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Contents

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CLINICAL PSYCHOLOGY IN EUROPE

September 2020 | Volume 2 | Issue 3

Announcements

Announcement of the Registered Report "Effect of Cultural Adaptation of a Smartphone-Based Self-Help Programme on its Acceptability and Efficacy"

Eva Heim, Sebastian Burchert, Mirëlinda Shala, Marco Kaufmann, Arlinda Cerga Pashoja, Naser Morina, Michael P. Schaub, Christine Knaevelsrud, Andreas Maercker

Experimental designs are needed to advance our knowledge on cultural adaptation. Such research may contribute to better understand the mechanisms of action in psychological interventions.

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Editorial

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The Possible Role of Internet-Delivered Psychological Interventions in Relation to the COVID-19 Pandemic

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The consequences of the COVID-19 pandemic are moving targets, making it hard to estimate the societal burden in terms of not only physical but also mental health (Holmes et al., 2020). It is clear that mental health problems will increase as a consequence of the pandemic. However, the specific problems across countries will reflect their response to the pandemic with mental health problems including the effects of social isolation (physical distancing), loss followed by disrupted grief ceremonies, loss or disruption to vocational, economic or educational opportunities, fear of a second outbreak of COVID-19 and future post-corona mental health consequences (Holmes et al., 2020). Recent studies indicate that service demands for psychiatric assessments and interventions have increased (Titov et al., 2020), while at the same time in person psychiatric visits for mild to moderate conditions have been advised against.

There are many new challenges and possibilities raised by the pandemic. It is likely that we will see new problems and new groups of clients not seen before. Mental health problems among health care workers is one example, and loneliness or relationship distress caused by social distancing is another example. A third example could be coping with loss: death of loved ones with little opportunity for social support, loss of employment and monetary loss, and loss or disruption to education. To our knowledge, with the

possible exception of problem-solving therapy and interpersonal psychotherapy focused on bereavement and role change, few psychological treatment studies have targeted financial concerns and mental health problems in association with such changes. The lesson for researchers is to document and adapt according to the new situation.

Provision of evidence-based psychological treatments that not only are cost-effective but also safe to deliver from a pandemic perspective would have relied solely on telephone contacts before the advent of modern information technology (Wind, Rijkeboer, Andersson, & Riper, 2020). Since the late 1990s, a wide range of evidence-based internet interventions have been developed for a range of psychiatric diagnoses (for example major depression, anxiety and substance use disorders), and also psychological problems like loneliness, insomnia and stress (Andersson, Titov, Dear, Rozental, & Carlbring, 2019). Internet interventions often include instructions on how to perform tasks in real life. For example, exposure to feared social situations are performed in real life, and virtual reality and attention training may be used to augment or facilitate real life activities (Miloff, Lindner, & Carlbring, 2020). This leads to one immediate challenge in the era of COVID-19: homework assignments must be adapted to the current regulations and restrictions in each jurisdiction. Real-time video conferencing is a further alternative to deliver evidence-based psychological treatments (Varker, Brand, Ward, Terhaag, & Phelps, 2019). However, it is important to note that few studies have evaluated this treatment format and that it is more costly than internet interventions that involve minor therapist input.

In spite of the many advantages of internet interventions there are additional limitations that are specifically relevant in view of the pandemic: First, internet interventions are rarely used for clients with severe mental health problems (e.g., psychosis and acute suicidal intent) and therefore cannot be a total solution in providing remote access to mental health care. Second, with the COVID-19 pandemic there has been an increase in the use of video consultations. While it is likely that video therapy works as well as face-to-face therapy, this has not been tested in empirical studies to the same extent as internet interventions in the form of guided self-help (Varker et al., 2019). Third, although a decreasing proportion of the population continue to experience the digital divide, still far from all people in the world have access to reliable internet. Now, a majority have access, but it is still the case that there are groups who are not able to use computers or smartphones, including frail, older persons, persons with intellectual disabilities, or those socio-economically disadvantaged. As a fourth limitation we raise the risk of not performing proper diagnostic assessments as is standard practice in most clinical settings (e.g., primary care and also some clinics providing internet interventions), where patients are screened for general health. In other words, internet interventions benefit from a well-functioning health care in order to maintain not only good quality treatment but also ethical standards when referral is needed. For example, if a cardiac problem is

suspected in a telephone interview it may be more difficult to refer the client to regular health care.

Despite these limitations, Internet interventions research has the advantage that treatments can be adapted rapidly and tested more quickly than is the case in regular psychotherapy research (and also medical research). There are several previous examples of this with treatments being developed for problems like loneliness, procrastination and perfectionism, but also adapting treatments for different age groups (e.g., adolescents, adults and older adults). Furthermore, one striking advantage of internet interventions is translation and cultural adaption of interventions that would be very hard to deliver using a translator or expensive when training therapists in new settings (Andersson et al., 2019). There are now studies on internet treatments in many languages including Arabic, Mandarin, and Hebrew just to give a few examples. Given the limited resources in many places and the risk of even worse economic circumstances, there is need and opportunity to develop and test interventions that are accessible regardless of where the person resides. Of course, it is crucial that the medico-legal and clinical aspects are carefully managed, but this is a likely development in the future.

In conclusion, the current COVID-19 pandemic situation does not allow us to wait. Internet-delivered psychological interventions should be offered and in particular evidence-based Internet interventions that allow privacy and can be adapted for different problems and languages. Specific interventions for psychological problems related to COVID-19 should be developed. This could help reduce the societal burden caused by the pandemic.

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References

Andersson, G., Titov, N., Dear, B. F., Rozental, A., & Carlbring, P. (2019). Internet-delivered psychological treatments: From innovation to implementation. *World Psychiatry, 18*, 20-28. https://doi.org/10.1002/wps.20610

Holmes, E. A., O'Connor, R. C., Perry, V. H., Tracey, I., Wessely, S., Arseneault, L., . . . Bullmore, E. (2020). Multidisciplinary research priorities for the COVID-19 pandemic: A call for action for mental health science. *The Lancet: Psychiatry, 7*, 547-560. https://doi.org/10.1016/S2215-0366(20)30168-1

Miloff, A., Lindner, P., & Carlbring, P. (2020). The future of virtual reality therapy for phobias: Beyond simple exposures. *Clinical Psychology in Europe, 2*(2), Article e2913. https://doi.org/10.32872/cpe.v2i2.2913

Titov, N., Staples, L., Kayrouz, R., Cross, S., Karin, E., Ryan, K., . . . Nielssen, O. (2020). Rapid report: Early demand, profiles and concerns of mental health users during the coronavirus (COVID-19) pandemic. *Internet Interventions, 21*, Article 100327. https://doi.org/10.1016/j.invent.2020.100327

Varker, T., Brand, R. M., Ward, J., Terhaag, S., & Phelps, A. (2019). Efficacy of synchronous telepsychology interventions for people with anxiety, depression, posttraumatic stress disorder, and adjustment disorder: A rapid evidence assessment. *Psychological Services, 16*, 621-635. https://doi.org/10.1037/ser0000239

Wind, T. R., Rijkeboer, M., Andersson, G., & Riper, H. (2020). The COVID-19 pandemic: The 'black swan' for mental health care and a turning point for e-health. *Internet Interventions, 20*, Article 100317. https://doi.org/10.1016/j.invent.2020.100317

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Scientific Update and Overview

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Cognitive-Behavioral and Emotion-Focused Couple Therapy: Similarities and Differences

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Abstract

Background: Couples and families often seek therapy to deal with relational distress, which is a result of external or internal factors of the relationship. Two approaches are acknowledged to be most effective in dealing with relationship distress or psychological disorders in couples: (a) cognitive behavioral couple therapy with new directions (CBCT) and (b) emotion-focused couple therapy (EFCT). In this article we investigate how much CBCT and EFCT really differ with regard to working with emotions, which is claimed to be a major focus of EFCT, and whether there exist significant differences in efficacy between these two approaches.
Method: This article critically reviews the theoretical background, process, techniques and outcomes associated with CBCT and EFCT in an effort to challenge the assumptions noted above.
Results: There is no evidence that EFCT is more emotion-focused than CBCT. Both approaches were repeatedly examined with RCT studies with follow-ups. In sum, no significant differences in effect size were found between CBCT and EFCT.
Conclusion: CBCT and EFCT are both effective in reducing couples' distress.

Keywords

couple therapy, cognitive behavioral couple therapy, emotion-focused couple therapy, efficacy

Highlights

- CBCT and EFCT are both effective in helping couples deal with relationship distress.
- Both are similarly effective in helping couples to better understand and cope with their presenting concerns.
- Both approaches address the importance of personal schema, triggering relevant cognitions and emotions.
- Both approaches help couples wherein one partner has been diagnosed with a clinical disorder.

For couples seeking couple therapy, there is broad international empirical evidence advocating that couple therapy is advantageous in reducing relationship distress and improving relationship quality. Overall, couple therapy exhibits excellent efficacy with an internationally established mean effect size of $d = 0.95$, ranging from $d = 0.59$ to 1.03 (e.g., Shadish & Baldwin, 2003, 2005).

Among a large range of different therapeutic approaches, cognitive-behavioral couple therapy (CBCT) and emotion-focused couple therapy (EFCT) are amongst the most widely applied couples' interventions. CBCT as well as EFCT have repeatedly been examined regarding their efficacy. Some claim that EFCT outperforms CBCT and represents the most effective approach for treating relationship problems (e.g., Roesler, 2018). However, an ancient meta-analysis revealed only marginal differences between the various approaches (Shadish & Baldwin, 2005). The purpose of this review is to analyze recent studies on efficacy of both approaches and to test the assumption that EFCT (attachment based) is more emotion-focused than CBCT (learning based).

Brief Review of the Theoretical Underpinnings of CBCT and EFCT

In this section, we will provide a brief overview of the theoretical underpinnings and common methods used in CBCT and EFCT. Denominations of *emotion-focused* versus *cognition-focused* are tested regarding their meaning for clinical work.

Cognitive-Behavioral Couple Therapy

Background

Cognitive-behavioral couple therapy (CBCT) relies on principles from social learning theories and focuses on the interplay between partners' cognitions, behaviors, and emotional responses to help them improve their communication and problem-solving (Epstein & Zheng, 2017). CBCT draws on concepts stemming from behavioral couple

therapy, cognitive therapy, as well as empirical findings in basic research (Baucom et al., 2008). Therapists working from a CBCT lens aim to improve partners' skills (e.g., communication and problem-solving skills), modify dysfunctional cognitions and attitudes, in an attempt to improve relationship quality and decrease emotional distress such as anger, sadness or disgust (Epstein & Baucom, 2002; Epstein & Zheng, 2017).

Process

The goal of CBCT is to help partners restructure cognitions that may yield relational distress, which include unrealistic expectations, dysfunctional attributions and irrational assumptions (Epstein & Zheng, 2017). CBCT operates under the premise that cognitions cause emotions and subsequent behaviors (e.g., the *cognition* "you do not care about me" may lead to *emotions* such as anger and sadness that motivates coercive *behavior* to get more attention). Thus, the assumption of CBCT is that negative mood (dissatisfaction) and emotions (anger, disappointment, frustration, resignation), reflected in deleterious behaviors (i.e., generalized criticism, defensiveness, belligerence, contempt, aggression or violence), are a major motive why couples seek for interventions (Bradbury & Bodenmann, 2020).

Techniques

One of the common techniques used in CBCT is cognitive restructuring, wherein the clinician guides partners to "identify and evaluate cognitions as they occur" (Epstein & Zheng, 2017, p. 143). Dysfunctional cognitions, either regarding irrational beliefs, dysfunctional expectancies or negative attribution styles are viewed as the causes of negative emotions (Bradbury & Fincham, 1990). CBCT aims to strengthen partners' communication skills in order to allow partners to safely disclose their needs and emotions, without risk of their partner's negative reactions. Therefore, instead of blaming the partner, partners learn to express their sentiments and needs using speaker-listener rules and techniques. CBCT also applies *cognitive-emotional techniques* such as cognitive restructuring (i.e., identifying and disputing irrational thoughts leading to negative emotions) (e.g., Baucom et al., 2019).

More recent approaches such as the *integrative behavioral couple therapy* (IBCT; Jacobson & Christensen, 1996) and *coping-oriented couple therapy* (COCT; Bodenmann, 2010) also refer to CBCT principles. However, IBCT focuses on acceptance in addition to the above-mentioned techniques and tries to improve couples' mutual tolerance. COCT focuses on stress and its impact on couples' functioning. This approach addresses mutual emotional understanding facing stress-related negative behaviors towards the partner. By means of the 3-phase-method, partners learn to engage in deepened emotional self-disclosure, empathic listening and providing emotion-focused support (i.e., dyadic coping) that matches the partners' needs. By doing this, emotional bonding, mutual intimacy and closeness as well as mutual trust between partners are enhanced (Bodenmann & Randall,

2020). In sum, techniques used in CBCT aim at improving partners' skills in an attempt to modify dysfunctional cognitions, emotions and behaviors or to accept them under specific circumstances.

Outcomes

CBCT has shown to be effective in improving couples' function. In addition, positive effects are reported regarding partner's psychological (e.g., PTSD and OCD) and physical health (e.g. cancer), as well as other severe stressors that may yield relational concerns (for a review see Epstein & Zheng, 2017).

Emotion-Focused Couple Therapy

Background

Emotionally focused couple therapy (EFCT) is an experiential, humanistic and systemic therapy grounded in attachment theory and social neuroscience (Greenman, Johnson, & Wiebe, 2019). EFCT does not directly focus on skill training, rather, the focus is to build new emotional experiences between partners that foster attachment security (Wiebe & Johnson, 2016). The original framework of EFCT proposed that distress in the relationship could be repaired though regulation of emotions by the other partner (Greenberg & Johnson, 1988). This was later adapted to include foundations of attachment theory as well as working to increase both partner's emotional self-regulation and other regulation (Greenberg & Goldman, 2008; Johnson, 2004). EFCT primarily aims to facilitate the expression of primary emotions (such as feelings of hurt, feelings of inadequacy and deprivation of love, respect and appreciation) and to understand these feelings behind secondary emotions such as anger or contempt (Greenberg & Johnson, 1988).

Process

The overarching goals of EFCT is to have partners access and reprocess their emotional experiences to restructure partners' interaction patterns. The outcome of this approach is to help partners learn new aspects about themselves and develop a more functional pattern of interaction with their partner that is matching with their specific attachment needs (Johnson, 2019). Within EFCT, the therapist tries to strengthen the attachment bond between partners by addressing the intrapsychic (attachment-related experiences) and interpersonal perspective regarding dysfunctional interaction patterns of distressed partners. Emotion-focused couple therapy understands these patterns as the result of an insecure attachment bond where both partners signal attachment distress in a way that inadvertently keeps their partner at a distance (Greenman et al., 2019).

Typically, EFCT is differentiated in three stages (Greenman et al., 2019). In the first stage (*cycle de-escalation*), the therapist tracks and reflects the pattern of interaction with the couple and tries to identify negative patterns wherein the partners may "criticize/at-

tack" one another, which is often followed by "defensiveness/distance". These interaction patterns are viewed as hindering constructive emotional exchange. The goal of the first stage is to gain a meta-perspective of the couples' interaction by realizing that the partners' dysfunctional interaction maintains both partners' attachment insecurity and causes emotional distress. In the second stage (*restructuring interactions*), the therapist tries to give insight into new emotional experiences by facilitating new interactions, which will help lead to secure bonding. The therapist helps to explore attachment vulnerabilities that partners share with each other. In this method, partners learn how to respond to the other in an emotionally attuned and supportive way. Instead of blaming or withdrawing from the partner, partners learn to become more responsive to the other; increasing their awareness of their partner's attachment needs. Instead of negativity, primary emotions such as sadness, fear or shame are expressed. The therapist helps the speaker to find adequate wording for their emotional state. In the third stage (*consolidation*), partners learn new ways of solving problems that become possible based on their secure attachment experience.

