning of different psychotherapeutic interventions to a non-treatment control condition should be conducted.

This meta-analysis has most importantly overcome two limitations of design in previous research: first, it focused on change in defensive functioning instead of looking at defenses largely around the time of intake. Second, a sufficient sample size could answer questions concerning reasonable subgroups and generalizability of findings that previous studies could not. The findings outlined above are most generalizable to patients with major depression and personality disorders in psychotherapy for six to twelve months. It seems that patients with personality disorders are not associated with less change but get better like patients with major depression. We found a moderate albeit non-significant positive correlation between the proportion of personality disorders in a treatment arm and the effect size for overall defensive functioning. Personality disorder patients might start out with more trait-like impairment in defenses and just require longer treatment durations. Earlier studies, examining the processes by which interventions lead to improvement or deterioration in defensive functioning or other outcomes appeared quite promising (e.g. Despland, de Roten, Despars, Stigler & Perry, 2001) and should be extended.

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2.4 Article 4

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Comparison and change of defense mechanisms over the course of psychotherapy in patients with depression or anxiety disorder: Evidence from a randomized controlled trial

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Abstract

Defense mechanisms play an important role in the development and maintenance of both health and psychopathology. Research is still in the early stages of investigating the specific relationships among diagnostic groups and defense mechanisms along with their response to different treatment types. For the present study a total of 47 outpatients diagnosed with depression or anxiety disorders were randomized to receive 25±3 sessions of cognitive-behavioral therapy with integrated elements of either emotion-focused therapy (CBT + EFT) or treatment components based on self-regulation theory (CBT + SR). An observer-rated method, the Defense Mechanism Rating Scale (DMRS) was used to code transcripts of the 1st, 8th, 16th and 24th session to assess change in defensive functioning. Over the course of therapy, overall defensive functioning (ODF) as well as adaptive defenses increased significantly, whereas maladaptive and neurotic defenses did not change. At the beginning of treatment, the proportion of adaptive defenses and ODF was significantly higher in patients diagnosed with anxiety disorders than in patients with depressive disorders. However, depressed patients exhibited greater improvement in their defensive functioning over the course of therapy. Results support the view of defense mechanisms as a useful transdiagnostic and transtheoretical concept and supports the notion that change of defense mechanisms may be a relevant mechanism of change in psychotherapy.

Keywords: Defense-Mechanisms; Randomized controlled trial; Cognitive-behavioral therapy; Emotion-focused therapy; Depression; Anxiety.

Introduction

Defenses play an important role in a variety of adaptive and maladaptive processes in psychopathology and mental health (Soldz & Vaillant, 1998), they significantly influence an individual's emotional responses and are frequently applied as cognitive strategies in everyday life (DeFife & Hilsenroth, 2005). The American Psychiatric Association (2000) defined defenses as "automatic psychological processes which protect the individual from anxiety and unnecessary awareness of internal and external dangers and stressors." In the analysis of changes in defensive functioning over the life course in patients and healthy individuals, Vaillant (1971, 1976, 1986) found that over time defenses shifted from maladaptive to more adaptive levels (Laub & Vaillant, 2000; Soldz & Vaillant, 1998; Vaillant & Mukamal, 2001). Adaptive defenses typically maximize awareness of internal states and result in both positive outcome and the most effective psychological protection, whereas maladaptive defenses act to restrict or alter awareness of internal states and conflicts, thus limiting positive outcome (Kneepkens & Oakley, 1996). Vaillant had previously introduced a four-level hierarchical classification of defenses: psychotic, immature, neurotic, and mature (1971). Based on similar functional characteristics and empirical relations (Perry, Kardos, & Pagano, 1993; Vaillant, 1992) this hierarchy was later extended to seven levels: action, borderline, disavowal, narcissistic, neurotic, obsessional, and high adaptive defenses (Perry, 1990). Levels one to four belong to the category of maladaptive defenses, levels five and six are located within the neurotic defense mechanisms and level seven corresponds to adaptive defenses. For a description of the defense levels and examples see appendix A. Over the years, the hierarchical classification of defense mechanisms was confirmed as empirically robust and clinically relevant (Soldz & Vaillant, 1998; Vaillant, 1993; Vaillant, 1986; Vaillant & Bond, 1986). While defenses change across the lifespan, it is important to

demonstrate how they change in psychotherapy and whether this relates to improvement. Here, this question is examined in a randomized controlled treatment trial of an outpatient sample with a mix of depressive and anxiety disorders.

From pre to post therapy, overall defensive functioning (ODF) has been shown to improve, mature defenses to increase and immature defenses to decrease while neurotic defenses did not change meaningfully in short-term (Drapeau, de Roten, Perry, & Despland, 2003; Kramer, Despland, Michel, Drapeau, & de Roten, 2010; Perry, et al., 1998), as well as in medium- and long-term therapies (Bond & Perry, 2004; Hersoug, Sexton, & Høglend, 2002; Perry, 2001; Perry, Beck, Constantinides, & Foley, 2009; Perry & Bond, 2012).

Besides examining ODF, adaptive, neurotic, and immature defenses, some studies have specifically investigated the seven-level hierarchy of defenses and individual defense mechanisms, suggesting that they can be associated with specific diagnoses. For example, it was found that depressed individuals used significantly more maladaptive and less adaptive defense mechanisms at baseline than a healthy control group (Vaillant, 1986). More specifically, research identified a group of nine immature defenses associated with depression (DeFife & Hilsenroth, 2005; Høglend & Perry, 1998). These defenses are passive aggression, acting out, help-rejecting complaining, splitting of self and others, projective identification, projection and devaluation of self and others. It was shown that the use of depressive defenses and thus the number of immature defenses decreased over the course of treatment, while adaptive defense mechanisms increased (DeFife & Hilsenroth, 2005). Similar results were observed for soldiers diagnosed with an adjustment disorder (Doruk, Sütcigil, Erdem, Isintas, & Özgen, 2009). Few studies have examined change of defense mechanisms in anxiety disorders. For example, Kipper et al. (2004) compared patients with acute panic disorder to a control group of completely remitted subjects and found

that the former generally displayed more neurotic and maladaptive defense mechanisms, both at intake and termination with a decreasing trend on the level of neurotic defenses (Heldt et al., 2003; Kipper et al., 2004). Patients with social phobia also used significantly more maladaptive and neurotic but less adaptive defense mechanisms than a control group (Andrews, Pollock, & Stewart, 1989), whereas individuals with specific phobia did not differ significantly from a healthy sample in terms of their defensive functioning (Muris & Merckelbach, 1996). Overall, previous research indicates that patients with anxiety disorders show an increased use of defense mechanisms from the neurotic and maladaptive spectrum and that changes in defense mechanisms are to be expected on the neurotic defense level (Heldt et al., 2003). However, the results are controversial mainly due to small sample sizes.

Defense mechanisms have shown to predict therapeutic success (Perry & Metzger, 2014). For example, defenses as measured at intake predicted favorable therapy outcomes at the symptomatic level (Bond & Perry, 2004; Kramer, de Roten, Perry & Despland, 2009). In a sample of patients with anxiety, depressive and personality disorders, Bond and Perry (2005) reported that 21% of outcome-variance could be explained by the change in defense mechanisms. In a different study, Høglend and Perry (1998) found that ODF significantly predicted GAF at six-months follow-up. Taken together, defense level at intake as well as change in defenses over therapy predicted therapy outcome. These findings suggest that defenses may act as both, predictor and mediator of change over the course of psychotherapy (Perry & Bond, 2017; Perry & Henry, 2004).