Techniques

A primary focus in EFCT is helping couples learn how to communicate their emotions more effectively with one another (Gladding, 2015). Couples are instructed to better perceive their emotions and to engage more in mutual responsiveness and dyadic engagement (Burgess Moser & Johnson, 2008). Hence, in EFCT, couples are encouraged to explore here-and-now emotional experiencing (Greenman et al., 2019). Instead of sharing primary emotions, distressed couples often communicate secondary emotions expressed in attacking, nagging, and withdrawing. As such, the EFCT therapists help guide each partner to uncover primary emotions (sadness, fear, shame, etc.). The therapist guides both partners, working out primary emotions for one, and showing the other partner how to listen emotionally engaged and how to respond in an emotionally attuned way. The "new emotional music then elicits new responses and, gradually, changes the dance between partners" which means that new behavioral interaction patterns can be established (Wiebe & Johnson, 2016, p. 390).

Common techniques within EFCT include *bonding* and *enactments*. Therapists guide couples through the conversations about emotion and encourage each partner to engage in a release of that emotion, to increase self-awareness (Gladding, 2015). This process leads to the therapeutic technique of *bonding*, which is when the partner who is hearing the emotional response can become more aware of their partner's perception, thus increasing empathy. *Enactments*, reminiscent of Gestalt therapy, help each partner explore and express deeper emotions by engaging in role-play or two-chair techniques (Gladding, 2015).

Outcomes

Various studies have shown EFCT's effectiveness with couples in distress, couples coping with post-traumatic stress disorder (PTSD), and couples coping with chronic illness (Bailey, 2002; Beckerman, 2004; Bradley & Johnson, 2005). Additionally, EFCT has been effective in increasing intimacy between partners (Soltani et al., 2013).

Similarities and Differences Between Both Approaches

CBCT and EFCT approaches are grounded in different theories and, as such have a different conceptualization of the development and maintenance of relationship distress. Traditional CBCT is skill-oriented and aimed at teaching couples' new ways of communication and conflict resolution. Methods are a highly structured and often manualized, such as the communication training. New directions in CBCT, like the acceptance approach (Jacobson & Christensen, 1996) or 3-phase-method (Bodenmann, 2010) further expand these methods by focusing on insight-oriented empathic understanding and deepened emotional experiences in the case of the latter approach. All techniques in CBCT, however, focus on the interplay between cognitions and emotions as the major outcome of interest. However, instead of working directly with emotions, therapists address dysfunctional thinking and information processing, negative and unrealistic or exaggerated attitudes towards the partner and their impact on couple's emotional experiences and behaviors. Thus, techniques utilized in CBCT focus on modifying cognitive distortions with the goal to tap into the emotional exchange between partners. COCT and IBCT further offer techniques directly allowing shared emotional experiences like this is the case in the 3-phase-method or the empathic joining technique.

EFCT is considered an experiential approach that enables partners to develop new feelings and interaction patterns. It primarily focuses on attachment schemas or personal needs of belonging, being respected and validated. Partners learn to understand that negative emotions and dysfunctional interaction patterns result from the non-fulfilment of these attachment needs. Instead of a structured training like in CBCT, the EFCT-therapists work with emotional experiences during partners' interactions by making them visible and tangible.

Creating emotional and cognitive awareness of the partner's insecure attachment is a key component of this approach. EFCT-therapists explain emotional reactions and search together with the partners for an attachment-based understanding. Thus, the goals are somewhat similar in EFCT and CBCT (compare 3-phase-method), however, the methods vary. EFCT-therapists are not teaching skills, their approach is less structured and therapists are more active in uncovering processes. CBCT-therapists are similarly allowing emotional experiences and emotional understanding, but by using techniques such as Socratic questioning or the method of prompting (therapists explore and reinforce relevant cognitions and deeper emotions, ask open-ended questions and guide smoothly to

the personally relevant construct that may be an attachment scheme, but can also be any other type of schema).

In sum, both CBCT and EFCT approaches aim to address relationship distress, with the goal of helping couples deal more effectively with negative emotions. Both approaches work with partners' emotional experience, however, the ways in which each method addresses them is different.

Efficacy of CBCT and EFCT

In psychotherapy research, minimal differences in outcomes of the various approaches are reported (Wampold et al., 2002). While some psychotherapies show higher effectiveness in treating specific disorders (e.g., CBCT for anxiety disorders), in general, common factors such as the therapeutic alliance account for more variance than specific treatment modality. Correspondingly, Wampold et al. (2002) report that only 1% of the variability of treatment outcome can be explained by a specific treatment.

Findings are similar in couple therapy and again, differences between various approaches are minimal (Christensen & Heavey, 1999).

Efficacy of CBCT

CBCT is considered one of the most widely evaluated therapeutic approaches for working with couples. Since the 1980ies, several dozens of RCT-studies have supported the effectiveness and efficacy of CBCT (Bradbury & Bodenmann, 2020). 70% of the couples improved after CBCT (Baucom et al., 1998), and 50% show stable effects over a period of five years (Christensen et al., 2010). Christensen et al. (2004) reported 71% of clinical recovery in integrated CBCT compared to 54% in classical CBCT. According to this study, CBCT proves to be efficient in the long term, with an effect size of $d = 0.92$ at the 5-year follow-up, slightly outperformed by ICBT ($d = 1.03$) (Christensen & Glynn, 2019). Bodenmann et al. (2008) reported effect sizes of $d = 1.46$ at the 6-months follow-up and $d = 1.74$ at the one-year follow-up of coping-oriented CBCT in treating depression. In the various meta-analysis, effect sizes for CBCT ranged from $d = 0.53$ (Rathgeber et al., 2019) up to $d = 0.95$ (Byrne et al., 2004).

Efficacy of EFCT

The efficacy of EFCT has been examined in 10 RCT-studies, all which support its efficacy. However, these studies do not always present classical effect sizes. In the meta-analysis by Johnson et al. (1999), including four randomized trials, an effect size of $d = 1.31$ is reported. More recently, Beasley and Ager (2019) published a new meta-analysis that included studies that were conducted and published since the last meta-analysis, covering a period of 19 years. In this meta-analysis, nine RCT studies were included. However, authors did not calculate Cohen's *d*, but Hedges's *g*. Thus, results are not

directly comparable with previous research or studies related to CBCT. Hedges's g was 2.09 (Beasley & Ager, 2019).

In earlier research on EFCT, Johnson and Talitman (1997) report an improvement in relationship quality in 50% of couples (no RCT-study) at post-test, while 70% showed recovery at 3-month follow-up. In a recent study (Wiebe et al., 2017), 61% fully recovered, 11% improved (but no recovery), 25% remained unchanged and 4% showed a deterioration.

Comparison of Intervention Studies and Meta-Analyses

Statements on the efficacy of CBCT are based on a great number of studies (N = 86 studies in the different meta-analyses), usually relatively large samples, and randomized controlled trials (which represent the Golden standard in treatment evaluation studies). The evaluation of EFCT is based on fewer studies (N = 32 studies in the different meta-analyses), not always RCT designs and usually smaller samples. The above-cited most recent meta-analysis by Beasley and Ager (2019) on the effectiveness of EFCT included only four methodologically sound RCT studies, and the first meta-analysis (Johnson et al., 1999) had also included only four trials. Only 0.01% of all conducted evaluation studies in EFCT could be included in this latest meta-analysis because of insufficient methods or sample sizes or other statistical shortfalls. Thus, only four follow-up studies out of nine met inclusion criteria within the last 19 years (Beasley & Ager, 2019). The mean sample size in these studies was considerably small with N_{mean} = 14 in the intervention group versus N_{mean} = 13 in the intervention group. Three out of nine studies were rated to not meet criteria for treatment integrity and the others were at least acceptable (Beasley & Ager, 2019). Often studies were not in the context of relationship distress but related to other problems such as medical issues (e.g., infertility, end-stage cancer or psychological disorders such social anxiety, depression). They represented no "pure" studies on effects of EFCT on relationship distress.

More interesting than reviews and meta-analyses on one single approach are studies directly comparing both approaches. The meta-analysis with 33 suitable primary studies by Rathgeber et al. (2019) is such an example (n = 21 studies on CBCT, n = 12 studies on EFCT). In this study, a total of 2,730 participants were included. Results reveal a medium overall effect size at post-test g = 0.60 (Behavioral cognitive therapy (BCT): g = 0.53; EFCT: g = 0.73). After 6 months smaller effects were reported (overall: g = 0.44; BCT: g = 0.35; EFCT: g = 0.66). Most important, no significant differences in effect sizes were found between the two couple therapy approaches. This finding echoes results of the study by Byrne et al. (2004), where large effect sizes for both treatments (d_{BCT} = 0.95, d_{EFCT} = 1.27) on quality of couples' relationships compared to waiting-list controls are reported. "Taken together, meta-analyses of existing efficacy studies continue to support an approximate d of at least 0.80 for BCT and EFCT, with 60–72% of couples experiencing reliable pre–post improvements in satisfaction" (Bradbury & Bodenmann, 2020, p. 102).

Conclusion

In sum, CBCT and EFCT are both effective in helping couples deal with relationship distress (Bradbury & Bodenmann, 2020). Based on our review of the literature, it is important to acknowledge that while both approaches have their strengths and weaknesses, both are similarly effective in helping couples to better understand and cope with their presenting concerns. Additionally, both approaches address the importance of personal schema, triggering relevant cognitions and emotions. The assumption that CBCT is purely behavioral, focusing on cognitions and neglecting emotions is often wrongly derived from the designation, but lacks any theoretical and practical basis. CBCT and EFCT both address similarly the emotional experiences between partners; however, each approach does so differently. Both approaches have been found to be beneficial in improving relationship distress and helping couples overcome their relational difficulties, in addition to helping couples wherein one partner has been diagnosed with a clinical disorder. It is important that clinicians and policy makers are aware of these two evidence-based approaches, and expand their application to other areas wherein couples may be experiencing distress (e.g., health psychology). Therefore, publications building public awareness for the use of couple therapy in treating psychological disorders are important (Fischer et al., 2016; Leuchtmann & Bodenmann, 2017).

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References

Bailey, G. (2002). Marital discord as pathway to healing and intimacy, utilizing emotionally focused couples' therapy. *Journal of Pastoral Counseling, 37*, 88-100.

Baucom, D. H., Epstein, N. B., LaTaillade, J. J., & Kirby, J. S. (2008). Cognitive-behavioral couple therapy. In A. S. Gurman (Ed.), *Clinical handbook of couple therapy* (Vol. 4, pp. 31-72). New York, NY, USA: Guilford.

Baucom, D. H., Fischer, M. S., Hahlweg, K., & Epstein, N. B. (2019). Cognitive behavioral couple therapy. In B. H. Fiese, M. Celano, K. Deater-Deckard, E. N. Jouriles, & M. A. Whisman (Eds.), *APA handbook of contemporary family psychology: Family therapy and training* (pp. 257–273). https://doi.org/10.1037/0000101-016

Baucom, D. H., Shoham, V., Mueser, K. T., Daiuto, A. D., & Stickle, T. R. (1998). Empirically supported couple and family interventions for marital distress and adult mental health

problems. *Journal of Consulting and Clinical Psychology, 66*(1), 53-88. https://doi.org/10.1037/0022-006X.66.1.53

Beasley, C. C., & Ager, R. (2019). Emotionally focused couples therapy: A systematic review of its effectiveness over the past 19 years. *Journal of Evidence-Based Social Work, 16*(2), 144-159. https://doi.org/10.1080/23761407.2018.1563013

Beckerman, N. L. (2004). The impact of post-traumatic stress disorder on couples: A theoretical framework for assessment and intervention. *Family Therapy, 31*, 129-144.

Bodenmann, G. (2010). New themes in couple therapy: The role of stress, coping and social support. In K. Hahlweg, M. Grawe, & D. H. Baucom (Eds.), *Enhancing couples: The shape of couple therapy to come* (pp. 142-156). Cambridge, MA, USA: Hogrefe.

Bodenmann, G., Plancherel, B., Beach, S. R. H., Widmer, K., Gabriel, B., Meuwly, N., . . . Schramm, E. (2008). Effects of coping-oriented couples therapy on depression: A randomized clinical trial. *Journal of Consulting and Clinical Psychology, 76*(6), 944-954. https://doi.org/10.1037/a0013467

Bodenmann, G., & Randall, A. K. (2020). General and health-related stress and couples' coping. In K. S. Wampler & A. J. Blow (Eds.), *The handbook of systemic family therapy* (Vol. 3, pp. 253-268). Hoboken, NJ, USA: Wiley-Blackwell.

Bradbury, T. N., & Bodenmann, G. (2020). Interventions for couples. *Annual Review of Clinical Psychology, 16*(7), 99-123. https://doi.org/10.1146/annurev-clinpsy-071519-020546

Bradbury, T. N., & Fincham, F. D. (1990). Attributions in marriage: Review and critique. *Psychological Bulletin, 107*(1), 3-33. https://doi.org/10.1037/0033-2909.107.1.3

Bradley, B., & Johnson, S. M. (2005). EFT: An integrative contemporary approach. In M. Harway (Eds.), *Handbook of couples therapy* (pp. 179-193). Hoboken, NJ, USA: Wiley.

Burgess Moser, M. B., & Johnson, S. M. (2008). The integration of systems and humanistic approaches in emotionally focused therapy for couples. *Person-Centered and Experiential Psychotherapies, 7*(4), 262-278. https://doi.org/10.1080/14779757.2008.9688472

Byrne, M., Carr, A., & Clark, M. (2004). The efficacy of behavioral couples therapy and emotionally focused therapy for couple distress. *Contemporary Family Therapy, 26*(4), 361-387. https://doi.org/10.1007/s10591-004-0642-9

Christensen, A., Atkins, D. C., Baucom, B., & Yi, J. (2010). Marital status and satisfaction five years following a randomized clinical trial comparing traditional versus integrative behavioral couple therapy. *Journal of Consulting and Clinical Psychology, 78*(2), 225-235. https://doi.org/10.1037/a0018132

Christensen, A., Atkins, D. C., Berns, S., Wheeler, J., Baucom, D. H., & Simpson, L. E. (2004). Traditional versus integrative behavioral couple therapy for significantly and chronically distressed married couples. *Journal of Consulting and Clinical Psychology, 72*(2), 176-191. https://doi.org/10.1037/0022-006X.72.2.176

Christensen, A., & Glynn, S. (2019). Integrative behavioral couple therapy. In B. H. Fiese, M. Celano, K. Deater-Deckard, E. N. Jouriles, & M. A. Whisman (Eds.), *APA handbook of contemporary family psychology: Family therapy and training* (Vol. 3, pp. 275–290). https://doi.org/10.1037/0000101-017

Christensen, A., & Heavey, C. L. (1999). Interventions for couples. *Annual Review of Psychology, 50*(1), 165-190. https://doi.org/10.1146/annurev.psych.50.1.165

Epstein, N. B., & Baucom, D. H. (2002). *Enhanced cognitive-behavioral therapy for couples: A contextual approach.* https://doi.org/10.1037/10481-000

Epstein, N. B., & Zheng, L. (2017). Cognitive-behavioral couple therapy. *Current Opinion in Psychology, 13*, 142-147. https://doi.org/10.1016/j.copsyc.2016.09.004

Fischer, M. S., Baucom, D. H., & Cohen, M. J. (2016). Cognitive-behavioral couple therapies: Review of the evidence for the treatment of relationship distress, psychopathology, and chronic health conditions. *Family Process, 55*(3), 423-442. https://doi.org/10.1111/famp.12227

Gladding, S. T. (2015). *Family therapy: History, theory, and practice.* Upper Saddle River, NJ, USA: Pearson.

Greenberg, L. S., & Goldman, R. N. (2008). *Emotion-focused couples therapy: The dynamics of emotion, love, and power.* https://doi.org/10.1037/11750-000

Greenberg, L. S., & Johnson, S. M. (1988). *Emotionally focused therapy for couples.* New York, NY, USA: Guilford.

Greenman, P. S., Johnson, S. M., & Wiebe, S. (2019). Emotionally focused therapy for couples: At the heart of science and practice. In B. H. Fiese, M. Celano, K. Deater-Deckard, E. N. Jouriles, & M. A. Whisman (Eds.), *APA handbook of contemporary family psychology: Family therapy and training* (Vol. 3, pp. 291–305). https://doi.org/10.1037/0000101-018

Jacobson, N. S., & Christensen, A. (1996). *Integrative couple therapy: Promoting acceptance and change.* New York, NY, USA: W. W. Norton.

Johnson, S. M. (2004). *The practice of emotionally focused couple therapy.* New York, NY, USA: Brunner Mazel.

Johnson, S. M. (2019). Attachment in action: Changing the face of 21st century couple therapy. *Current Opinion in Psychology, 25*, 101-104. https://doi.org/10.1016/j.copsyc.2018.03.007

Johnson, S. M., Hunsley, J., Greenberg, L., & Schindler, D. (1999). Emotionally focused couples therapy: Status and challenges. *Clinical Psychology: Science and Practice, 6*(1), 67-79. https://doi.org/10.1093/clipsy.6.1.67

Johnson, S. M., & Talitman, E. (1997). Predictors of success in emotionally focused marital therapy. *Journal of Marital and Family Therapy, 23*(2), 135-152. https://doi.org/10.1111/j.1752-0606.1997.tb00239.x

Leuchtmann, L., & Bodenmann, G. (2017). Interpersonal view on physical illnesses and mental disorders. *Swiss Archives of Neurology, Psychiatry and Psychotherapy, 168*(6), 170-174. https://doi.org/10.4414/sanp.2017.00516

Rathgeber, M., Bürkner, P., Schiller, E., & Holling, H. (2019). The efficacy of emotionally focused couples therapy and behavioral couples therapy: A meta-analysis. *Journal of Marital and Family Therapy, 45*(3), 447-463. https://doi.org/10.1111/jmft.12336

Roesler, C. (2018). Die Wirksamkeit von Paartherapie: Teil 1: Eine Übersicht über den Stand der Forschung. *Familiendynamik, 43*(4), 332-341. https://doi.org/10.21706/fd-43-4-332

Shadish, W. R., & Baldwin, S. A. (2003). Meta-analysis of MFT interventions. *Journal of Marital and Family Therapy, 29*(4), 547-570. https://doi.org/10.1111/j.1752-0606.2003.tb01694.x

Shadish, W. R., & Baldwin, S. A. (2005). Effects of behavioral marital therapy: A meta-analysis of randomized controlled trials. *Journal of Consulting and Clinical Psychology, 73*(1), 6-14. https://doi.org/10.1037/0022-006X.73.1.6

Soltani, A., Molazadeh, J., Mahmoodi, M., & Hosseini, S. (2013). A study on the effectiveness of emotional focused couple therapy on intimacy of couples. *Procedia: Social and Behavioral Sciences, 82*, 461-465. https://doi.org/10.1016/j.sbspro.2013.06.293

Wampold, B. E., Minami, T., Baskin, T. W., & Callen Tierney, S. (2002). A meta-(re)analysis of the effects of cognitive therapy versus 'other therapies' for depression. *Journal of Affective Disorders, 68*(2–3), 159-165. https://doi.org/10.1016/S0165-0327(00)00287-1

Wiebe, S. A., & Johnson, S. M. (2016). A review of the research in emotionally focused therapy for couples. *Family Process, 55*(3), 390-407. https://doi.org/10.1111/famp.12229

Wiebe, S. A., Johnson, S. M., Lafontaine, M.-F., Burgess Moser, M., Dalgleish, T. L., & Tasca, G. A. (2017). Two-year follow-up outcomes in emotionally focused couple therapy: An investigation of relationship satisfaction and attachment trajectories. *Journal of Marital and Family Therapy, 43*(2), 227-244. https://doi.org/10.1111/jmft.12206

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The 12-Month Course of ICD-11 Adjustment Disorder in the Context of Involuntary Job Loss

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Supplementary Materials: Materials [see Index of Supplementary Materials]

Abstract

Background: After its redefinition in ICD-11, adjustment disorder (AjD) comprises two core symptom clusters of preoccupations and failure to adapt to the stressor. Only a few studies investigate the course of AjD over time and the definition of six months until the remission of the disorder is based on little to no empirical evidence. The aim of the present study was to investigate the course of AjD symptoms and symptom clusters over time and to longitudinally evaluate predictors of AjD symptom severity.

Method: A selective sample of the Zurich Adjustment Disorder Study, N = 105 individuals who experienced involuntary job loss and reported either high or low symptom severity at first assessment (t1), were assessed M = 3.4 (SD = 2.1) months after the last day at work, and followed up six (t2) and twelve months (t3) later. They completed a fully structured diagnostic interview for AjD and self-report questionnaires.

Results: The prevalence of AjD was 21.9% at t1, 6.7% at t2, and dropped to 2.9% at t3. All individual symptoms and symptom clusters showed declines in prevalence rates across the three assessments. A hierarchical regression analysis of symptoms at t3 revealed that more symptoms at the first assessment ($\beta = 0.32$, $p = .002$) and the number of new life events between the first assessment and t3 ($\beta = 0.29$, $p = .004$) significantly predicted the number of AjD symptoms at t3.

Conclusion: Although prevalence rates of AjD declined over time, a significant proportion of individuals still experienced AjD symptoms after six months. Future research should focus on the specific mechanisms underlying the course of AjD.

Keywords

adjustment disorder, ICD-11, job loss, prevalence, disorders specifically associated with stress

Highlights

- Symptoms of ICD-11 adjustment disorder were highly prevalent among individuals who experienced involuntary job loss up to nine months previously.
- In 30% of the adjustment disorder cases the symptoms persisted beyond the 6-month remission threshold defined in the diagnostic manuals.
- Subsequent life events might complicate recovery from adjustment disorder.
- Mechanisms underlying symptom improvement or exacerbation need to be further studied.

The new description of adjustment disorder (AjD) in the International Classification of Diseases, 11th version (ICD-11) includes the presence of (a) one or a series of psychosocial stressor(s); of (b) preoccupation with the stressor(s); of (c) failure to adapt to the stressor(s); and of (d) significant impairment in personal, family, social, educational, occupational or other important areas in functioning (World Health Organisation [WHO], 2018). In contrast, the Diagnostic and Statistical Manual of Mental Disorders, 5th version (DSM-5) does not define specific symptoms and the diagnosis of AjD is not applicable in the presence of any other mental disorder (American Psychiatric Association [APA], 2013). The usage of AjD based primarily on an exclusion criterion in DSM-5 and earlier ICD-versions has resulted in its usage as a diagnostic rest category with subsyndromal character (Bachem & Casey, 2018; Baumeister & Kufner, 2009). Another difference between the current manuals is that the DSM-5 distinguishes subtypes of AjD, such as depressed mood, anxiety, disturbance of conduct and mixed subtypes (APA, 2013), whereas the ICD-11 does not.

The diagnostic manuals state that the symptoms usually emerge within one (ICD-11) and three (DSM-5) months after the onset of the stressor and that they typically resolve within 6 months, unless the stressor persists for a longer duration (WHO, 2018). This makes AjD a disorder with an essential benign outcome and spontaneous remission by definition. A few studies that investigated readmission rates for AjD cases in clinical settings support this concept (Jäger, Burger, Becker, & Frasch, 2012; Jones, Yates, & Zhou, 2002). However, AjD is also associated with an elevated risk for concurrent or subsequent mental disorders and for suicidality (Casey & Doherty, 2012; Gradus et al., 2010; O'Donnell et al., 2016) and the definition of the 6-months' period is still based on little to no empirical evidence. In injury survivors, 16% of the participants still met the diagnostic criteria of DSM-5 AjD after twelve months post-injury (O'Donnell et al., 2016). In a representative sample from Germany, a significant proportion of individuals who reported AjD symptoms (72%) indicated that the symptoms were present for six to twenty-four months (Maercker et al., 2012). Finally, a study assessing AjD symptoms several years after organ transplantations found that the time since the medical procedure was

unrelated to AjD symptom severity (Bachem, Baumann, & Köllner, 2019). To the best of our knowledge, these are the only studies that specifically focused on the course of AjD over time based on a recent definition of the disorder, all of them putting the six months' period in question.

The Zurich Adjustment Disorder Study (ZADS) investigates the validity of the new ICD-11 definition of AjD in a sample of individuals who involuntarily lost their job and explores predictors of AjD development over time. Previous analyses revealed that the prevalence of AjD in this high-risk sample was 15.5% when applying the full ICD-11 diagnostic criteria to a structured diagnostic interview schedule (Perkonigg, Lorenz, & Maercker, 2018). Based on questionnaire results, the prevalence of a tentative AjD diagnosis was 25.6% at approximately three months after the last day at work (Lorenz, Perkonigg, & Maercker, 2018b), and 18.2% six months later (Lorenz, Makowski, & Maercker, 2019).

Demographic factors such as higher age, female gender or low household budget as well as characteristics of the stress experience such as first job loss, a job that required "brainwork", a job with high responsibility, and a larger number of job applications written to get a new position correlated with higher symptom severity and/or higher odds for a diagnosis of AjD (Perkonigg et al., 2018). Established intrapersonal resources that support coping with adversity such as high self-efficacy and sense of coherence were similarly related to fewer symptoms of AjD (Perkonigg et al., 2018). Finally, the socio-interpersonal framework model for stress-response syndromes (Maercker & Horn, 2013) suggests that different levels of social contexts play a crucial role in the recovery after stress experiences. These contexts include social affects (e.g., shame, anger, loneliness), interactions in close relationships (e.g., social support, empathy) or societal and cultural factors (e.g. social acknowledgement). In accordance with the model, lower self-efficacy, stronger feelings of loneliness, higher dysfunctional disclosure, less perceived social support, and more negative social interactions were identified as correlates of higher symptom severity (Lorenz, Perkonigg, & Maercker, 2018b).

The aim of the present paper is to expand upon previous findings of the ZADS and other longitudinal investigations. First, we aimed to report on the development of AjD symptoms and ICD-11 core symptom clusters in the context of involuntary job loss across three assessments. Based on the current disorder model and previous research, we expected that the prevalence rates of symptoms and symptom clusters would be high initially and that they would decline after six and twelve months. Second, several potential predictors of AjD development were explored. We hypothesized that AjD-related features (initial AjD symptoms, life events experienced), socio-demographic factors (gender, age, household income), and psychosocial factors relevant for stress-response syndromes (e.g., personal beliefs, interpersonal resources) would be associated with long-term outcome.

Method

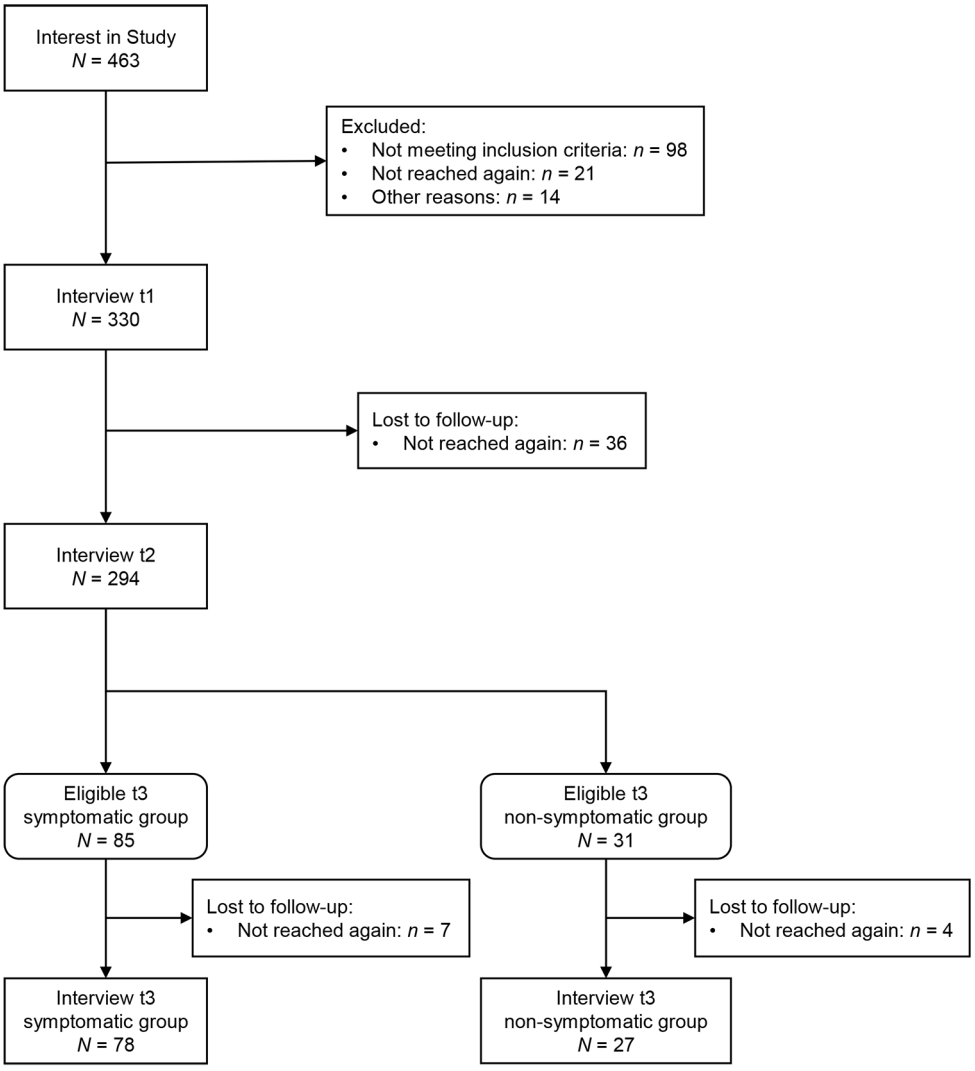
Participants and Procedure

The data for the present analysis stem from the ZADS investigating the new proposal for adjustment disorder in ICD-11 in a sample of individuals who experienced involuntary job loss (Perkonigg et al., 2018). The Ethics Committee of the University of Zurich approved the study in June 2015 and all participants gave written informed consent. The study included all participants who were assessed at three time points with a fully structured clinical diagnostic interview for AjD. The first assessment took place up to nine months after the last day at work (t1), followed by a six-months (t2) and a twelve-months (t3) follow-up assessment. The participants were recruited through local employment offices, newspaper articles, and mailing lists in the greater Zurich area. Participants were excluded if they did not speak German fluently, were unable to give written informed consent, or suffered from a severe mental illness. The latter criterion led to the exclusion of one individual who was assumed to experience a psychotic episode. All participants were invited to participate in the first and second assessment of the study. Since a comparison of extreme groups was planned for the original study, only a sub-sample was invited to the third assessment. Inclusion in the sub-sample was determined after completion of t2. In the *symptomatic group*, we invited individuals who (a) met the criteria for an AjD at t1 or a subclinical AjD (either only preoccupation or only failure to adapt) at t1 and who (b) identified the same worst event at t1 and t2. In the *non-symptomatic group*, we invited individuals who reported a maximum of one symptom of AjD at t1 and at t2. Of the 330 individuals that participated in the first assessment, 294 took part in the second assessment. Of these individuals, 78 met the criteria for the symptomatic group and could be assessed a third time; 27 individuals met the criteria for the non-symptomatic group and could be assessed a third time. This led to a total sample size of $N = 105$ for the present analysis. The participant flow is shown in Figure 1.

Table 1 displays a summary of the demographic characteristics of the sample. T1 was conducted $M = 3.4$ ($SD = 2.1$) months after the last day at work ($Mdn = 3.2$). The interval between t1 and t3 was $M = 12.3$ ($SD = 0.8$) months. At t3, 17.1% ($n = 18$) of the participants had started a new job since t2, 48.6% ($n = 51$) of the sample continued the new job they had started between t1 and t2, 30.5% ($n = 32$) were still unemployed, and 1.9% ($n = 2$) experienced a new job loss.

Figure 1

Participant Flow of the Zurich Adjustment Disorder Study



Note. t1 = first assessment; t2 = second assessment; t3 = third assessment.