Despite accumulating knowledge about defense mechanisms and their changes during therapy mainly of psychodynamic orientation, there is a lack of knowledge about the processes and change mechanisms of patients' defense mechanisms in other therapeutic approaches. Furthermore, hardly any study compares change in defensive

functioning between different diagnostic groups. Filling the gap, the present study examined if and how defense mechanisms change over the course of an integrative CBT in patients diagnosed with either depression, adjustment disorder, or anxiety disorders. The following hypotheses were tested: (1) Overall Defensive Functioning and adaptive defenses will significantly increase, and maladaptive defenses will significantly decrease over the course of treatment, while neurotic defenses will not change significantly. (2) Depressed patients will show a higher percentage of immature (especially depressive) defenses than anxiety patients, who in turn will use a higher percentage of neurotic defenses. (3) ODF at intake will predict symptom level at termination as indicated by the BDI-II and the BAI. We do not have a clear hypothesis regarding differences in the effect of the treatment condition on defensive functioning, and thus we will investigate this research question in an exploratory manner.

Method

Participants

The sample consisted of 47 patients who were recruited when seeking treatment at a psychotherapeutic outpatient clinic of a Swiss University and had completed the treatment. Of 47 patients, 18 (38%) were male and 29 (62%) were female with a mean age of 32.09 years (*SD* = 10.5). Twenty-two patients (44%) met diagnostic criteria for a principle diagnosis of unipolar depression (ICD; F32), 17 patients (34%) for an anxiety disorder (ICD; F40, F41, F43.2) and eight (16%) for adjustment disorder. Previous research failed to identify variables that independently differentiated adjustment disorder from depressive episodes (Casey et al., 2006), which is why patients diagnosed with adjustment disorder were included in our study. Thirteen patients presented comorbid psychiatric disorders: one with bulimia, one

with hypochondria, one with obsessive compulsive disorder, two with personality disorders, three with affective disorders in addition to the principle diagnosis of an anxiety disorder and four with a secondary diagnosis of an anxiety disorder. Research diagnoses were established by trained staff with the Structured Clinical Interview for DSM-IV-R (First, Spitzer, Gibbon, & Williams, 2004). Treatment was provided by 18 (69.23%) female and eight (30.76%) male masters-level therapists with a mean age of 34.49 years (*SD* = 8.63). Eight therapists had completed their postgraduate training while 18 had been in advanced postgraduate training for at least two years. There were no significant differences between the treatment conditions with regard to demographic variables, neither in the patient nor the therapist population. Exclusion criteria included substance dependence within the last six months, current risk of suicide, immediate risk of self-harm or harm to others, and the presence of a likely organic cause for the mental disorder. People simultaneously receiving other psychological treatments were also excluded. No medication was prescribed by the project. The trial was approved by the local Ethics Committee and all patients gave written informed consent for their therapy sessions to be video-recorded and the data being used in the context of the trial.

Study design

This study (view study protocol for detailed description; Babl et al., 2016) was conducted as a randomized controlled trial with two active treatment arms: CBT + SR versus CBT + EFT. The design included one between subject factor (two treatment condition) and one within subject factor (four assessment points). After reviewing the inclusion and exclusion criteria, patients were randomly assigned to a treatment condition. Randomization was carried out by an independent researcher using a computer-controlled random number generator. The study design is shown in Figure 1.

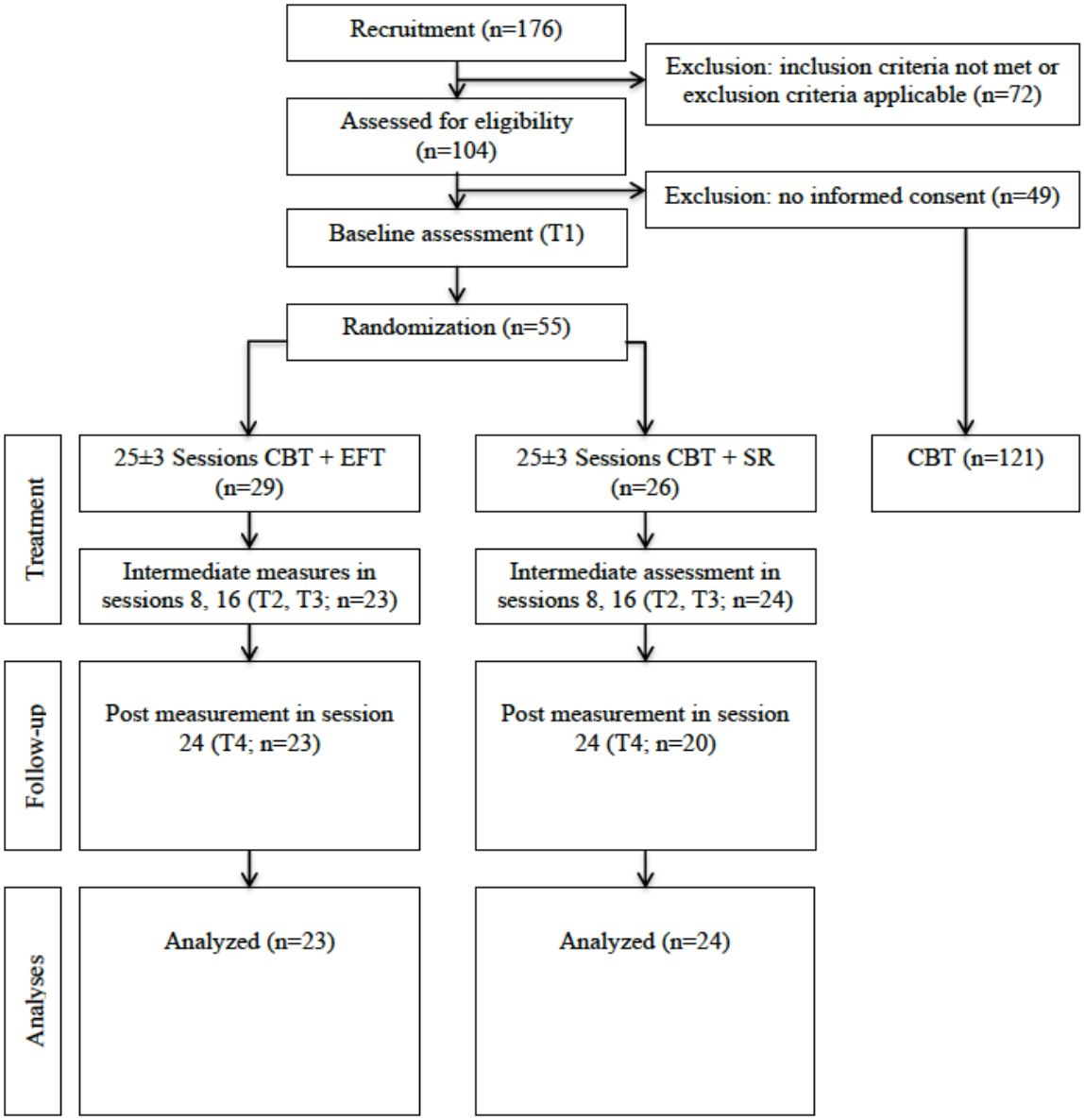

Figure 1. Participant recruitment and study flow chart

Materials

The *Defense Mechanism Rating Scale* (5th edition; Perry, 1990), is an observer-rated manual for the identification of 30 individual defense mechanisms in session transcripts of psychotherapy. The manual comprises a definition of each defense mechanism, a description of the intra-psychic function and a list of similar mechanisms and indications of how to distinguish them. The 30 defense mechanisms are arranged hierarchically, divided into seven levels. The higher the level on which a defense mechanism is located, the greater the score assigned to it. For example,

adaptive defense mechanisms receive seven points, since they belong to level seven. All defense mechanisms are evaluated with a score corresponding to their level. Based on the scoring, the following measures can be calculated: the individual defense score, the defense level score and the overall defensive functioning score.