Table 1

Demographic Characteristics of the Sample (N = 105)

Variable	*M*	*SD*	*N*	%
Age at t1	46.3	10.0		
Gender				
Male			56	53.3
Female			49	46.7
Marital status at t1				
Married			38	36.2
Separated / divorced			21	20.0
Never married			45	42.9
Registered partnership			1	1.0
Children at t1	0.9	1.1		
Vocational qualification				
On-the-job-training			3	2.9
Formal apprenticeship			39	37.1
University / University of applied sciences			56	53.3
PhD			3	2.9
No qualification			2	1.9
Missing			2	1.9

Measures

Adjustment Disorder Module for Composite International Diagnostic Interview (AjD-CIDI)

Adjustment disorder was assessed with a new module of the Composite International Diagnostic Interview (CIDI) that specifically focuses on AjD after ICD-11 and DSM-5 (AjD-CIDI) (Perkonigg, Strehle, et al., in press). In the beginning, the AjD-CIDI assesses stressors (e.g. family conflict, financial problems, illness of a loved one) that occurred during the 12 months prior to the interview and event-specific characteristics (e.g. time of onset, duration). At the end of this first part, the participants were asked which of the events they experienced as the most distressing. The second part of the interview asks for a range of symptoms occurring in response to this event following the ICD-11 and the DSM-5 definition. The 25 symptoms represent the areas of preoccupation with the stressor and failure to adapt to the stressor, as well as accessory symptoms of avoidance, depression, anxiety and impulsivity. The third part of the module assesses information about onset, recency of symptoms and functional impairment (Perkonigg, Strehle, et al., in press).

We used a modified follow-up version of the AjD module for t2. In this version, the first part asks for new life events and the most distressing event from the previous

interview is coded. The participant then indicated the currently most distressing event out of the new and the old events. Then, the second and third part of the AjD-CIDI were applied with regard to the event coded at t1. At t3, the symptomatic group was interviewed with a version that asked specifically for symptoms in response to the event they talked about at t1 and t2.

The diagnosis of AjD according to ICD-11 (WHO, 2018) was made if the following criteria were met: A) occurrence of a significant life event; B) presence of at least one symptom of preoccupation (recurrent involuntary thoughts about the event, and constant worries related to the event); C) presence of at least two failure to adapt symptoms (concentration problems, difficulties at work/daily activities, loss of interest in work, social network or leisure activities, sleep problems, and loss of self-confidence); D) frequency of symptoms at least 10-15 times per month or clinical relevance of symptoms (impairment at least "moderate" or contact with a health professional about the symptoms); E) exclusion of cases who presented with a current depressive episode and of cases who presented with a current generalized anxiety disorder as defined by the CIDI.

Scales for Predictor Variables

The *General Self-Efficacy Scale* (GSE; Schwarzer & Jerusalem, 1999) was used for the assessment of self-efficacy. The 10-item scale has a 4-point Likert scale response-format (1, *not correct* – 4, *absolutely correct*). The total score is obtained by summing up all individual items and higher scores indicate higher self-efficacy. The psychometric properties of the GSE were satisfactory in earlier validation studies with internal consistencies of .80 – .90 (Hinz, Schumacher, Albani, Schmid, & Brähler, 2006; Schwarzer & Jerusalem, 1999). The internal consistency in the present study was $\alpha = .88$.

We measured sense of coherence using the *Sense of Coherence Scale – Revised* (SOC-R; Bachem & Maercker, 2018). The scale, consisting of 13 items, measures manageability, reflection, and balance. The response-format is a 5-point Likert scale (1, *not at all*, - 5, *completely).* All items are summed up to build a total score of the SOC-R, with one recoded item. Higher scores indicate a higher sense of coherence. Earlier validation studies reported satisfactory psychometric properties for the SOC-R with internal consistencies of $\alpha = .75 - .81$ (Bachem & Maercker, 2018; Mc Gee, Höltge, Maercker, & Thoma, 2018). The internal consistency in the present study was $\alpha = .71$.

A composite score of two single items from other scales was used to measure *feelings of loneliness* (Lorenz, Perkonigg, & Maercker, 2018b). We used one item from the Brief Symptom Inventory – 18 (Spitzer et al., 2011) and one item of the Social Functioning Questionnaire (Tyrer et al., 2005). The item formulations were *'How strong did you experience feelings of loneliness during the past 7 days?'* and *'I feel lonely and isolated from other people'*. The response-format was a 5-point Likert scale (0, *not at all* – 4, *very strong*) and a 4-point Likert scale (0, *almost all the time* – 3, *not at all*), respectively. The

latter item was recoded before building a sum score with the first item of the scale. The correlation between the two items in the present study was α = .70.

The *Disclosure of Trauma Questionnaire* (DTQ) was used in an abbreviated form (Pielmaier & Maercker, 2011) to measure dysfunctional disclosure. The scale, consisting of 12 items with a 6-point Likert scale (0, *not at all* – 5, *absolutely*) response-format, measures the urge to talk, the reluctance to talk, and emotional reactions while disclosing. The individual items are summed up to build a total score; higher scores indicate higher dysfunctional disclosure. Previous studies found satisfying psychometric properties for the DTQ (Müller, Beauducel, Raschka, & Maercker, 2000; Müller & Maercker, 2006). The internal consistency of the abbreviated form was α = .75 in previous studies (Pielmaier & Maercker, 2011) and α = .81 in the present study.

We used the *Social Support Questionnaire, short form* (FSozU-K; Fydrich, Sommer, Tydecks, & Brähler, 2009) to measure perceived social support. The 14 items are answered on a 5-point Likert scale (1, *don't agree*, - 5, *agree)*. The mean of all answered items is used to build the total score and higher scores indicate higher perceived social support. The psychometric properties in the validation of the FSozU-K were satisfactory with an internal consistency of α = .94 (Fydrich et al., 2009). The internal consistency in the present study was α = .93.

A subset of items of the Daily Hassles Scale (Perkonigg & Wittchen, 1998) was used to measure *negative social interactions* (Lorenz, Perkonigg, & Maercker, 2018b). Six items measured negative interactions with the partner, children, parents, siblings, friends, or neighbours during the last two weeks. The original 4-point Likert scale response-format of the items (1, *often* – 4, *never*) was reverse coded, so that a higher mean score indicates more negative social interactions. The internal consistency was α = .68 in a previous study (Lorenz, Perkonigg, & Maercker, 2018b) and α = .73 in the present study.

The *Social Acknowledgement Questionnaire* (SAQ; Maercker & Müller, 2004) measured perceived acknowledgement of the difficult situation of the individual by the social environment. The 16 items, answered on a 4-point Likert scale (0, *not at all* – 3, *completely*), measure general disapproval, disapproval by family or friends, and recognition as a victim. Following the authors of the scale, the total score was built by summing up items 3, 9, and 11 through 16, and subtracting items 1, 2, 4 through 8, and 10. A higher score indicates more social acknowledgement. The validation study of the questionnaire reported satisfactory psychometric properties with an internal consistency of α = .86 (Maercker & Müller, 2004). The internal consistency in the present study was α = .73.

Statistical Analysis

Data were analysed using SPSS version 23. The highest number of missing values was found for social acknowledgement (13%), all other variables had less than 3% missing values and data were missing completely at random. Pairwise case deletion was used in the analyses. The prevalence of ICD-11 AjD was computed with and without consideration

of the exclusion criterion. To investigate predictive factors, we performed a hierarchical regression analysis with the number of symptoms at t3 as outcome. We decided to include all symptoms that were measured by the AjD-CIDI to increase the variance of the outcome variable and because there is still uncertainty about the best conceptualisation of AjD (Lorenz, Hyland, Perkonigg, & Maercker, 2018). The analysis included three steps. In the first step, we included the number of symptoms at t1, the total number of life events reported at t1, and the total number of new life events reported between t1 and t3 as predictors. The second step included socio-demographic characteristics (gender, age, household income < 4000 Swiss francs) and the third step included psychosocial variables (general self-efficacy, loneliness, dysfunctional disclosure, perceived social support, negative social interactions, social acknowledgement). In the second and third step, we included predictor variables that were found to be associated with initial symptom severity and 6-months outcomes in previous publications from this sample (Lorenz, Hyland, et al., 2018; Lorenz, Perkonigg, & Maercker, 2018a, 2018b; Perkonigg et al., 2018). The final model was selected based on the significance of the *F*-statistics. No multicollinearity was found based on the VIF measure (ranged between 1.030 and 1.078).

Results

Descriptives

The total amount of symptoms as measured by the AjD-CIDI was *M* = 7.1 (*SD* = 5.5; *Mdn* = 7.0, *range* = 0-19) at t1, *M* = 4.3 (*SD* = 5.0; *Mdn* = 2.0, *range* = 0-20) at t2, and *M* = 2.1 (*SD* = 2.8; *Mdn* = 1.0, *range* = 0-13) at t3. The total number of life events reported at t1 was *M* = 2.3 (*SD* = 1.2, *range* = 1-7) and the total number of new life events experienced between t1 and t3 was *M* = 1.0 (*SD* = 1.3, *range* = 0-7). The majority of participants (74.3%) indicated the job loss, financial problems or problems with authorities as their worst event at t1, followed by family matters (22.9%; family conflicts/separation/illness or death of family member). The descriptive statistics for the predictor variables and the correlation coefficients between the main predictor variables can be found in the supplementary material.

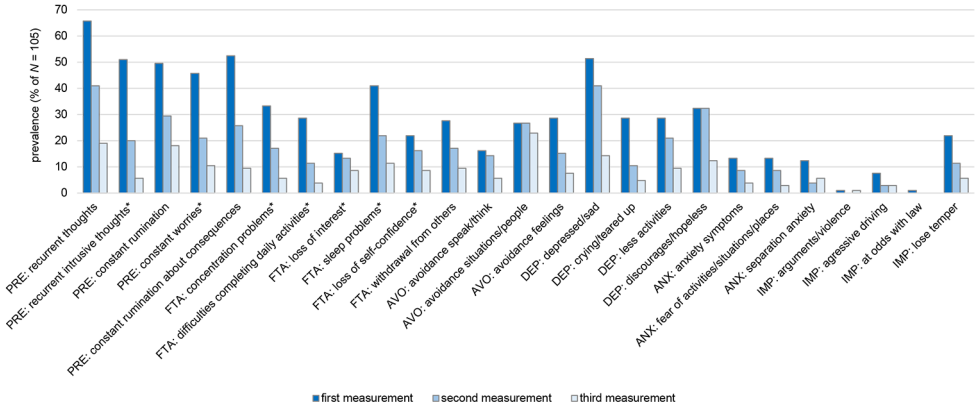
Prevalence of AjD Symptoms

The prevalence rates of the individual symptoms as measured by the AjD-CIDI are displayed in Figure 2. For the majority of symptoms, the prevalence was highest at t1 and lowest at t3. The symptoms measuring preoccupation with the stressor, sleep disturbances (as part of failure to adapt), and feeling low and sad (as part of depressive symptoms) were the most prevalent at t1 with over 40% of the individuals reporting each of them. At t2, repetitive thoughts, feeling low and sad, and feeling discouraged and hopeless for the future (depressive symptom) were the most prevalent symptoms

(each over 30%). The most prevalent symptoms at t3 were repetitive thoughts, rumination about the event, and avoiding situations or individuals that could remind of the event (avoidance symptom) with roughly a 20% prevalence each.

Figure 2

Prevalence (%) of Individual Symptoms That May Occur in ICD-11 Adjustment Disorder Across the Three Assessments



Note. PRE = Preoccupation; FTA = Failure to adapt; AVO = Avoidance; DEP = Depression; ANX = Anxiety; IMP = Impulsivity.
*items used for diagnostic algorithm for adjustment disorder.

Prevalence of AjD Symptom Groups

Table 2 displays the prevalence of the diagnostic criteria across the three assessments. Criterion A was met by every participant since the presence of a stressor was an inclusion criterion of the study. The prevalence rates of preoccupation (Criterion B), failure to adapt (Criterion C), and impairment in social functioning (Criterion D) were highest for the first assessment and declined over time. The prevalence rate of exclusive disorders (Criterion E) remained stable across the three assessments. Approximately every fifth individual met the full diagnostic criteria at t1 (21.9%). This prevalence declined to 6.7% at t2, and to 2.9% at t3. The majority of individuals reported no AjD across all assessments (n = 80; 76.2%). Most of the other participants met the diagnostic guidelines only at t1 (n = 16, 15.2%) or only at t1 and t2 (n = 5, 4.8%). One individual (1.0%) received an AjD diagnosis at all three assessments.

Table 2

Prevalence of Adjustment Disorder Criteria Across the Three Assessments

	T1		T2		T3	
Adjustment Disorder Criterion	***N***	**%**	***N***	**%**	***N***	**%**
Criterion A: Event	105	100.0	105	100.0	105	100.0
Criterion B: Preoccupation	63	60.0	32	30.5	15	14.3
Criterion C: Failure to adapt	44	41.9	18	17.1	10	9.5
Criterion D: Impairment	82	78.1	67	63.8	40	38.1
Criterion E: Exclusive disorders	10	9.5	10	9.5	9	8.6
ICD-11 Adjustment disorder without exclusion criterion	29	27.6	12	11.4	4	3.8
ICD-11 Adjustment disorder with exclusion criterion	23	21.9	7	6.7	3	2.9

Note. T1 = first assessment; T2 = second assessment; T3 = third assessment.

Prediction of AjD Symptoms at t3

Table 3 displays the results of the hierarchical regression analysis for the total number of AjD-CIDI symptoms at t3. The first step included the number of AjD-CIDI symptoms at t1, the number of life events reported at t1, and the number of new live events experienced between t1 and t3 as predictors. This model was significant, $F(3, 86) = 7.648$, $p < .001$. The second model, which included socio-demographic characteristics, and the third model, which included psycho-social variables, did not significantly increase the fit of the model. Thus, the model only including adjustment disorder related characteristics (Model 1) was interpreted. A higher number of AjD-CIDI symptoms at t1 and a higher number of life events experienced between t1 and t3 were associated with a higher number of AjD-CIDI symptoms at t3. The model explained 18% of the variance in the outcome (adjusted $R^2 = .183$).

Table 3

Hierarchical Regression Results (Standardized β Coefficients) for the Total Number of AjD-CIDI Symptoms at the Third Assessment (N = 105)

	Model		
Predictor	**1**	**2**	**3**
Number of AjD-CIDI symptoms at t1	0.316**	0.365***	0.278*
Number of life events at t1	0.060	0.083	0.088
Number of new life events between t1 and t3	0.291**	0.286**	0.292**
Gender		-0.235*	-0.205
Age (t1)		0.046	0.007
Household income < 4000 SFr (t1)		0.000	-0.001
General self-efficacy (t1)			-0.079

	Model		
Predictor	**1**	**2**	**3**
Sense of coherence (t1)			-0.029
Loneliness (t1)			0.164
Dysfunctional disclosure (t1)			-0.032
Perceived social support (t1)			0.078
Negative social interactions (t1)			0.069
Social acknowledgement (t2)			-0.035
F	7.648***	2.130	0.518
R^2	.211	.267	.300
adjusted R^2	.183	.214	.181
ΔR^2		.056	.033

Note. Gender: 1 = male; 2 = female; Household income < 4000 SFr (0 = no; 1 = yes).
*p < .05. **p < .01. ***p < .001.

Discussion

The aim of the present analysis was to investigate the course of adjustment disorder in the context of involuntary job loss over the course of twelve months. It was the first investigation of prevalence rates according to ICD-11 with a new structured diagnostic interview in a high-risk sample. We found an AjD prevalence rate of 21.9% at the first assessment. Previous studies using ICD-10 or DSM-IV criteria found prevalence rates ranging between 6.9% and 38% in high risk populations (e.g., Mitchell et al., 2017; Rundell, 2006), between 3% and 12% in medical settings (e.g., Fernández et al., 2012; Yaseen, 2017), and between 11% and 17% in psychiatric settings (Bruffaerts, Sabbe, & Demyttenaere, 2004; Shear et al., 2000). Based on a self-report questionnaire, studies investigating the new ICD-11 approach reported varying prevalence rates between 21% and 61% in high-risk populations (e.g., Dannemann et al., 2010; Dobricki, Komproe, de Jong, & Maercker, 2010). However, they refer to a tentative diagnosis and did not apply the ICD-11 exclusion criterion. The prevalence rate in this sample, consisting of extreme groups with high or low AjD symptoms at previous assessments, dropped to 3% at the third assessment, which is only slightly higher than prevalence rates found in general population-based samples (e.g., Ayuso-Mateos et al., 2001; Glaesmer, Romppel, Braehler, Hinz, & Maercker, 2015). At the same time, the prevalence rate was lower than the twelve-months prevalence rate found in the O'Donnell et al. (2016) study investigating the DSM-5 model in a post-injury sample. This could be either an effect of the different diagnostic guidelines applied (ICD-11 or DSM-5) or an effect of the stressor (job loss vs. injuries). Future studies should aim at a direct comparison between ICD-11 and DSM-5 diagnostic guidelines.

As expected, there was a decline in AjD symptoms over time. This generally supports the assumption of a favourable outcome of AjD. However, a substantial proportion (seven of the twenty-three cases) with an AjD at the first assessment still met the diagnostic criteria for an AjD six months later. This represents 30% of the AjD cases that show a longer duration of the disorder than the conditional six-month threshold in ICD-11 and DSM-5. It could be argued that the life event 'job loss', which was rated to be the worst event by the majority of the sample, or its consequences is often not resolved within the time period of six months the ICD-11 mentions as "typical" for a resolution. This argument is supported by the high number of new or subsequent life events in the present sample, which might complicate recovery. It emphasizes the difficulty of applying time period features like six months in stress-related disorders and implies to use this feature only after a thorough substantive examination and a flexible interpretation of the abovementioned period.

The second aim of this study was to investigate factors that predict AjD symptoms after twelve months. The hierarchical approach allowed us to examine whether only AjD-related characteristics explain long-term outcome or whether socio-demographic factors and psychosocial processes add explanatory power over the course of twelve months. The results indicate that higher initial symptomatology and more life stressors following the event significantly predicted higher symptomatology twelve months later and that AjD-related characteristics might be a sufficient explanation for symptom severity over the course of twelve months, supporting the concept of a stress-response syndrome. However, the selection of potential risk and protective factors was limited, and future studies should include other relevant predictors since the model was only able to explain 18% of the variation in symptom severity after twelve months.

We included socio-demographic and psychosocial predictors that were associated with initial symptom severity in earlier studies (e.g., Lorenz, Perkonigg, & Maercker, 2018b; Perkonigg et al., 2018). Although these predictors were not longitudinally associated with AjD symptoms, they were associated with initial symptom severity. Since initial symptom severity was one of the strongest predictors of long-term outcome, the effect of the socio-demographic and psychosocial predictors on t3 AjD symptoms could be indirect, via symptoms at t1. Hence, future studies could focus on a possible mediation effect of initial symptom severity on the association between socio-demographic and psychosocial predictors and long-term outcome. If this mediation was true, it could be reasonable to target these factors to achieve a better long-term outcome. This assumption finds support in two recent self-help intervention studies for AjD. These interventions aimed at enhancing resilience for example by improving problem-solving skills or mobilizing social support and showed medium to large effect sizes for the reduction of AjD related symptomatology over time (Bachem & Maercker, 2016; Eimontas, Rimsaite, Gegieckaite, Zelviene, & Kazlauskas, 2018). Alternative explanations for the result that especially the number of life events predicted symptom severity at t3 could be memory

effects or attention deficits. The AjD-CIDI stressor list also covers psychosocial stress of minor intensity, such as troubles with neighbours or giving up a hobby. Individuals who are worse off could be particularly sensitive to these minor stressors while better adjusted individuals may find it unnecessary to report these events.

The analyses for AjD symptoms were based on all symptoms that may occur in AjD rather than only the ICD-11 core symptom cluster of preoccupation and failure to adapt because of the differences between the major diagnostic classification systems. While the ICD-11 defines specific core symptoms (WHO, 2018), the DSM-5 kept the previous definition that is not based on specific criteria but on the exclusion of other mental disorders (APA, 2013). These dissimilarities are a result of the lack of research around AjD and of a lack of agreement on the main characteristics of the disorder, and they might result in differences in access to treatment. Across the three assessments, different symptoms of preoccupation with the stressor were among the most prevalent symptoms, supporting the inclusion of this symptom group in the diagnostic guidelines in ICD-11. Symptoms that reflect depressive reactions were also commonly present, suggesting that it might be reasonable to include mood alterations in the AjD definition as it is the case in DSM-5. These results could be a first evidence for the validity of both approaches and further revisions of the guidelines might include features of both definitions. Future research should not only focus on the most prevalent symptoms but also try to identify symptoms that are associated with high functional impairment or that show high discriminatory power.

The use of the new ICD-11 diagnostic guidelines and a fully structured clinical diagnostic interview make this study unique. Still, it has several limitations. First, the data stems from a particular high-risk sample, which limits the generalizability to all AjD cases. Second, the sample for this study was based on specific selection criteria. We specifically defined a symptomatic and a non-symptomatic group to increase variance in the data. Moreover, we lifted inclusion criterion b) for the non-symptomatic group in order to be able to investigate incidence rates for adjustment disorder. This specific methodology complicated interpretation of prevalence findings at t3. Furthermore, the recruitment was based on self-selection since we did not apply a systematic or stratified recruitment strategy. These methodological concerns restrict the generalizability of the results to the whole population of unemployed individuals. Third, we did only control for the presence of a depressive episode and/or generalised anxiety disorder and not the full list of exclusive disorders as recommended by ICD-11. Future studies should consider the full range of clinically meaningful exclusions. Fourth, the interval between assessments was chosen at six months to investigate the proposal of the diagnostic guidelines for AjD. Research that includes shorter intervals between assessments could shed further light into the dynamics of the disorder. Last, the number of predictors in the hierarchical regression could have limited the power of the analysis considering the sample size. This could have masked some predictive effects and future studies should increase the sample

size. In addition, loneliness was assessed with two items from different scales rather than with an established questionnaire.

Adjustment disorder has been a diagnostic category that received little attention in research despite a frequent use in clinical practice (Evans et al., 2013; Reed, Correia, Esparza, Saxena, & Maj, 2011). The relatively high prevalence of AjD in this study, the methodological concerns raised by our findings, and the aforementioned issues of disorder definition again stress the importance of a systematic inclusion of AjD in research in order to understand maladaptive responses to life stress better, especially since AjD is associated with a higher risk for the development of severe psychopathology and suicidality (e.g., Casey & Doherty, 2012; O'Donnell et al., 2016). This study furthermore showed that even though AjD symptomatology shows a favourable course over time, it can also persist beyond the six-month threshold as proposed by ICD-11 and DSM-5. Further research is needed to understand the mechanisms underlying the disorder and determining the long-term outcome of AjD. Moreover, future studies comparing prevalence rates between ICD-11 and DSM-5 may deepen our understanding of maladjustment to stressful life events.

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Ethics Approval: The authors assert that all procedures contributing to this work comply with the ethical standards of the relevant national and institutional committees on human experimentation and with the Helsinki Declaration of 1964 and its later amendments. All persons gave their written informed consent prior to their inclusion in the study.

Data Availability: Data from this study are not publicly available as informed consent and ethical approval for public data sharing were not obtained from participants. The data are readily available upon request by qualified scientists. Any enquiries regarding data accessibility can be addressed to the first author.

Supplementary Materials

The Supplementary Materials contain the descriptive statistics of the main measures of the study and the correlations between study variables (for access see Index of Supplementary Materials below).

Index of Supplementary Materials

Lorenz, L., Maercker, A., & Bachem, R. (2020). *Supplementary materials to "The 12-month course of ICD-11 adjustment disorder in the context of involuntary job loss"* [Descriptive statistics and correlation coefficients]. PsychOpen. https://doi.org/10.23668/psycharchives.3463

References

American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders* (5th ed.). Arlington VA, USA: Author. https://doi.org/10.1176/appi.books.9780890425596.744053

Ayuso-Mateos, J. L., Vazquez-Barquero, J. L., Dowrik, C., Lehtinen, V., Dalgard, O. S., Casey, P., . . . Wilkinson, G. (2001). Depressive disorders in Europe: Prevalence figures from the ODIN study. *The British Journal of Psychiatry, 179*, 308-316. https://doi.org/10.1192/bjp.179.4.308

Bachem, R., Baumann, J., & Köllner, V. (2019). ICD-11 adjustment disorder among organ transplant patients and their relatives. *International Journal of Environmental Research and Public Health, 16*, Article 3030. https://doi.org/10.3390/ijerph16173030

Bachem, R., & Casey, P. (2018). Adjustment disorder: A diagnose whose time has come. *Journal of Affective Disorders, 227*, 243-253. https://doi.org/10.1016/j.jad.2017.10.034

Bachem, R., & Maercker, A. (2016). Self-help interventions for adjustment disorder problems: A randomized waiting-list controlled study in a sample of burglary victims. *Cognitive Behaviour Therapy, 45*, 397-413. https://doi.org/10.1080/16506073.2016.1191083

Bachem, R., & Maercker, A. (2018). Development and psychometric evaluation of a revised sense of coherence scale. *European Journal of Psychological Assessment, 34*, 206-215. https://doi.org/10.1027/1015-5759/a000323

Baumeister, H., & Kufner, K. (2009). It is time to adjust the adjustment disorder category. *Current Opinion in Psychiatry, 22*, 409-412. https://doi.org/10.1097/YCO.0b013e32832cae5e

Bruffaerts, R., Sabbe, M., & Demyttenaere, K. (2004). Attenders of a university hospital psychiatric emergency service in Belgium. *Social Psychiatry and Psychiatric Epidemiology, 39*, 146-153. https://doi.org/10.1007/s00127-004-0708-x

Casey, P., & Doherty, A. (2012). Adjustment disorder: Implications for ICD-11 and DSM-5. *The British Journal of Psychiatry, 201*, 90-92. https://doi.org/10.1192/bjp.bp.112.110494

Dannemann, S., Einsle, F., Kämpf, F., Joraschky, P., Maercker, A., & Weidner, K. (2010). Anpassungsstörungen nach einem neuen diagnostischen Konzept bei Patienten einer psychosomatischen Poliklinik – Beschwerden, Veränderungsbereitschaft und Psychotherapiemotivation [New diagnostic concept of adjustment disorders in psychosomatic outpatients – Symptom severity, willingness to change, psychotherapy motivation]. *Zeitschrift für Psychosomatische Medizin und Psychotherapie, 56*, 231-243. https://doi.org/10.13109/zptm.2010.56.3.231

Dobricki, M., Komproe, I. A., de Jong, J., & Maercker, A. (2010). Adjustment disorders after severe life-events in four postconflict settings. *Social Psychiatry and Psychiatric Epidemiology, 45*, 39-46. https://doi.org/10.1007/s00127-009-0039-z

Eimontas, J., Rimsaite, Z., Gegieckaite, G., Zelviene, P., & Kazlauskas, E. (2018). Internet-based self-help intervention for ICD-11 adjustment disorder: Preliminary findings. *The Psychiatric Quarterly, 89*, 451-460. https://doi.org/10.1007/s11126-017-9547-2

Evans, S. C., Reed, G. M., Roberts, M. C., Esparza, P., Watts, A. D., Correia, J. M., . . . Saxena, S. (2013). Psychologists' perspectives on the diagnostic classification of mental disorders: Results from the WHO-IUpsyS Global Survey. *International Journal of Psychology, 48*, 177-193. https://doi.org/10.1080/00207594.2013.804189

Fernández, A., Mendive, J. M., Salvador-Carulla, L., Rubio-Valera, M., Luciano, J. V., Pinto-Meza, A., . . . Serrano-Blanco, A. (2012). Adjustment disorder in primary care: Prevalence, recognition and use of services. *The British Journal of Psychiatry, 201*, 137-142. https://doi.org/10.1192/bjp.bp.111.096305

Fydrich, T., Sommer, G., Tydecks, S., & Brähler, E. (2009). Fragebogen zur sozialen Unterstützung (F-SozU): Normierung der Kurzform (K-14) [Social Support Questionnaire (F-SozU): Standardization of short form (K-14)]. *Zeitschrift für Medizinische Psychologie, 18*, 43-48.

Glaesmer, H., Romppel, M., Braehler, E., Hinz, A., & Maercker, A. (2015). Adjustment disorder as proposed for ICD-11: Dimensionality and symptom differentiation. *Psychiatry Research, 229*, 940-948. https://doi.org/10.1016/j.psychres.2015.07.010

Gradus, J. L., Qin, P., Lincoln, A. K., Miller, M., Lawler, E., & Lash, T. L. (2010). The association between adjustment disorder diagnosed at psychiatric treatment facilities and completed suicide. *Journal of Clinical Epidemiology, 2*, 23-28. https://doi.org/10.2147/CLEP.S9373

Hinz, A., Schumacher, J., Albani, C., Schmid, G., & Brähler, E. (2006). Bevölkerungsrepräsentative Normierung der Skala zur Allgemeinen Selbstwirksamkeitserwartung [Standardization of the general self-efficacy scale in the German population]. *Diagnostica, 52*, 26-32. https://doi.org/10.1026/0012-1924.52.1.26

Jäger, M., Burger, D., Becker, T., & Frasch, K. (2012). Diagnosis of adjustment disorder: Reliability of its clinical use and long-term stability. *Psychopathology, 45*, 305-309. https://doi.org/10.1159/000336048

Jones, R., Yates, W. R., & Zhou, M. H. (2002). Readmission rates for adjustment disorders: Comparison with other mood disorders. *Journal of Affective Disorders, 71*, 199-203. https://doi.org/10.1016/S0165-0327(01)00390-1

Lorenz, L., Hyland, P., Perkonigg, A., & Maercker, A. (2018). Is adjustment disorder unidimensional or multidimensional? – Implications for ICD-11. *International Journal of Methods in Psychiatric Research, 27*, Article e1591. https://doi.org/10.1002/mpr.1591

Lorenz, L., Makowski, L., & Maercker, A. (2019). Diagnostik und Risikofaktoren der ICD-11 Anpassungsstörung: Ergebnisse der Zürcher Studie zu Anpassungsstörungen nach ungewolltem Arbeitsplatzverlust [Diagnostics and risk factors for ICD-11 adjustment disorders – Findings from the Zurich Adjustment Disorder Study]. *Trauma & Gewalt, 13*, 6-18. https://doi.org/10.21706/tg-13-1-6

Lorenz, L., Perkonigg, A., & Maercker, A. (2018a). The course of adjustment disorder following involuntary job loss and its predictors of latent change. *Clinical Psychological Science, 6*, 647-657. https://doi.org/10.1177/2167702618766290

Lorenz, L., Perkonigg, A., & Maercker, A. (2018b). A socio-interpersonal approach to adjustment disorder: The example case of involuntary job loss. *European Journal of Psychotraumatology, 9*, Article 1425576. https://doi.org/10.1080/20008198.2018.1425576

Maercker, A., Forstmeier, S., Pielmaier, L., Spangenberg, L., Brähler, E., & Glaesmer, H. (2012). Adjustment disorders: Prevalence in a representative nationwide survey in Germany. *Social Psychiatry and Psychiatric Epidemiology, 47*, 1745-1752. https://doi.org/10.1007/s00127-012-0493-x

Maercker, A., & Horn, A. B. (2013). A socio-interpersonal perspective on PTSD: The case for environments and interpersonal processes. *Clinical Psychology & Psychotherapy, 20*, 465-481. https://doi.org/10.1002/cpp.1805

Maercker, A., & Müller, J. (2004). Social acknowledgment as a victim or survivor: A scale to measure a recovery factor of PTSD. *Journal of Traumatic Stress, 17*, 345-351. https://doi.org/10.1023/B:JOTS.0000038484.15488.3d

Mc Gee, S. L., Höltge, J., Maercker, A., & Thoma, M. V. (2018). Evaluation of the revised Sense of Coherence scale in a sample of older adults: A means to assess resilience aspects. *Aging & Mental Health, 22*, 1438-1447. https://doi.org/10.1080/13607863.2017.1364348

Mitchell, A. J., Sheth, B., Gill, J., Yadegarfar, M., Stubbs, B., Yadegarfar, M., & Meader, N. (2017). Prevalence and predictors of post-stroke mood disorders: A meta-analysis and meta-regression of depression, anxiety and adjustment disorder. *General Hospital Psychiatry, 47*, 48-60. https://doi.org/10.1016/j.genhosppsych.2017.04.001

Müller, J., Beauducel, A., Raschka, J., & Maercker, A. (2000). Kommunikationsverhalten nach politischer Haft in der DDR — Entwicklung eines Fragebogens zum Offenlegen der Traumaerfahrungen [Communication after political imprisonment: Disclosure of the traumatic experiences]. *Zeitschrift fur Politische Psychologie, 8*, 413-427.