Six Master-level psychology students underwent six months of intensive rater training in the Defense Mechanism Rating Scale (DMRS; Perry, 1990), that was available in English and German. Over the course of the rater training, nine session transcripts with 21 to 30 pages each (M = 26) were coded, and eleven consensus meetings of two to six hours each were held, amounting to around 34 hours. Raters then transcribed and rated a total of 192 therapy sessions in a secured and designated rating room at the University, between August 2017 and August 2018. All transcripts were de-identified regarding identity and location. For each patient, the 1st, 8th, 16th and 24th sessions were transcribed and rated for defense mechanisms to reflect the course of the treatment. In case of technical malfunctioning of the video, such as audio failure, a neighboring session number was being transcribed and rated instead. Twelve sessions were substituted in the TAU + SR condition and ten in the TAU + EFT condition. Complete sessions were transcribed, with the exception of the beginning or the end to exclude discussion of scheduling or organization which might give away when in time the session occurred. Nonverbal behavior, such as nodding, smiling or silence was also marked in the transcripts. Session length slightly varied (Mean = 62.1 min, SD = 7.69 min).

Reliability coefficients among fully-trained raters were established on 20% (n = 36 sessions) of the ratings. The intraclass correlation coefficients (Wirtz & Caspar, 2002) ranged from ICC(2,1) = .46 to .86 (Mean = .72). This indicates acceptable to good agreement (Shrout, 1998), similar to previous reports (e.g. Perry & Bond, 2012). The seven defense levels were the unit of analysis for these reliability analyses.

Procedure

In this randomized controlled study, patients were treated with integrative CBT plus either elements of EFT or of SR in an add-on design. Therapists received an extra five-day training in EFT or in SR complementary to their regular therapist training, of which they previously had to have completed at least two years in order to participate in the study. Further, they were offered expert-supervision in their respective treatment condition every three months in addition to regular supervision.

The CBT + SR condition emphasized the self-regulation model by Carver and Scheier (2000) and therapeutic interventions derived from the model. Self-regulation refers to self-generated thoughts, actions and feelings that are used to achieve personal goals (Zimmerman, 2000). Self-regulation is described as cyclical, since feedback from previous performance is integrated to make adjustments to current objectives. Such adaptation is necessary because personal, behavioral and environmental factors are constantly changing. Whereas self-regulation represents primarily a theoretical concept, it can also be utilized for treatment planning by determining a specific focus and choosing specific interventions.

In the CBT + EFT condition, change of emotions was fostered through the use of four EFT-specific techniques: empathy, focusing, empty-chair work and two-chair work. Empathy builds the basis of the therapeutic work in EFT and functions as a specific intervention at the same time. Empathy as an attitude is defined as experiential understanding of the inner world of another, his feelings, needs and desires whereas empathy as a technique means communicating to someone the exact understanding of their experience (Auszra & Hermann, 2016). Empathy supports the regulation, deconstruction and establishment of positive behavior (Greenberg, 2011). In focusing, client and therapist collaboratively search for images or symbols matching the client's current body sensations as largely unconscious proxies of his or

her emotions (Auszra & Hermann, 2016). The goal is to make implicit experience explicit. Besides focusing, chair work is essential in EFT. Two types of chair work can be distinguished. First, empty chair work which is indicated when the therapist identifies markers of unfinished business with a significant other in the patient's behavior. The therapist sets out to activate emotional patterns related to the significant other by initiating a dialogue with the imagined significant other to be seated in the empty chair. This procedural activation of cognitive-motivational-emotional schemas related to the significant other should allow those patterns to be modified in a next step by the client behaving differently than in the past. Second, two-chair work is seen as indicated when the therapist perceives self-critical or self-interrupting processes taking place in the client during a session. Patients are then encouraged to start a dialogue between the two parts of themselves to be placed into opposite chairs with the goal of increasing self-compassion and self-worth (Greenberg, 2011).

The duration of the treatment was based on the usual length of cognitive-behavioral therapies in the outpatient setting, i.e., 25 ± 3 sessions of 50 minutes each. All therapy sessions were video recorded for quality assurance and supervision purposes. Four sessions per therapy (1, 8, 16 and 24) were transcribed and subsequently rated for defense mechanisms. As shown in Fig. 2, extensive diagnostic assessment took place before the beginning of an approximately six-months treatment, after which up to three booster sessions could be performed. For further information please consult the study protocol of the improve project (Babl et al., 2016).

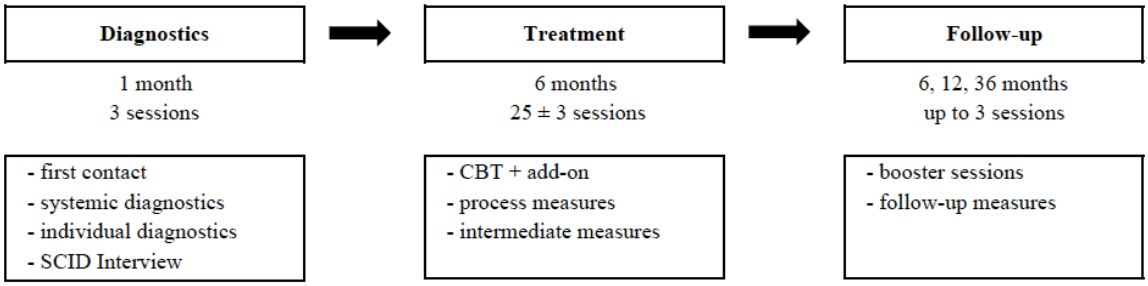

Figure 2. Procedure of the study

Data Analysis

All data analyses were done using IBM SPSS Statistics for Macintosh, Version 25.0 (2017). Repeated measures analyses of variance (ANOVAs) examined differences within-group (four assessment points) and between group (two treatment conditions, three diagnostic groups). Raw difference and effect size between intake and termination were examined by univariate T-tests (Tables 1 and 2). To obtain residual change scores for the comparison of change in defense levels between the diagnostic groups (Table 2), a simple linear regression was calculated using baseline score as the independent variable and final score as the dependent variable. The residual change scores represent the unpredictable portion of the final scores, that which is not linearly related to the baseline scores. Linear regression analyses were applied to investigate the relationship between change in defenses and symptoms. We present the nominal p-values but given multiple comparisons for each table of analyses, we note the Bonferroni-corrected alpha for each independent variable that is not a composite value. However, the Bonferroni-corrected alpha is overly conservative because the defense variables are inter-correlated.