Müller, J., & Maercker, A. (2006). Disclosure und wahrgenommene gesellschaftliche Wertschätzung als Opfer als Prädiktoren von PTB bei Kriminalitätsopfern [Disclosure and perceived social acknowledgement as victim as PTSD predictors in crime victims]. *Zeitschrift für Klinische Psychologie und Psychotherapie, 35*, 49-58. https://doi.org/10.1026/1616-3443.35.1.49

O'Donnell, M. L., Alkemade, N., Creamer, M., McFarlane, A. C., Silove, D., Bryant, R., . . . Forbes, D. (2016). A longitudinal study of adjustment disorder after trauma exposure. *The American Journal of Psychiatry, 173*, 1231-1238. https://doi.org/10.1176/appi.ajp.2016.16010071

Perkonigg, A., Lorenz, L., & Maercker, A. (2018). Prevalence and correlates of ICD-11 adjustment disorder: Findings from the Zurich Adjustment Disorder Study. *International Journal of Clinical and Health Psychology, 18*, 209-217. https://doi.org/10.1016/j.ijchp.2018.05.001

Perkonigg, A., Strehle, J., Lorenz, L., Maercker, A., & Beesdo-Baum, K. (in press). Reliability and validity of the ICD-11 adjustment disorder diagnosis according to a new module for the Composite International Diagnostic Interview. *Journal of Traumatic Stress.*

Perkonigg, A., & Wittchen, H. U. (1998). *The Daily-Hassles Scale: Research version.* München, Germany: Max-Planck-Institut für Psychiatrie.

Pielmaier, L., & Maercker, A. (2011). Psychological adaptation to life-threatening injury in dyads: The role of dysfunctional disclosure of trauma. *European Journal of Psychotraumatology, 2*, Article 8749. https://doi.org/10.3402/ejpt.v2i0.8749

Reed, G. M., Correia, J. M., Esparza, P., Saxena, S., & Maj, M. (2011). The WPA-WHO Global Survey of Psychiatrists' Attitudes Towards Mental Disorders Classification. *World Psychiatry: Official Journal of the World Psychiatric Association (WPA), 10*, 118-131. https://doi.org/10.1002/j.2051-5545.2011.tb00034.x

Rundell, J. R. (2006). Demographics of and diagnosis in Operation Enduring Freedom and Operations Iraqi Freedom personell who were psychiatrically evacuated from the theater of operations. *General Hospital Psychiatry, 28*, 352-356. https://doi.org/10.1016/j.genhosppsych.2006.04.006

Schwarzer, R., & Jerusalem, M. (1999). *Skalen zur Erfassung von Lehrer- und Schülermerkmalen. Dokumentation der psychometrischen Verfahren im Rahmen der Wissenschaftlichen Begleitung des Modellversuchs Selbstwirksame Schulen* [Scales for the assessment of teacher and student characteristics – Documentation of the psychometric procedures of the scientific evaluation of the model project self-efficacious schools]. Berlin, Germany: Freie Universität Berlin.

Shear, M. K., Greeno, C., Kang, J., Ludewig, D., Frank, E., Swartz, H. A., & Hanekamp, M. (2000). Diagnosis of nonpsychotic patients in community clinics. *The American Journal of Psychiatry, 157*, 581-587. https://doi.org/10.1176/appi.ajp.157.4.581

Spitzer, C., Hammer, S., Löwe, B., Grabe, H. J., Barnow, S., Rose, M., . . . Franke, G. H. (2011). Die Kurzform des Brief Symptom Inventory (BSI -18): erste Befunde zu den psychometrischen Kennwerten der deutschen Version [The Short Version of The Brief Symptom Inventory (BSI-18): Preliminary psychometric properties of the German translation]. *Fortschritte der Neurologie · Psychiatrie, 79*, 517-523. https://doi.org/10.1055/s-0031-1281602

Tyrer, P., Nur, U., Crawford, M., Karlsen, S., MacLean, C., Rao, B., & Johnson, T. (2005). The Social Functioning Questionnaire: A rapid and robust measure of perceived functioning. *International Journal of Social Psychiatry, 51*, 265-275. https://doi.org/10.1177/0020764005057391

World Health Organisation. (2018). *International Classification of Diseases, 11th revision.* Retrieved from https://icd.who.int/browse11/l-m/en

Yaseen, Y. A. (2017). Adjustment disorder: Prevalence, sociodemographic risk factors, and its subtypes in outpatient psychiatry clinic. *Asian Journal of Psychiatry, 28*, 82-85. https://doi.org/10.1016/j.ajp.2017.03.012

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Development and Initial Validation of a Brief Questionnaire on the Patients' View of the In-Session Realization of the Six Core Components of Acceptance and Commitment Therapy

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Supplementary Materials: Materials [see Index of Supplementary Materials]

Abstract

Background: Assessing in-session processes is important in psychotherapy research. The aim of the present study was to create and evaluate a short questionnaire capturing the patients' view of the in-session realization of the six core components of Acceptance and Commitment Therapy (ACT).

Method: In two studies, psychotherapy patients receiving ACT (Study 1: n = 87) or Cognitive-Behavioral Therapy (CBT) (Study 2, Sample 1: n = 115; Sample 2: n = 156) completed the ACT session questionnaire (ACT-SQ). Therapists were n = 9 ACT therapists (Study 1) and n = 77 CBT trainee therapists (Study 2).

Results: Factor structure: Exploratory factor analyses suggested a one-factor solution for the ACT-SQ. Reliability: Cronbach's alpha of the ACT-SQ was good (Study 1: $\alpha = .81$; Study 2, Sample 1: $\alpha = .84$; Sample 2: $\alpha = .88$). Convergent validity: The ACT-SQ was positively correlated with validated psychotherapeutic change mechanisms ($p < .05$). Criterion validity: Higher ACT-SQ scores were associated with better treatment outcomes ($p < .05$).

Conclusion: The study provides preliminary evidence for the reliability and validity of the ACT-SQ to assess the in-session realization of the six core components of ACT in the patients' view. Further validation studies and ACT-SQ versions for therapists and observers are necessary.

Keywords

Acceptance and Commitment Therapy, session report, reliability, validity

Highlights

- The ACT-SQ is a patient self-report on the in-session realization of the six core components of ACT.
- Data of two studies (ACT, CBT therapies) support the reliability and validity of the ACT-SQ.
- Further validation studies and ACT-SQ versions for therapists and observers are necessary.

Acceptance and Commitment Therapy (ACT; Hayes, 2004) is one of the third-wave cognitive-behavioral therapies (CBT). Several reviews and meta-analyses summarized the effectiveness of ACT for various clinically relevant problems (A-Tjak et al., 2015; Graham, Gouick, Krahé, & Gillanders, 2016; Öst, 2014; Powers, Zum Vörde Sive Vörding, & Emmelkamp, 2009; Swain, Hancock, Hainsworth, & Bowman, 2013). A central treatment strategy in ACT is reducing the patients' psychological inflexibility and thereby increasing psychological flexibility. The ACT model of psychological flexibility consists of the following of six core components (see Table 1): acceptance, cognitive defusion, contact with the present moment, self-as-context, values, and committed action. These six core components of psychological flexibility can be described as mindfulness and acceptance processes (acceptance, cognitive defusion, contact with the present moment, self-as-context) as well as commitment and behavior change processes (contact with the present moment, self-as-context, values, and committed action). The counterparts of these six components of psychological flexibility are formulated in the ACT model of psychological inflexibility (see Table 1): experiential avoidance (vs. acceptance), cognitive fusion (vs. cognitive defusion), dominance of the conceptualized past and feared future (vs. contact with the present moment), attachment to the conceptualized self (vs. self-as-context), lack of values (vs. values), and inaction, impulsivity, or avoidant persistence (vs. committed action).

A meta-analysis on laboratory-based component studies revealed positive effects for treatment strategies on the six ACT core components (Levin, Hildebrandt, Lillis, & Hayes, 2012). Moreover, psychotherapy research has shown that patients who improve their skills in acceptance, cognitive defusion, contact with the present moment, and values-based actions during therapy show better treatment outcomes (e. g., Åkerblom, Perrin, Rivano Fischer, & McCracken, 2015; Arch, Wolitzky-Taylor, Eifert, & Craske, 2012b; Baranoff, Hanrahan, Kapur, & Connor, 2013; Forman, Herbert, Moitra, Yeomans, & Geller, 2007; Forman et al., 2012; Hesser, Westin, & Andersson, 2014; Niles et al., 2014; Vowles & McCracken, 2008; Zettle, Rains, & Hayes, 2011). Interestingly, some of these

studies found improvements in ACT processes to be beneficial for the outcome not only in ACT but also in CBT as well as multidisciplinary treatments. ACT processes might therefore be change mechanisms in other psychotherapies than ACT as well, i. e. general change mechanisms. Some ACT processes were even more strongly associated with the outcome in CBT than in ACT, for example in the study by Arch et al. (2012b) in which cognitive defusion predicted worry reductions more in CBT than in ACT.

Table 1

ACT Model of Psychological Flexibility and ACT Model of Psychological Inflexibility

ACT model of psychological flexibility		**ACT model of psychological inflexibility**	
Component	**Description**	***Component***	**Description**
Acceptance	Being open towards all experiences	*Experiential avoidance*	Avoiding unwanted experiences
Cognitive defusion	Observing thoughts and inner experiences come and go	*Cognitive fusion*	Being entangled in one's thoughts and inner experiences
Contact with the present moment	Non-judgmental awareness of current experiences	*Dominance of the conceptualized past and feared future*	Ruminating on the past or worrying about the future
Self-as-context	Being aware of one's experiences without attachment to them	*Attachment to the conceptualized self*	Inflexible identification with a self-image
Values	Having identified valued directions	*Lack of values*	Having no orientation in life
Committed action	Effective behavior related to one's values	*Inaction, impulsivity, or avoidant persistence*	Problems to keep either commitments or to set goals

Several questionnaires have been published to measure a patient's skill in the ACT components: e. g., Acceptance and Action Questionnaire II (Bond et al., 2011); Acceptance and Action Questionnaire for University Students (Levin, Krafft, Pistorello, & Seeley, 2019); Comprehensive assessment of Acceptance and Commitment Therapy processes (Francis, Dawson, & Golijani-Moghaddam, 2016); Chronic Pain Acceptance Questionnaire (McCracken, Vowles, & Eccleston, 2004), Cognitive Fusion Questionnaire (Gillanders et al., 2014), Multidimensional Experiential Avoidance Questionnaire (Gámez, Chmielewski, Kotov, Ruggero, Suzuki, & Watson, 2014), Tinnitus Acceptance Questionnaire (Weise, Kleinstäuber, Hesser, Westin, & Andersson, 2013), The Valued Living Questionnaire (Wilson, Sandoz, Kitchens, & Roberts, 2010). How strong patients improve their skills in ACT components might depend on the in-session realization of the ACT

components. As far as we know, no study has yet explored this research question. This might be because only the observer-based Drexel University ACT/CBT Therapist Adherence Rating Scale (DUTARS; McGrath, 2012) is available to measure the degree the ACT components are realized in a psychotherapy session. The DUTARS was applied in previous clinical trials on ACT to assess treatment adherence (Arch et al., 2012a; Gloster et al., 2015). Although such observer-based measures provide valuable data, there are several barriers to apply observer-based ratings in psychotherapy, especially under the conditions of routine practice. For example, observers must be trained to provide reliable and valid data, financial or other compensations are necessary since observing sessions or session segments consumes a serious amount of time (Weck, Grikscheit, Höfling, & Stangier, 2014), and only certain consent to being observed in-session limiting the generalizability of the results.

Besides observer ratings, ratings given by patients are complementary data sources. Patient ratings on in-session processes are easier to obtain than observer ratings. Patients can fill out session questionnaires directly after the psychotherapy session to measure the degree therapeutic factors were realized in this given psychotherapy session. Patient ratings of in-session processes are especially relevant as they correlate most consistently with psychotherapy outcome (e. g, Horvath & Symonds, 1991; Mander et al., 2013, 2015; Ogrodniczuk, Piper, Joyce, & McCallum, 2000). Several session questionnaires were published on the in-session realization of the therapeutic alliance (Horvath & Greenberg, 1989) and the psychotherapeutic change processes according to Grawe (1997): problem actuation (activation of problems and related emotions), clarification of meaning (acquiring new insights and a deeper understanding of the problems), resource activation (recognizing potential, strengths, and positive facets), and mastery (the ability to cope with problems) (see Mander et al., 2013, 2015). Yet, no session report exists, to our knowledge, which captures the in-session realization of the six core components of ACT. A brief, time-economic and psychometrically sound ACT session report would have the potential to enrich psychotherapy research as well as clinical practice. Clinical implications would be that this measure could be applied in more settings than the observer-based DUTARS and that therapists could use this measure to obtain feedback on the patients' perspective of the in-session realization of the ACT components.

In the present study, we developed and evaluated a brief ACT session questionnaire (ACT-SQ; see Supplementary Materials). The ACT-SQ was created to obtain patient ratings on the in-session realization of the ACT components of psychological flexibility. In this manuscript, we present two studies. Study 1 investigated the factor structure, the reliability, and the convergent validity. Study 2 analyzed the factor structure, the reliability, the convergent validity, and also criterion validity. The following research questions were evaluated:

1. What is the factor structure of the ACT-SQ?
2. How is the reliability (internal consistency) of the ACT-SQ?

3. With regard to convergent validity: How are the associations between the ACT-SQ and general change mechanisms? The general change mechanisms proposed by Grawe (1997) – problem actuation, clarification of meaning, resource activation, mastery – were used to evaluate convergent validity. The general change mechanisms of Grawe were used to test convergent validity due to two reasons. First, these general change mechanisms are considered to be relevant in all psychotherapies, therefore also in ACT. Second, ACT processes might also be general psychotherapeutic change mechanisms, since – as mentioned above – improvements in ACT processes have been found to beneficial for the outcome not only in ACT but also in CBT and multidisciplinary treatments.
4. Are the factor structure, reliability, and convergent validity of the ACT-SQ comparable between a sample of patients treated with ACT (Study 1) and a sample of patients treated with CBT (Study 2)? ACT and CBT have similarities and differences (Arch & Craske, 2008; Harley, 2015) so that the factor structure, reliability, and convergent validity of the ACT-SQ might resemble more the similarities or the differences.
5. Regarding criterion validity: Is the ACT-SQ associated with treatment outcomes?
6. Are the factor structure, reliability, convergent validity, and criterion validity of the ACT-SQ comparable in different treatment phases? It has been discussed that the earlier and later phases of psychotherapy differ for example in common factors (Ilardi & Craighead, 1994; Lambert, 2005) so that the factor structure, reliability, convergent validity, and criterion validity of the ACT-SQ might depend on the treatment phase.

Study 1

Method

The study was performed according to the resolution of Helsinki and the professional obligations for therapists. No ethics committee was involved in Study 1 because no harmful procedures were applied and questionnaire-data were collected anonymously. The responsible psychotherapists asked their patients to take part in the study. The informed consent of the participants was implied through questionnaire completion. The anonymized questionnaires were sent by the therapists to the first author.

Measures

The following two questionnaires were administered simultaneously to the patients during psychotherapy: the newly developed ACT-SQ and the psychometrically sound patient version of the "Scale for the Multiperspective Assessment of General Change Mechanisms in Psychotherapy" (SACiP; Mander et al., 2013).