Results

Initially, we wanted to examine when change in defenses occurred over the course of treatment and therefore used repeated measures analyses of variance and post-doc tests for analyses. However, we found that defenses developed consistently

with change reaching significance only from intake to termination while non-significant at the intermediate assessments. In the following, we thus present Bonferroni-corrected paired t-tests on seven defense levels as well as ODF and defense categories.

Table 1

Change in DMRS defenses over the course of treatment for the complete sample (N=47)

	Session 1		Session 8		Session 16		Session 24		1 vs. 4	contrast	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	ES	t	p
Defense Levels											
7 High Adaptive	35.16	15.73	37.32	17.81	39.95	17.97	45.73	19.99	0.49	3.71	.001**
6 Obsessional	18.10	8.13	20.19	10.61	17.21	9.39	18.32	12.58	0.02	.12	.904
5 Neurotic	11.86	8.35	10.21	7.76	10.93	7.97	9.93	10.23	-0.16	1.05	.300
4 Narcissistic	7.28	7.53	7.28	7.40	7.02	7.40	5.64	5.34	-0.19	1.27	.210
3 Disavowal	10.75	5.97	10.39	7.43	11.21	7.56	8.30	6.98	-0.31	2.12	.040*
2 Borderline	.90	2.33	.69	2.50	.72	1.78	.81	2.60	-0.03	.21	.843
1 Action	15.95	14.01	13.91	14.83	13.00	13.43	11.26	8.67	-0.32	2.25	.030*
Category Scores											
High Adaptive (7)	35.76	15.51	37.32	17.81	39.91	18.02	44.65	20.17	0.50	3.95	.000**
Neurotic (5-6)	33.00	13.85	33.66	13.66	31.76	14.90	31.37	16.55	-0.10	.69	.493
Immature (1-4)	31.29	18.51	28.81	18.13	28.59	19.71	24.37	17.67	-0.38	2.79	.008*
Summary Score											
ODF	4.98	.82	5.09	.85	5.13	.89	5.43	.72	0.48	3.76	.000**

Note. The Bonferroni-corrected alpha for each contrast is based on 7 defense levels only (alpha = .0063), the ODF and categories are composites of these and are not independent.

Table 1 displays the mean percentage scores for the 7 defense levels, the three defense categories and ODF. In descending order of the hierarchy, high adaptive defenses (level 7) increased significantly over the course of therapy, yielding large effect sizes. Obsessional defenses (level 6) did not change significantly from intake to termination. Neurotic defenses (level 5) and narcissistic defenses (level 4) decreased over treatment by a small but non-significant effect size. Disavowal defenses (level 3) decreased significantly with psychotherapy, yielding a medium effect by termination.

Borderline defenses (level 2) were minimal at intake and did not change significantly over the course of treatment, while action defenses (level 1) showed significant decreases of medium effect sizes. The three defense categories mirrored the hierarchical level changes. High adaptive defenses increased significantly as noted above. The neurotic category decreased by a small but non-significant effect size. Immature defenses decreased at termination by a medium to large significant effect. ODF increased from intake to termination with large significant effects.

Moving to the analysis of treatment types, repeated measures analyses of variance exhibited no statistically significant difference between the two treatment conditions with regard to change in ODF ($F(1,41) = 2.767$, $p = .104$, $\eta p2 = .063$), neurotic ($F(1,41) = .448$, $p = .507$, $\eta p2 = .011$) and maladaptive ($F(1,41) = .448$, $p = .507$, $\eta p2 = .011$) defenses. However, CBT + SR showed a significantly greater change on the level of high adaptive defenses ($F(1,41) = 4.529$, $p = .039$, $\eta p2 = .099$, $d = .331$; 9.724, 95%-CI[.496, 18.951]) than the CBT + EFT condition.

Another possible factor influencing change in defense mechanisms is the diagnostic group (for the proportion of individual defense mechanisms in patients with depression and anxiety disorders see Tables A1 and A2 in the appendix).

Table 2

Changes in defense levels in depressed and anxious patients: intake and termination

	Depressed Patients (N=22)				Patients with Anxiety (N=17)				D. vs. A. contrast		
	Intake		Termination		Intake		Termination				
Defense	M	SD	M	SD	M	SD	M	SD	ES	t	p
Mature	30.9	16.91	44.61	22.43	41.14	13.57	50.5	13.76	0.02	0.09	0.931
Obsessional	18.36	8.15	19.2	15.3	18.5	10.31	16.4	9.59	0.09	0.55	0.587
Neurotic	12.03	9.5	12.28	11.89	11.12	7.62	5.5	4.6	0.34	2.11	0.042*
Narcissistic	5.98	6.45	5.16	5.23	7.15	7.57	6	4.94	0.08	0.41	0.684
Disavowal	11.08	6.95	6.79	5.85	10.01	4.66	9.18	5.53	0.21	1.27	0.211
Borderline	1.39	2.65	0.57	1.51	0.52	2.16	1.37	4.05	0.24	1.44	0.160
Action	20.25	15.43	11.4	9.66	11.57	12.4	11.08	9.08	0.08	0.47	0.644

Note. D. = Depression; A. = Anxiety. Table presents T-Tests of the residual change scores (portion of the scores at termination which are not linearly related to baseline scores).

Table 2 indicates a significant difference in residual change scores of neurotic defenses between patients diagnosed with depression and those with anxiety disorders, yielding large effect sizes. Further, disavowal and borderline defenses displayed small to moderate effects, albeit non-significant. Both levels include some of the so-called depressive and non-depressive defenses, which were investigated in more detail and are presented in the following. Patients with adjustment disorders were not included in Table 2 due to the small sample size (n = 8). For the sake of completeness, however, it should be reported here that patients with adjustment disorders exhibited a significant difference in residual change scores of neurotic defenses when compared to patients with anxiety disorders and no differences when compared to depressed patients.

Table 3

Change in depressive and non-depressive defenses depending on diagnostic group

Defense category	Session 1		Session 8		Session 16		Session 24		1 vs. 4	contrast	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	ES	t	p
Patients diagnosed with depression (n=22)											
Depressive	26.52	15.19	23.89	16.82	25.59	16.01	16.41	12.07	-0.48	2.54	.019*
Non-depressive	12.19	7.41	10.48	8.60	9.63	7.63	7.50	6.09	-0.46	2.45	.023*
Patients diagnosed with anxiety disorders (n=17)											
Depressive	18.78	13.07	16.60	12.34	16.80	15.19	18.43	12.64	-0.02	.10	.923
Non-depressive	11.57	5.31	11.02	6.54	12.35	9.96	9.17	5.61	-0.26	1.09	.293

Table 3 depicts change in depressive and non-depressive immature defenses separate for patients diagnosed with depression and anxiety disorders. Overall, depressive patients exhibited a higher percentage of immature defenses with twice as many depressive as non-depressive defenses. In patients with depression, both depressive and non-depressive defenses decreased significantly from intake to

termination, yielding large effect sizes. No significant changes in the category of immature defenses were found in patients with anxiety disorders, however, non-depressive defenses decreased by a moderate effect size.

Finally, we looked at the relationship between defense mechanisms and treatment outcome.