The SACiP evaluates the degree the therapeutic alliance and other change mechanisms according to Grawe (1997) were realized in the given psychotherapy session. The SACiP consists of adapted items from the German shortened version of the Working Alliance Inventory (WAI-S; Munder, Wilmers, Leonhart, Linster, & Barth, 2010) as well as from the Bernese Post Session Report (BPSR; Flückiger et al., 2010). Factor analyses revealed the following six SACiP scales: emotional bond, agreement on collaboration, problem actuation, clarification of meaning, mastery, and resource activation (Mander et al., 2013). The emotional bond scale and the agreement on collaboration scale measure aspects of the therapeutic alliance, the problem actuation scale assesses how strong problems as well as related emotions were activated in the session, the clarification of meaning scale measures the new insights the patient gained into his/her behavior during the session, the mastery scale assesses the degree the session helped the patients to cope with his/her problems, and the resource activation scale measures how strong the patients' strengths were used in-session. The measure demonstrated an excellent factor structure with factor loadings of $.51 \leq \lambda \leq .85$. Confirmatory factor analyses supported the exploratory model. The instrument revealed good to excellent internal consistencies with $.71 \leq \alpha \leq .90$. Studies also demonstrated criterion validity since treatment outcome was significantly predicted by all change mechanisms except for problem actuation (e.g. Mander et al., 2013, 2015). Example items of the SACiP patient version are the following: "Today, I felt comfortable in the relationship with the therapist" (emotional bond), "In today's session, I was highly emotionally involved" (problem actuation), "Today, the therapist intentionally used my abilities for therapy" (resource activation), "Today, I became more aware of the motives for my behavior" (clarification of meaning), "Today, the therapist and I worked toward mutually agreed upon goals" (agreement on collaboration), "Today, we really made progress in therapy in overcoming my problems (mastery).

In the ACT-SQ, patients rate how strong the ACT components of psychological flexibility were realized in psychotherapy sessions on a five point Likert scale. Each item of the ACT-SQ represents one ACT component. Six pilot items of the ACT-SQ were formulated by T.P. on the basis of the ACT literature. T.P. then discussed the items with CBT psychotherapists with ACT expertise (J.K., G.H.E., and A.M.). The experts gave feedback regarding the fit of the items to the ACT model and provided concrete suggestions how the items could be optimized. The six pilot items were changed and refined accordingly. The resulting six items represent the items of the final ACT-SQ and were used in the present study (the ACT-SQ is available license free, the German and English version are included in the Appendix, see Supplementary Materials).

Participants

Therapists: The $n = 69$ ACT therapists listed in the German section of the Association for Contextual Behavioral Science (Deutschsprachige Gesellschaft für kontextuelle Verhaltenswissenschaften e.V.; DGKV) were invited to participate in October 2015 and the

n = 68 ACT therapists listed in the e-mail list of the German ACT network were invited to partake in December 2014. Therefore, therapists listed in both the German section of the Association for Contextual Behavioral Science and the e-mail list of the German ACT network were contacted twice. Nine ACT therapists (see Acknowledgements) took part and encouraged their patients to fill in the ACT-SQ and the SACiP after one psychotherapy session. The nine ACT therapists were certified in cognitive-behavioral therapy (CBT) and their average work experience with ACT amounted to *M* = 4.56 years (*SD* = 2.46).

Patients: Eighty-seven patients treated by the *n* = 9 ACT therapists completed the ACT-SQ after the *M* = 21.25th psychotherapy session (*SD* = 19.84). The description of the participating *N* = 87 patients is given in Table 2. The diagnoses were made by the responsible therapist.

Table 2

Description of the Patients of Study 1

Gender	***n***	**%**
male	33	37.9
female	53	60.9
no data	1	1.2
Diagnoses according to chapter V of the ICD-10 (all diagnoses, not only primary diagnosis)	***n***	**%**
F4	53	40.2
F3	46	34.8
F1	15	11.4
F6	8	6.1
others	10	7.6
Outpatients / Inpatients	***n***	**%**
outpatient	78	89.7
inpatient	9	10.3
Comorbidity: Amount of diagnoses according to chapter V of the ICD-10	***M***	***SD***
	1.54	0.71
Age at time of assessment	***M***	***SD***
	42.48	14.79

Note. F4 = Neurotic, stress-related and somatoform disorders; F3 = Mood (affective) disorders; F1 = Mental and behavioural disorders due to psychoactive substance use; F6 = Disorders of adult personality and behavior. Number of diagnoses higher than number of patients since multiple diagnoses per patients are possible.

Analyses

SPSS 25 was used to perform the statistical analyses. Means (*M*), standard deviations (*SD*), frequencies (*n*), and percentages (%) were calculated for the sample description. To explore the factor structure of the ACT-SQ, an exploratory factor analysis (EFA) with maximum likelihood estimation and with oblique rotation (oblimin direct) was performed. The Kaiser criterion (factors with eigenvalues larger than 1 were retained), the Kaiser-Meyer-Olkin Measure of Sampling Adequacy (KMO), and the Bartlett's Test

of Sphericity were applied. Cronbach's alpha (α) was computed to measure reliability. Furthermore, Pearson correlation coefficients (r) were calculated to measure correlations between the ACT-SQ and general change mechanisms (convergent validity). All statistical tests were performed two-tailed and the significance value was set to $p < .05$. Results will be presented with and without Bonferroni-correction for multiple comparisons.

Results

Factor structure and reliability: The EFA produced a KMO value of .79 and the Bartlett's test reached significance, $\chi^2(15) = 150.04$; $p < .01$. The eigenvalues amounted to 3.06, 0.85, 0.73, 0.58, 0.44, 0.34. Therefore, only one factor was retained when Kaiser's criterion was applied. The loadings of the six items are presented in Table 3. There were no cross-loadings. Cronbach's alpha (α) across all six items amounted to $\alpha = .81$.

Table 3

Loadings of the ACT-SQ in Study 1

The last (XY) psychotherapy session(s) helped me...	Loading λ
Item 1 Acceptance "...to accept unpleasant feelings, thoughts or body sensations rather than fight them"	.58
Item 2 Cognitive defusion "...to gain more inner distance from unpleasant feelings, thoughts or body sensations and to observe them rather than getting caught up in them"	.65
Item 3 Contact with the present moment "...to stay in the here and now (in the present moment) rather than concerning myself with my future and my past"	.60
Item 4 Self-as-context "...to realize that my feelings, thoughts and body sensations are part of me, but that I am more than my feelings, thoughts and body sensations"	.72
Item 5 Values "...to recognize what is important to me in my life and what gives orientation to my life"	.61
Item 6 Committed action "...to act in daily life according to what is important to me in my life and what gives orientation to my life"	.70

Note. Sample of Study 1: $N = 87$ patients treated by $n = 9$ ACT therapists.

Correlations with general change mechanisms: The associations between the ACT-SQ mean score and the mean scores of the SACiP scales are presented in Table 4. Before applying Bonferroni correction ($p < .05$), the ACT-SQ was significantly correlated with all general change mechanisms except for problem actuation. The association between the

ACT-SQ and the emotional bond, however, was not significant anymore after (p < .008) applying Bonferroni correction (p = .05 / 6 comparisons).

Table 4

Correlations Between the ACT-SQ and the SACiP Scales in Study 1

	SACiP					
Variable	**Emotional bond**	**Problem actuation**	**Resource activation**	**Clarification of meaning**	**Agreement on collaboration**	**Mastery**
ACT-SQ	.23*	.10	.55**	.43**	.40**	.64**

Note. Sample of Study 1: N = 87 patients treated by n = 9 ACT therapists. ACT-SQ = ACT Session Questionnaire; SACiP = Scale for the Multiperspective Assessment of General Change Mechanisms in Psychotherapy.
*p < .05. **p < .001.

Discussion

The results provide preliminary evidence for the factor structure, the reliability, and the convergent validity of the ACT-SQ. Regarding Research Question 1, we found a one-factor solution. Results for Research Question 2 indicate a good reliability. Convergent validity (Research Question 3) was supported by significant correlations between the ACT-SQ and general change mechanisms except for problem actuation. A limitation of the study is the relatively small sample size of participating ACT therapists. Future research could use recently published recommendations on how to motivate therapists for psychotherapy research (Taubner, Klasen, & Munder, 2016) to obtain larger samples. Moreover, no associations between the ACT-SQ and treatment outcomes (criterion validity) were evaluated. Therefore, Study 2 was planned to investigate the criterion validity of the ACT-SQ. Another aim was to investigate whether the factor structure, the reliability, and the convergent validity as shown in Study 1 can be replicated in Study 2.

Study 2

Method

The methods of Study 2 were approved by the local ethics committee (Ethikkommission der Fakultät für Verhaltens- und Empirische Kulturwissenschaften der Universität Heidelberg) and written informed consent was obtained from the patients.

Measures

The ACT-SQ and the SACiP (see measures in Study 1) were administered to patients after the 15th therapy session and at the end of psychotherapy. Furthermore, the German versions of the Brief Symptom Inventory (BSI; Franke, 2000) and the Beck Depression

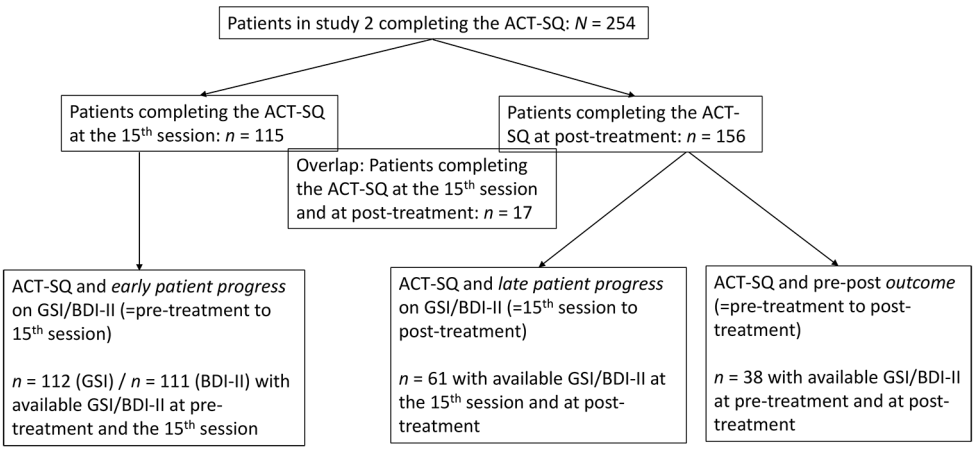
Inventory (BDI-II; Hautzinger, Keller, & Kühner, 2009) were administered as outcome measures at pre-treatment and post-treatment as well as after the 15th psychotherapy session. The Global Severity Index (GSI) of the BSI and the total score of the BDI-II were used in the study at hand. These measures are reliable and valid (see for example, Franke, 2000 for the German version of BSI; Derogatis & Melisaratos, 1983 for the English version of BSI; Kühner et al., 2007 for the German version of BDI-II; Beck & Steer, 1998 for the English version of BDI-II). references. Cronbach's alpha (α) values have been reported to be high: between .92 and .96 for the GSI of the German BSI and ≥ .84 for the German BDI-II.

Participants

Therapists and patients were different from the therapists and patients included in Study 1. Between November 2016 and November 2017, *n* = 77 CBT trainee therapists working at a large outpatient training center took part. These therapists treated the *n* = 254 patients who completed the ACT-SQ: *n* = 115 outpatients completed the ACT-SQ after the 15th CBT session and *n* = 156 outpatients completing the ACT-SQ at the end of CBT (post-treatment). As the ACT-SQ was implemented for ongoing and new therapies, these two patient sample were independent from each other except for *n* = 17 patients who completed the ACT-SQ at both assessment points. A subset of patients filling in the ACT-SQ also provided data for the outcome measures (see flow-chart in Figure 1) and their data was used to evaluate associations between the ACT-SQ and pre-post outcome as well as early and late patient progress (Research Questions 5 and 6).

Figure 1

Flow-Chart



The patients answering the ACT-SQ at the end of CBT had on average M = 39.68 (SD = 14.98) individual therapy sessions. The description of the participating patients is given in Table 5. Structured clinical interviews (SCID) were used to make the diagnoses.

Table 5

Description of the Patients of Study 2

Variable	15th session sample		Post-treatment sample	
	n	**%**	***n***	**%**
Gender				
male	51	44.3	68	43.6
female	64	55.7	88	56.4
Diagnoses according to chapter V of the ICD-10 (all diagnoses, not only primary diagnosis)				
F4	68	36.0	87	34.3
F3	72	38.1	102	40.2
F1	10	5.3	16	6.3
F6	22	11.6	23	9.1
others	17	9.0	26	10.2
	M	***SD***	***M***	***SD***
Comorbidity: Amount of diagnoses according to chapter V of the ICD-10				
	1.64	.84	1.63	.87
Age at time of assessment				
	36.50	13.03	35.73	13.60

Note. F4 = Neurotic, stress-related and somatoform disorders; F3 = Mood (affective) disorders; F1 = Mental and behavioural disorders due to psychoactive substance use; F6 = Disorders of adult personality and behavior. Number of diagnoses higher than number of patients since multiple diagnoses per patients are possible.

Analyses

SPSS 25 was used to perform the statistical analyses. Means (M), standard deviations (SD), frequencies (n), and percentages (%) were calculated for the sample description. An EFA with maximum likelihood estimation and oblique rotation (oblimin direct) was performed to investigate the factor structure of the ACT-SQ. The Kaiser criterion (factors with eigenvalues larger than 1 were retained), the Kaiser-Meyer-Olkin Measure of Sampling Adequacy (KMO), and the Bartlett's Test of Sphericity were applied. Cronbach's alpha (α) was computed to measure reliability. Furthermore, Pearson correlation coefficients (r) were calculated to measure associations between the ACT-SQ and general change mechanisms (convergent validity). Moreover, associations between the ACT-SQ and treatment outcome were explored with linear regression analyses. To measure the pre-post outcome, the outcome measure (GSI, BDI-II) at post-treatment was the dependent variable and the ACT-SQ at post-treatment as well as the outcome measure (GSI, BDI-II) at pre-treatment were independent variables. We also investigated associations between the ACT-SQ and early as well as late patient progress. For early patient progress, the patient reported outcome measure (GSI, BDI-II) at the 15th CBT session was the dependent

variable and the ACT-SQ at the 15th CBT session as well as the outcome measure (GSI, BDI-II) at pre-treatment were independent variables. For late patient progress, the patient reported outcome measure (GSI, BDI-II) at post-treatment was the dependent variable and the ACT-SQ at post-treatment as well as the outcome measure (GSI, BDI-II) at the 15th CBT session were independent variables. We also performed these analyses without the ACT-SQ as independent variable to evaluate how the R2-squared values change when including the ACT-SQ as independent variable. All statistical tests were performed two-tailed and the significance value was set to $p < .05$. Results will be given with and without Bonferroni-correction for multiple comparisons.

Results

Factor structure and reliability for the 15th CBT session sample: The EFA produced a KMO value of .86 and the Bartlett's test was significant, $\chi^2(15) = 235.14$; $p < .01$. The eigenvalues were 3.33, 0.81, 0.54, 0.50, 0.46, 0.36. Only one factor was retained when Kaiser's criterion was applied. The loadings of the six items are given in Table 6. There were no cross-loadings. Cronbach's alpha (α) across all six items was $\alpha = .84$ for the 15th CBT session sample.

Table 6

Loadings of the ACT-SQ in Study 2

	Loading λ	
The last (XY) psychotherapy session(s) helped me…	**15th session sample**	**Post-treatment sample**
Item 1 Acceptance "…to accept unpleasant feelings, thoughts or body sensations rather than fight them"	.53	.66
Item 2 Cognitive defusion "…to gain more inner distance from unpleasant feelings, thoughts or body sensations and to observe them rather than getting caught up in them"	.78	.73
Item 3 Contact with the present moment "…to stay in the here and now (in the present moment) rather than concerning myself with my future and my past"	.65	.78
Item 4 Self-as-context "…to realize that my feelings, thoughts and body sensations are part of me, but that I am more than my feelings, thoughts and body sensations"	.67	.69

The last (XY) psychotherapy session(s) helped me...	Loading λ	
	15th session sample	Post-treatment sample
Item 5 Values "...to recognize what is important to me in my life and what gives orientation to my life"	.67	.84
Item 6 Committed action "...to act in daily life according to what is important to me in my life and what gives orientation to my life"	.78	.79

Note. 15th session sample of Study 2: n = 115 patients; post-treatment sample of Study 2: n = 156 patients; both samples treated by n = 77 CBT trainee therapists.