Table 4

Change in depressive and anxiety symptoms from intake (N=46) to termination (N=43)

	Session 1		Session 24		1 vs. 2	contrast	
	Mean	SD	Mean	SD	ES	t	p
Outcome							
BDI-II	19.32	10.52	9.34	8.41	0.39	7.51	.000**
BAI	17.09	10.50	7.55	8.11	0.68	6.17	.000**

Table 4 displays the means of the BDI-II and BAI at baseline and termination. For both BDI-II and BAI, paired T-Tests indicated highly significant changes over the course of treatment, for which the means are in the range of mild or residual symptoms. Effect Sizes (ESs) were between 0.36 and 0.39, suggesting a medium to strong effect. The final BDI-II value for 25 subjects (56.8%) indicated recovery, 7 (15.9%) indicated residual symptoms and another 7 (15.9%) mild symptoms of depression while 5 (11.4%) were still fully ill. The final BAI value for 30 (68.2%) subjects fell below the cutoff for not anxious with 14 (31.8%) still above the cutoff.

ODF at intake was a significant predictor of symptom level at termination, measured with the BDI-II ($F(1,42) = 6.548$, $p = .014$) and BAI ($F(1,42) = 3.795$, $p = .058$). With each additional point in ODF, the BDI score dropped by four and the BAI value by three points, accounting for 11% of outcome variance in the former and 6% of outcome variance in the latter.

Discussion

The aim of this study was to investigate if and how defense mechanisms change over the course of 25 ± 3 sessions of CBT + EFT or CBT + SR in patients with depression, anxiety and adjustment disorder.

Our first hypothesis was upheld. ODF and high adaptive defenses significantly increased while immature defenses decreased to a lesser extent whereas neurotic defenses did not change significantly over the course of therapy. This is in line with previous studies across different therapeutic approaches such as long-term dynamic psychotherapy (e.g. Perry & Bond, 2012). Albucher, Abelson, and Nesse (1998) observed a significant defense change only on the level of mature defenses. Additionally, Akkerman, Lewin, and Carr (1999) found that the use of adaptive defenses increased in patients who had completed a six-month treatment for depression. In their study, patients who continued treatment for another year also showed a decreased use of maladaptive defenses, indicating that a meaningful reduction in the use of maladaptive defenses may require more time. Interestingly, our study did not confirm that change in defenses occurred in a stepwise fashion, with immature defenses moving up to neurotic and finally mature defenses, as previously suggested by Vaillant (1993).

Another factor influencing change in defensive functioning could be the type of treatment. Indeed, in our sample the increase in adaptive defenses was significantly greater in CBT + SR than CBT + EFT. Those differences could be due to chair-work, which is used in EFT to foster confrontation processes. In two-chair work, one chair represents the current experience of the patient, the other chair represents the self-critical, hopeless, fear-inducing or self-interrupting counterpart and in the case of empty-chair work the significant other. The patient is encouraged by the therapist to engage in a dialogue between the two sides, with the main goal of increasing self-compassion (Herrmann & Auszra, 2016). Four defenses consistently accompanied

chair-work: Devaluation of self and others on the one hand and self-observation as well as self-assertion on the other. Chair work seems to mobilize the narcissistic defenses along with subsequent addition of mature defenses, however, CBT + SR does not mobilize the devaluation and so patients in this treatment condition look healthier.

In line with hypothesis two, when dividing the sample into two diagnostic groups, our study showed that depressed patients used more immature defenses, in particular depressive defenses, over the course of treatment than patients with anxiety disorders. However, patients with depression meaningfully decreased their use of both depressive and non-depressive defense mechanisms from intake to termination, while anxious patients did not.

The only differences between the depressive and anxiety diagnostic groups occurred in the neurotic level defenses, in line with previous research on anxiety disorders (Kipper et al., 2005). While anxious patients in our study already had a relatively high level of defensive functioning at treatment outset, those with depressive disorders only achieved this level after 24 sessions of psychotherapy. These results are consistent with previous findings (e.g., DeFife & Hilsenroth, 2005; Perry & Høglend, 1998) that patients with depression are generally more symptomatic and lower functioning than patients with anxiety disorders, which is also reflected by a greater reliance on low-level defense mechanisms and thus, lower ODF (Bloch, Shear, Markowitz, Leon, & Perry, 1993). As a result, depressed patients would have to achieve much greater improvement in their defensive functioning compared to patients with an anxiety disorders before reaching healthy-neurotic functioning. Regression towards the mean could apply here, the phenomenon that if a variable is extreme on its first measurement, it will tend to be closer to the mean or average on its second measurement. Also, Bond and Perry (2004) found that subjects who initially

exhibited a high proportion of maladaptive defense mechanisms had a significant decline over time, while those who initially scored low displayed no significant changes suggesting that people who are more symptomatic at baseline show a stronger treatment response. In our study, patients with anxiety disorders used a higher percentage of mature defenses at intake, allowing them already to benefit from therapy more than depressive patients who were less mature. Further, their immature defenses were low enough at the outset not to need much improvement.

In the case of depression, a pre-post comparison revealed that the greatest changes within the adaptive defense level were due to an increase in self-observation and self-assertion. This result was also found in earlier studies. Høglend and Perry (1998) showed that depressive patients with a higher proportion of self-observation exhibited greater symptom reduction at treatment termination. Self-observation functions as the self-repair mechanism wherein the individual can alter his or her own psychological processes (Høglend & Perry, 1998). It helps the patient to explore and understand internal and external processes and, as a result, improves adaptation and allows for a greater openness to change (Høglend & Perry, 1998). Self-assertion, in addition, encourages the patient to express a wish or feeling while confronting any conflict and ultimately leading to the satisfaction of needs which further improves wellbeing.

In our study, ODF was a significant predictor of final symptom-levels of depression and anxiety as indicated by the BDI-II and BAI. This is in line with previous research showing that depressive symptoms were accompanied by lower overall defensive functioning (Bond & Perry, 2004).

In conclusion, the present study was the first to measure defense change in a randomized controlled trial (RCT) comparing CBT + EFT and CBT + SR directly. Psychotherapy integration is common practice, meaning that both treatment

conditions reflect everyday outpatient practice, which enhances the generalizability of our findings. Results suggest that even therapeutic approaches not aiming at changing defensive functioning exhibit a favorable effect on defenses. This is important for an integrative understanding of defense mechanisms indicating that despite their psychodynamic roots, they can be applied as trans-theoretical. Furthermore, we found them equally useful in examining change of both depressive and anxiety disorders suggesting that defenses are also trans-diagnostic in their value. Knowledge about a patient's predominant defense mechanisms could be helpful to therapists of all orientations as it may contribute to a better understanding of the patients' psychological functioning and the tailoring of an individual psychotherapy. Future studies should consider using experimental designs in which one treatment targets changing defense mechanisms whereas another does not.

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Appendix

Seven defense levels

Maladaptive defenses

1. Level one refers to defensive dysregulation. This level is characterized by a failure of defensive regulation processes.
2. Level two contains three action-oriented defense mechanisms (acting out, passive aggression, help-rejecting complaining), considered the most maladaptive defenses. Acting out, for example, is characterized by uncontrolled and impulsive action, like screaming at somebody or throwing around objects.
3. The two major image-distorting or so-called borderline defenses on level three comprise splitting and projective identification. In splitting the individual is unable to integrate both positive and negative qualities of the self or others into a cohesive image, but evaluates the self or others as either exclusively positive or negative. It is differentiated between splitting of self and splitting of others.
4. Level four represents the disavowal defense mechanisms. These include four mechanisms: neurotic denial, projection, rationalization and autistic fantasy. Rationalization is rated when the individual gives a self-serving but false explanation of his or her own behavior or that of others. The individual avoids uncomfortable feelings by substituting true with socially acceptable reasons.

Neurotic defenses

5. The three defenses (devaluation, omnipotence and idealization) on level five are the minor image-distorting or so-called narcissistic defenses. Omnipotence could be expressed as follows: "If I do it myself, the result will be the best because I am simply better than all the others."

6. The obsessional (isolation of affect, intellectualization, undoing), hysterical (repression, dissociation) and other neurotic (reaction formation, displacement) defense mechanisms are located on level six. Repression is characterized by a lack of access to the cognitive aspects of disturbing wishes, thoughts or experiences while the affective component often remains in consciousness. Frequent statements in this context are "I don't know" or "I can't remember."

Adaptive defenses

7. Level seven comprises eight highly adaptive defense mechanisms affiliation, altruism, anticipation, humor, self-assertion, self-observation, sublimation and suppression. With affiliation one turns to others for help or support to feel less alone or isolated with a conflict or problem.

Table A1

Proportion of individual defense mechanism in patients with depression (%)

	Session							
	1		8		16		24	
Defense mechanism	M	SD	M	SD	M	SD	M	SD
Affiliation	2.18	3.99	1.91	3.05	1	2.09	1.31	2.34
Altruism	0.52	1.18	.27	.88	.96	2.75	.33	1.22
Anticipation	.91	2.53	1.37	2.42	2.19	3.81	1.68	3.65
Humor	4.56	9.18	2.63	4.08	4.12	7.79	8.62	11.65
Self-Assertion	8.36	6.55	9.02	6.77	11.8	9.94	11.47	10.41
Self-Observation	11.6	6.97	13.9	11.18	16.6	9.8	20.5	11.53
Sublimation	1.3	3.23	1.22	3.08	.56	1.62	.69	1.7
Suppression	1.47	3.2	.28	.99	.43	.95	0	0
Isolation of affect	2.65	4.58	2.48	4	.22	1.04	1.07	3.26
Intellectualization	8.26	7.37	10.59	8.44	8.57	7.46	11.05	13.59
Undoing	7.45	5.91	9.75	8.35	6.12	7.12	7.08	10.37
Repression	6.88	7.23	7.02	6.11	7.14	9.56	7.02	9.98
Dissociation	.63	1.26	.28	1.02	0	0	.14	.65
Reaction formation	2.78	3.89	2.68	4.89	2.31	3.43	3.22	3.8
Displacement	1.74	2.77	2.24	3.06	2.73	4.76	1.89	3.29
Omnipotence	.23	.8	.2	.69	.93	1.87	.14	.67
Idealization of self	.41	1.94	.35	1.16	.32	1.19	.66	1.74
Idealization of others	0	0	.32	.88	0	0	.33	.86
Devaluation of self	3.72	4.57	1.89	3.46	3.86	4.43	3.25	4.28
Devaluation of others	1.6	3.21	2.26	4.9	1.37	2.31	.78	1.62
Neurotic denial	.53	1.24	.79	1.64	.39	1.02	.42	1.45
Projection	0	0	1.57	2.92	1.42	2.96	.56	1.43
Rationalization	10.55	6.46	8.82	7.5	7.98	5.7	5.81	6.05
Autistic phantasy	.45	2.13	0	0	0	0	.14	.67
Splitting of self	.15	.71	.16	.74	.21	.7	.43	1.4
Splitting of others	0	0	.09	.42	.27	.89	0	0
Projective Identification	.78	1.77	0	0	.84	2.33	0	0
Acting Out	.81	1.77	.58	1.58	.73	2.12	.51	1.32
Passive Aggression	10.29	9.61	8.88	10.36	9	9.7	6.62	8.26
Help-rejecting complaining	9.15	10.57	8.46	13.52	7.89	7.14	4.28	4.73

Table A2

Proportion of individual defense mechanism in patients with anxiety disorders (%)

	Session							
	1		8		16		24	
Defense mechanism	M	SD	M	SD	M	SD	M	SD
Affiliation	1.75	1.61	2.53	3.37	2.67	3.08	1.9	2.7
Altruism	.87	2.14	1.05	2.64	.55	1.23	1.04	2.49
Anticipation	3.11	4.44	2.39	3.05	2.97	3.15	4.24	6.19
Humor	9.89	13.43	6.76	7.33	7.41	7.16	9.92	7.82
Self-Assertion	9.91	8.42	11.03	5.74	11.31	9.37	13.11	7.38
Self-Observation	14.49	10.15	20.58	12.85	17.49	11.24	19.01	10.46
Sublimation	.86	2.81	.73	1.73	.5	1.5	.63	1.37
Suppression	.27	1.13	.4	1.26	.41	1.69	.66	1.47
Isolation of affect	.99	2.09	1.6	2.99	1.43	1.93	.84	2.53
Intellectualization	10.4	8.15	10.71	6.62	11.94	11.79	9.58	6.71
Undoing	7.1	5.91	6.96	6.32	5.55	4.44	5.98	4.78
Repression	4.02	6.05	4.65	4.75	3.01	3.39	2.46	2.68
Dissociation	.45	1.02	0	0	.23	.93	0	0
Reaction formation	2.68	3.8	.97	1.92	2.68	3.96	2.03	2.61
Displacement	3.97	5.14	2.01	3.12	2.83	3.85	1.01	1.6
Omnipotence	.71	1.35	1.11	2.1	.46	1.1	.29	.81
Idealization of self	.6	1.14	.34	.75	.57	1.89	.11	.42
Idealization of others	.1	.4	.47	1.34	.48	1.48	.25	.96
Devaluation of self	4.99	5.97	4.06	5.76	3.66	4.09	2.66	3.2
Devaluation of others	.75	1.68	2.2	3.7	2.68	3	2.67	3.4
Neurotic denial	.98	1.68	.37	.83	.6	1.16	.46	1
Projection	.74	1.77	.76	1.54	1.04	1.56	.86	1.59
Rationalization	8.29	4.38	8.26	5.14	10.25	8.51	7.86	5.5
Autistic phantasy	0	0	.47	1.94	0	0	.21	.81
Splitting of self	.52	2.16	.64	2.65	.18	.73	1.05	3.28
Splitting of others	0	0	.21	.88	0	0	.11	.43
Projective Identification	0	0	0	0	0	0	0	0
Acting Out	.64	1.49	.54	1.53	.12	.49	0	0
Passive Aggression	8.71	11.14	5.99	5.9	5.58	10.29	7.49	8.37
Help-rejecting complaining	2.21	5.04	2.19	3.94	3.55	5.18	3.58	4.28

3. General discussion

3.1 Summary of this dissertation

In what follows, I would like to first summarize the results, implications and limitations of each of the four articles and then come to an overall conclusion based on my contributions to the *Improve Project.* Finally, I will provide recommendations for future research directions in psychotherapy integration.

3.1.1 Article 1

The study protocol described the background, rationale, objectives, design, methodology, statistical considerations and aspects related to the organization of the *Improve Project* allowing all study team members to review the project's steps and refer to this trial protocol in their own investigations.

3.1.2 Article 2

Hypothesis one was verified. As expected, more EFT than SR was performed in the CBT + EFT condition and vice versa. This indicates that, overall, therapists adhered to their treatment condition and performed interventions specific to EFT or SR in an average of one- quarter of total session time. However, slightly more EFT in CBT + EFT than SR in CBT + SR was performed.

Explorative analyses on the patterns of both EFT and SR interventions across the different therapy sessions revealed a general increase in the proportion of EFT-specific interventions in CBT + EFT and no such trend in the CBT + SR condition.

Empathy was the most widely used EFT intervention. Since empathy is generally known as a common factor in psychotherapy, it was probably also used in the CBT + SR condition. However, it may have been rated less frequently.

To conclude, results indicate not only a theoretical but also a practical difference between the two treatment conditions. This is important in comparative

studies and constitutes a crucial prerequisite for further analyses of between-group differences.

Relationships with therapy outcomes have been reported in previous studies assessing adherence to treatment but are thus far lacking in our investigation because the RCT is still ongoing; upon completion, such relationships should be examined.

3.1.3 Article 3

Our main findings upheld the first hypothesis. ODF increased significantly over the course of treatment with large and very robust effects. Additionally, when examining the hierarchy of defenses, as hypothesized, mature defenses increased significantly and immature defenses decreased whereas neurotic defenses displayed more study to study variability, resulting in no overall significant change.

In line with hypothesis two, general improvement in ODF over the treatment period was found within both patient groups, those with axis I and those with axis II disorders. However, patients with personality disorders demonstrated a decreased rate of change and an increased use of immature defenses compared to patients with axis I disorders. This is in accordance with recent research illustrating that individuals who are more symptomatic at baseline (lower ODF, higher proportion of immature defenses) show greater treatment response (Bond & Perry, 2004), they may just require longer-term therapy to reach a given level of improvement.

In agreement with hypothesis three, treatment duration generally influenced the rate of change in ODF with the smallest rates of change observable in long-term psychotherapy. It is important, however, to note that the four duration categories chosen in this meta-analysis were equally representative of different treatment types (non-therapeutic interventions, group-therapies, short-dynamic treatments and long-term therapies of different schools) which needs to be considered as a possible confounding variable.

Beyond that, and in line with hypothesis four results of this meta-analysis demonstrated that change in defenses during psychotherapy was associated with improvement in both self-reported and observer-rated outcome measures over the follow-up period. Previous studies concluded that defenses may play a mediating role in symptom and functioning change (e.g. Hill et al., 2015). To address the causation of change, randomized controlled trials comparing change in defensive functioning of different psychotherapeutic interventions should be conducted.

3.1.4 Article 4

Our first hypothesis was verified. ODF and highly adaptive defenses significantly increased while maladaptive defenses decreased and neurotic defenses did not change significantly over the course of therapy. This is in line with preceding studies across different therapeutic approaches (e.g. Perry & Bond, 2012).

In agreement with hypothesis two, depressed patients used more immature defenses over the course of treatment than patients with anxiety disorders. However, patients with depression meaningfully decreased their use of both depressive and non-depressive immature defense mechanisms between treatment onset and termination while anxious patients did not. Significant pre-post differences between the diagnostic groups were found only on the level of neurotic defenses. This is in accordance with previous research which postulated a change mainly in the field of the neurotic defense mechanisms in patients with anxiety disorders (Kipper et al., 2005).

The third hypothesis was confirmed. ODF was a significant predictor of symptom change assessed with the BDI and BAI. This is in line with past research showing that depressive symptoms are accompanied by lower values in ODF (Bond & Perry, 2004).

Results suggest that even approaches not aiming at changing defensive functioning explicitly and/or explicitly referring to defense concepts have a favorable

effect on defenses. This is important for an integrative understanding of defense mechanisms. Knowledge of a patient's predominant defense mechanisms could help therapists of all orientations. Such knowledge contributes to a better understanding of the patients' psychological functioning and, as a result, enhances individual tailoring of psychotherapy. Future studies should consider using experimental designs in which one treatment does and another treatment does not target changing defense mechanisms.

3.1.5 Conclusion

To summarize, this doctoral thesis comprised four articles contributing to the *Improve Project* as follows:

The study protocol precisely described the *Improve Project* allowing to review the project's steps and refer to this trial protocol in subsequent publications.

The second study measured adherence to treatment using a video-based rating method to assess the proportion of session time dedicated to interventions specific to each treatment condition and thus allowing for analyses on the patterns of both EFT and SR interventions across different therapy sessions. For the first time, assessment time was taken into account when investigating adherence to treatment. Overall, therapists adhered to treatment in this study indicating that the training in and implementation of the two treatment conditions was successful. This is important in comparative studies and constitutes a crucial prerequisite for further analyses of between-group differences.

The meta-analysis investigating change in defense mechanisms with psychotherapy combined the results of multiple scientific studies and thereby contributed to a systematic review and overview of the research area. Further, a sufficient sample size could answer questions concerning reasonable subgroups and generalizability of findings that previous studies could not.

Finally, the study assessing defenses within this RCT picked up research questions and hypotheses based on the preceding meta-analysis. Despite their psychodynamic roots defense mechanisms changed over the course of a cognitive-behavioral and humanistic-experiential approach indicating that they can be applied as trans-theoretical. Knowledge about a patient's defense mechanisms could be helpful to therapists of all orientations when it comes to the tailoring of an individual psychotherapy.

3.2 An agenda for the next 25 years of psychotherapy integration

Considering the complexity of psychopathology and psychotherapy, it is probable that few clinicians will ever restrict their practice to one form of therapy. Thus, the risk of the integration movement is not that it will disappear, but that it will not be systematically and prominently featured in mainstream practice and training guidelines (Castonguay et al.,, 2015). Few integrationist treatments have received sufficient research to be recognized as empirically supported. This is important as we know that empirically supported treatments (ESTs) have received strong emphasis in policy-making in the USA and abroad (see Holmqvist, Philips, & Barkham, 2015; Holt et al., 2014).

Anticipating that integration would be a major focus of future empirical research and funding, the National Institute of Mental Health sponsored a Task Force that brought together a large number of influential researchers to delineate recommendations for future research (Wolfe & Goldfried, 1988). More than 25 years later, unfortunately, one is forced to admit that these recommendations have not had a substantial influence on research agendas (and on the priorities of grant reviewers). Goldfried (2013) stated that one goal of integration must be to build stronger links between science and practice. It is important to not only ask ourselves what research can do to help integration survive and grow, but also what integration can do to help

psychotherapy research become more valid and relevant to clinical practice. Current integrative practice and models provide a rich source of ideas and challenges.

The openminded, exploratory spirit of the integration movement has always embraced not only the integration of various theoretical orientations, but also various methods: process and outcome research, quantitative and qualitative research, and theory-building case studies as well as RCTs (Castonguay et al., 2015). The mind-sets and methodologies of integrative researchers and theorists make them ideally suited to be at the forefront of several areas of research that are critical for the advancement of psychotherapy.

In the following I want to summarize proposed ways in which the perspective of integrationists could contribute to psychotherapy research in the critical areas of harmful effects, therapist effects, practice-oriented research, and training.

3.2.1 Harmful effects

Perhaps the most important conceptual, clinical, and empirical question currently facing psychotherapy is identifying the factors that can lead to, prevent, or repair negative effects. Clear evidence exists that psychotherapy works (Lambert, 2013). Since the mid-sixties, the field has also been put on notice that a non-negligible number of patients will not only fail to respond to treatment, but will actually deteriorate during therapy (Bergin, 1966).

As deterioration seems to take place in different forms of therapy (Lambert, 2013), the integration movement could provide a fruitful forum to delineate and investigate potential causes of and remedies for harmful effects (Caspar & Kächele, 2016). Put differently, by fostering dialogs and studies about what may be going wrong in several treatments and what can be learned from each orientation about solving therapeutic impasses, the integration movement could find itself at the center of an important crossing point for the future understanding of psychotherapy.

For example, integrationist scholars and psychotherapy researchers could join to identify and test factors that are related to unskillful and inappropriate use of various interventions, relational and technical processes that are harmful within and across orientations, as well as inadequate matching of client and treatment.

3.2.2 Therapist effects

Therapist variables related to deterioration represent one aspect of a larger, understudied phenomenon in psychotherapy: the therapist effect. Research indicates that some therapists are less effective than others, but also that some clinicians are significantly more effective than others (Baldwin & Imel, 2013). As noted elsewhere, the therapist effect might represent the most urgent and important paradox in the field (Castonguay, 2011).

Considering both the importance and complexity of therapist effects, it might be fruitful for psychotherapy researchers of different orientations and integrationists to generate and examine ideas about therapist characteristics, clinical competencies that facilitate change events and correct hindering ones, and actions that inhibit change or exacerbate impasses, as well as client and treatment characteristics that moderate both the positive and negative impact of the therapist (Castonguay & Hill, 2017).

3.2.3 Practice-oriented research

Both harmful effects and therapist effects are central elements of a new paradigm of research, which has been referred to as practice-oriented research (POR, Castonguay, Barkham, Lutz, & McAleavey, 2013). The ultimate short-term goal of POR is to foster studies that are directly addressing the day-to-day concerns of clinicians rather than the theoretical interests of academic researchers. In essence, these are studies involving tasks for which it is impossible for clinicians to know whether they are collecting empirical data or conducting a clinical task, as they are

doing both at the same time (Nelson, et al., 2010).

Rather than being opponents, POR and evidence-cased research (EBR) can be viewed as complementary methods with unique strengths and limitations that could broaden our knowledge, as well as increase confidence in our understanding of psychotherapy (Castonguay et al., 2015).

Being based, at least in part, on their concerns, expertise, knowledge, and day-to-day experience, POR not only allows for clinicians to contribute to the accumulation of knowledge but also to have a voice in setting an agenda for current and future research (Zarin, Pincus, West, & McIntyre, 1997). Because clinical practice is populated by therapists of different orientations, such a research agenda will by definition reflect and contribute to the advancement of psychotherapy integration.

3.2.4 Training

All licensed psychotherapists, irrespective of their professional backgrounds, need to receive formal and approved training. Interestingly, however, there is a paucity of research on this crucial issue (see Hill & Knox, 2013). There are at least three reasons to suggest that the work of integrationists should guide or be included in the research priorities on psychotherapy training.

First, an integrative perspective has clearly infiltrated many training programs. As noted by Norcross and Halgin (2005), "[Al]though the particular objectives and sequences will invariably differ across training programs, recent research demonstrates that the vast majority of training programs profess a pro-integration position" (p. 454).

Second, as mentioned above, aspects of integration such as common factors and client variables to be considered for prescriptive treatment matching have been included in recommendations to guide training programs (Beck et al., 2014).

Finally, and most obviously, irrespective of how pluralistic training programs actually are, many individuals who have emerged from them identify themselves as integrative. To be relevant, research on training should reflect how a large number of therapists are trained, as well as how they will most likely define themselves as experienced professionals.

A number of questions have already been voiced to guide such a pertinent research agenda, including: Should graduate students be trained from the beginning as integrative therapists, or should they first master competencies in some orientations before they learn how to integrate them? Can or should integration be achieved within the framework of one theoretical orientation? (Castonguay, 2005; Eubanks-Carter, Burckell, & Goldfried, 2005). There is reason to be concerned that a substantial portion of the current generation of graduate students are being trained in technically as opposed to principle-driven applications of Empirically Supported Treatments (Castonguay et al., 2015). As the lack of a relationship between technical adherence and outcome suggests (Webb, DeRubeis, & Barber, 2010), this "by the manual" approach might not be an optimal way to prepare trainees to face the complexity of clinical reality, and may lead many of them to seek additional training. Postgraduate programs offering training on principles of change, for example in Psychological Therapy (Grawe, 2004) and other common factors as, matching treatment processes and client characteristics, and/or cohesive assimilation of theoretically diverse interventions within current practice may end up being attractive options to both increase and improve the clinical repertoire of many evidence based graduated therapists. It is anticipated that postgraduate integrative training programs might be in strong demand in the not-too-distant future (Castonguay et al., 2015) and, therefore, would benefit from gathering empirical support from investigations like the *Improve Project*.

Furthermore, it can be anticipated that outcome monitoring will take a stronger hold in the near future (Lambert, 2010; Lutz, Böhnke, & Köck, 2011; Lutz et al., 2013). Whereas traditional clinical training programs have focused predominantly on techniques and relational aspects of therapy, this new development comes with a stronger attention giving to individual client change and the provision of "on-time" feedback during the course of the treatment process—especially when patients do not make progress (Lambert, 2010).

On the one hand, it offers an exciting opportunity to reduce the scientist–practitioner gap by allowing a seamless integration of science and practice at the earliest stage of therapists' careers (see Castonguay, 2011). It may also dilute the atmosphere of competition between treatment approaches by encouraging students to focus less on abstract conceptual models and more on the actual outcome of real clients. On the other hand, the implementation of outcome monitoring and feedback systems calls for research on the impact that it may have on students and their clients, especially in terms of what might work best for clients who have difficulty benefiting from therapy (Castonguay, Barkham, Lutz, & McAleavey, 2013; Lutz et al., 2013).

3.2.5 Conclusion

Experts in the field of psychotherapy integration (Castonguay et al., 2015) believe that the future of both psychotherapy integration and psychotherapy research are, using a statistical term, nested: the progress of one will depend on and benefit from the advancement of the other. In addition to being mutually beneficial, a collaboration between integrationists and psychotherapy researchers can foster a greater rapprochement between science and practice. Such collaboration could help the field move beyond its efforts of building bridges between research and practice. As argued elsewhere (Castonguay et al., 2013), rather than conceiving of the scientist– practitioner philosophy as a link between two groups of individuals

standing on opposite banks of a river, it might be more fruitful to create new, unified landscapes of knowledge where clinicians and researchers are working together on clinically actionable and scientifically rigorous studies. If these studies become part of the research culture, it will then be the responsibility of researchers, clinicians, and policy-makers to implement their findings within actual training and provision of care. Closing the loop between the generation and implementation of knowledge might be a necessary condition for the survival and growth of a unified—and integrated—landscape of research and practice (Caspar & Znoj, 2011).

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