Factor structure and reliability for the post-treatment sample: For the EFA, the KMO value was .87 and the Bartlett's test reached significance, $\chi^2(15) = 450.37$; $p < .01$. The eigenvalues were 3.79, 0.58, 0.54, 0.44, 0.40, 0.25. Only one factor was retained when Kaiser's criterion was applied. The loadings of the six items are shown in Table 6. There were no cross-loadings. Cronbach's alpha (α) across all six items amounted to α = .88 for the CBT post-treatment sample.

Correlations with general change mechanisms: The associations between the ACT-SQ mean score and the mean scores of the SACiP scales at CBT session 15th and at post-treatment are shown in Table 7. The correlations were all positive and statistically significant before ($p < .05$) and after ($p < .004$) correcting for multiple testing ($p = .05 / 12$ comparisons).

Table 7

Correlations Between the ACT-SQ and the SACiP Scales in Study 2

	SACiP					
ACT-SQ	Emotional bond	Problem actuation	Resource activation	Clarification of meaning	Agreement on collaboration	Mastery
15th session sample	.40**	.42**	.75**	.73**	.54**	.78**
Post-treatment sample	.49**	.59**	.78**	.74**	.66**	.83**

Note. 15th session sample of Study 2: n = 115 patients; post-treatment sample of Study 2: n = 156 patients; both samples treated by n = 77 CBT trainee therapists. ACT-SQ = ACT Session Questionnaire; SACiP = Scale for the Multiperspective Assessment of General Change Mechanisms in Psychotherapy.
**$p < .001$.

Associations with treatment outcome: The results of the linear regression models are summarized in Table 8. The results indicate that higher ACT-SQ scores were associated with more beneficial pre-post outcome as well as with early and late patient progress before ($p < .05$) and after ($p < .008$) Bonferroni correction ($p = .05 / 6$ comparisons).

Table 8

Associations Between the ACT-SQ and Treatment Outcomes

Dependent variable / Parameter	Unstandardized coefficient B		Standardized Coefficient β	*t*	*p*
	β	*SE*			
Outcome					
GSI at post-treatment (*n* = 38)					
Constant	1.19	0.23		5.13	< .001
GSI at pre-treatment	0.40	0.10	0.47	3.97	< .001
ACT-SQ at post-treatment	-0.36	0.07	-0.59	-5.00	< .001
BDI-II at post-treatment (*n* = 38)					
Constant	25.56	3.91		6.55	< .001
BDI-II at pre-treatment	0.33	0.09	0.34	3.85	< .001
ACT-SQ at post-treatment	-7.91	0.99	-0.71	-8.03	< .001
Early patient progress					
GSI at 15th therapy session (*n* = 112)					
Constant	0.66	0.17		3.83	< .001
GSI at pre-treatment	0.70	0.06	0.72	11.78	< .001
ACT-SQ at 15th therapy session	-0.20	0.06	-0.21	-3.36	.001
BDI-II at 15th therapy session (*n* = 111)					
Constant	13.86	3.05		4.54	< .001
BDI-II at pre-treatment	0.62	0.06	0.65	9.96	< .001
ACT-SQ at 15th therapy session	-4.42	1.02	-0.28	-4.31	< .001
Late patient progress					
GSI at post-treatment therapy session (*n* = 61)					
Constant	0.79	0.22		3.54	.001
GSI at 15th therapy session	0.63	0.11	0.53	5.72	< .001
ACT-SQ at post-treatment	-0.25	0.06	-0.38	-4.09	< .001
BDI-II at post-treatment session (*n* = 61)					
Constant	18.65	4.06		4.59	< .001
BDI-II at 15th therapy session	0.51	0.10	0.45	5.04	< .001
ACT-SQ at post-treatment	-5.77	1.06	-0.49	-5.45	< .001

Note. SE = Standard Error; ACT-SQ = ACT Session Questionnaire; GSI = Global Severity Index of the Brief Symptom Inventory; BDI-II = Beck Depression Inventory.

For the pre-post outcome, the *R*-squared values were .17 (GSI) and .28 (BDI-II) when predicting the outcome measure at post-treatment by the outcome measure at pre-treatment and the *R*-squared values changed to .52 (GSI) and .75 (BDI-II) when predicting the outcome measure at post-treatment by the outcome measure at pre-treatment as well as by the ACT-SQ.

For the early patient progress, the R-squared values were .56 (GSI) and .46 (BDI-II) when predicting the outcome measure at the 15th session by the outcome measure at pre-treatment and the R-squared values changed to .60 (GSI) and .54 (BDI-II) when predicting

the outcome measure at the 15th session by the outcome measure at pre-treatment as well as by the ACT-SQ.

For late patient progress, the R-squared values were .44 (GSI) and .49 (BDI-II) when predicting the outcome measure at post-treatment by the outcome measure at the 15th session and the R-squared values changed to .57 (GSI) and .67 (BDI-II) when predicting the outcome measure at post-treatment by the outcome measure at the 15th session as well as by the ACT-SQ.

Discussion

Study 2 supported the one-factor solution (Research Question 1), a good reliability (Research Question 2), as well as associations between the ACT-SQ and general change mechanisms (convergent validity, Research Question 3). The results were comparable to the results obtained in Study 1 with the exception that the general change mechanism problem actuation was correlated with the ACT-SQ only in Study 2 (Research Question 4). The results indicate that the ACT-SQ has many similarities in ACT and CBT but that there are also differences (Research Question 5): the overlap between the in-session realization of problem actuation and the ACT components was specific for CBT. Criterion validity was not evaluated in Study 1 (ACT) but the significant associations between the ACT-SQ and pre-post outcome in Study 2 (CBT) indicate criterion validity (Research Question 5). Despite possible differences between earlier and later treatment phases (Ilardi & Craighead, 1994; Lambert, 2005), the factor structure, reliability, convergent validity, and criterion validity of the ACT-SQ were comparable in the earlier and later treatment phases (Research Question 6). A limitation of Study 2 is that the sample size on associations between the ACT-SQ and pre-post outcome was relatively small. Moreover, the results on criterion validity rely on a cross-sectional basis (outcome at x+1 was associated with the ACT-SQ at x+1) and future studies including session-to-session ACT-SQ and outcome assessments should investigate whether the ACT-SQ at session x-1 predicts the outcome at session x (Rubel, Rosenbaum, & Lutz, 2017).

General Discussion

A brief session questionnaire ACT-SQ was designed to obtain patient ratings on the in-session realization of the ACT components of psychological flexibility. The ACT-SQ was evaluated in ACT as well as CBT.

Results showed a one-factor solution (Research Question 1) and a good reliability (Research Question 2). All KMO values were good (.7 - .8) or great (.8 - .9) according to Hutcheson and Sofroniou (1999) or Field (2009). Moreover, all Bartlett's tests were significant indicating that factor analysis was appropriate (Field, 2009). The loadings of all items were well above .45 as recommended in the literature (see for example,

Bühner, 2010) and there were no cross-loadings. The one extracted factor could stand for the degree the in-session processes helped to increase the patient's psychological flexibility. To further evaluate this hypothesis, a study is necessary investigating whether higher ACT-SQ session scores result in more improvements on established instruments measuring skills of psychologically flexibility (e. g., Acceptance and Action Questionnaire II; Bond et al., 2011).

Besides factor structure and reliability, we tested the convergent validity. Convergent validity was evaluated by correlating the ACT-SQ with the general change mechanisms proposed by Grawe (1997) since these mechanisms are considered to be relevant in all psychotherapies and because ACT processes might also be general change mechanisms as they mediated the outcome not only in ACT but also in CBT and multidisciplinary treatments (e. g., Åkerblom et al., 2015; Arch et al., 2012b). These analyses related to Research Question 3 revealed that the ACT-SQ is significantly associated with general change mechanisms (except for problem actuation in Study 1) according to Grawe (1997), most strongly with resource activation and mastery. A cautious clinical interpretation of these findings could be as follows: The content of the ACT-SQ items are associated with coping and self-efficacy as is the content of the items of the SACiP resource activation and mastery scales (Mander et al., 2013). Furthermore, the SACiP emotional bond and agreement on collaboration scales reflect the interaction processes between patient and therapist. The ACT-SQ items do not directly target this therapeutic relationship aspect. Hence, stronger associations of ACT-SQ and resource activation and mastery than with the alliance scales seem plausible. In summary, it is important to note that the ACT-SQ items are most strongly related to proximal items (resources and mastery) but also to items with more distanced but clinically relevant content (therapeutic alliance). This further underlines the validity of the measure. With regard to similarities and differences between ACT and CBT (Arch & Craske, 2008; Harley, 2015), most psychometric values were comparable between ACT and CBT, only a few differences emerged in the context of convergent validity (Research Question 4): associations between the ACT-SQ and problem actuation reached significance only in CBT. This could indicate more overlap between problem actuation and the ACT components in CBT than in ACT but it could also be related to the fact that the sample size of Study 1 (ACT) was not as large as the sample size of Study 2 (CBT). The same reasons might explain why the association between the ACT-SQ and the emotional bond was not significant anymore after controlling for multiple testing in Study 1 (ACT) but not in Study 2 (CBT).

In another step, we tested the criterion validity. This was related to Research Question 5 and the results showed significant associations between the ACT-SQ and outcome measures. It should be kept in mind, however, that relations with treatment outcomes were investigated only in CBT. Future research is necessary to evaluate whether the associations between the ACT-SQ and treatment outcomes are comparable or different between CBT and ACT. Finally, the factor structure, reliability, convergent validity, and

criterion validity were comparable between earlier and later treatment phases (Research Question 6). Although differences in treatment phases have been highlighted (Ilardi & Craighead, 1994; Lambert, 2005), these differences did apparently no affect the psychometric values of the ACT-SQ.

A limitation of the current work is that only a patient version of the ACT-SQ was created and evaluated. A therapist version of the ACT-SQ would be an important tool that could be developed by future studies to get a more comprehensive picture of the therapeutic process. Other shortcomings of the studies at hand are that criterion validity was tested only in CBT but not in ACT. Moreover, contrasting the psychometric values in earlier vs. later treatment phases was possible only in CBT but not in ACT. Future studies on ACT are important to investigate criterion validity and similarities/differences between earlier and later ACT phases. A further limitation is that the mean of sessions attended was relatively high so that it remains unclear how well the results can be generalized to shorter psychotherapies. Moreover, we did not include other measures of ACT processes to correlate them with the ACT-SQ. Further validation studies should, therefore, compare ACT-SQ patient ratings with observer-based DUTARS ratings, since patient ratings are only one data source to rate in-session processes. Related to the factor analysis, setting the Kaiser criterion for determining the amount of factors at 1 is rather an arbitrary rule of thumb and an empirically founded way of determining the factors (i.e. Horn's parallel analysis or Velicer's MAP test) would have been a better method. In replication studies with larger samples, the factor structure needs to be tested with confirmatory factor analysis whether the instrument shows adequate model fit (Bühner, 2010). It is per se more probable for such a short questionnaire like the ACT-SQ to have a one-factor solution. Another suggestion for future research would be to enter additional predictors to the regression analyses to test interactions between patient characteristics (e. g., amount of diagnoses) and the impact the ACT-SQ has on the outcome. It would also be very interesting for future research to examine whether the factor structure of the ACT-SQ remains stable when patients are treated by specific ACT modules (open vs. engaged, see Villatte et al., 2016). The ACT-SQ might also be useful to measure adherence to ACT and to continuously track the ACT processes during psychotherapy. Parallel session-to-session assessments of the ACT processes and outcomes would allow investigating how the ACT processes are associated with patient progress on a between- and within-person level (Rubel et al., 2017). Such a systematic monitoring would also enable evaluating the ACT processes before and after sudden losses or sudden gains (Wucherpfennig, Rubel, Hofmann, & Lutz, 2017). Future research on group psychotherapy could also explore associations between group factors (see for example, Tasca et al., 2016, and Vogel, Blanck, Bents, & Mander, 2016) and ACT components.

In summary, the ACT-SQ has a clear factor structure, good reliability, shows strong associations to other validated psychotherapeutic change processes and is associated with treatment outcomes. Implications of this study are that the license-free ACT-SQ is

a reliable and valid measure that can be used to measure how patients experience the in-session realization of ACT components.

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Supplementary Materials

The Supplementary Materials contain the English and German version of the ACT-SQ (for unrestricted access see Index of Supplementary Materials below).

Index of Supplementary Materials

Probst, T., Mühlberger, A., Kühner, J., Eifert, G. H., Pieh, C., Hackbarth, T., & Mander, J. (2020). *Supplementary materials to "Development and initial validation of a brief questionnaire on the patients' view of the in-session realization of the six core components of Acceptance and Commitment Therapy"* [Questionnaire; English and German version]. PsychOpen. https://doi.org/10.23668/psycharchives.3462

References

Åkerblom, S., Perrin, S., Rivano Fischer, M., & McCracken, L. M. (2015). The mediating role of acceptance in multidisciplinary cognitive-behavioral therapy for chronic pain. *The Journal of Pain, 16*, 606-615. https://doi.org/10.1016/j.jpain.2015.03.007

Arch, J. J., & Craske, M. (2008). Acceptance and Commitment Therapy and Cognitive Behavioral Therapy for anxiety disorders: Different treatments, similar mechanisms? *Clinical Psychology: Science and Practice, 15*, 263-279. https://doi.org/10.1111/j.1468-2850.2008.00137.x

Arch, J. J., Eifert, G. H., Davies, C., Plumb Vilardaga, J. C., Rose, R. D., & Craske, M. G. (2012a). Randomized clinical trial of cognitive behavioral therapy (CBT) versus acceptance and commitment therapy (ACT) for mixed anxiety disorders. *Journal of Consulting and Clinical Psychology, 80*, 750-765. https://doi.org/10.1037/a0028310

Arch, J. J., Wolitzky-Taylor, K. B., Eifert, G. H., & Craske, M. G. (2012b). Longitudinal treatment mediation of traditional cognitive behavioral therapy and acceptance and commitment therapy

for anxiety disorders. *Behaviour Research and Therapy, 50*, 469-478. https://doi.org/10.1016/j.brat.2012.04.007

A-Tjak, J. G. L., Davis, M. L., Morina, N., Powers, M. B., Smits, J. A. J., & Emmelkamp, P. M. G. (2015). A meta-analysis of the efficacy of Acceptance and Commitment Therapy for clinically relevant mental and physical health problems. *Psychotherapy and Psychosomatics, 84*, 30-36. https://doi.org/10.1159/000365764

Baranoff, J., Hanrahan, S. J., Kapur, D., & Connor, J. P. (2013). Acceptance as a process variable in relation to catastrophizing in multidisciplinary pain treatment. *European Journal of Pain, 17*, 101-110. https://doi.org/10.1002/j.1532-2149.2012.00165.x

Beck, A. T., & Steer, R. A. (1998). *Beck Depression Inventory II – Manual.* San Antonio, TX, USA: The Psychological Corporation.

Bond, F. W., Hayes, S. C., Baer, R. A., Carpenter, K. M., Guenole, N., Orcutt, H. K., . . . Zettle, R. D. (2011). Preliminary psychometric properties of the Acceptance and Action Questionnaire-II: A revised measure of psychological inflexibility and experiential avoidance. *Behavior Therapy, 42*, 676-688. https://doi.org/10.1016/j.beth.2011.03.007

Bühner, M. (2010). *Einführung in die Test- und Fragebogenkonstruktion* [Introduction to test and questionnaire-construction] (3rd ed.). München, Germany: Pearson Studium.

Derogatis, L. R., & Melisaratos, N. (1983). The Brief Symptom Inventory: An introductory report. *Psychological Medicine, 13*, 595-605. https://doi.org/10.1017/S0033291700048017

Field, A. (2009). *Discovering statistics using SPSS* (3rd ed.). London, United Kingdom: SAGE.

Flückiger, C., Regli, D., Zwahlen, D., Hostettler, S., & Caspar, F. (2010). Der Berner Patienten- und Therapeutenstundenbogen 2000: Ein Instrument zur Erfassung von Therapieprozessen [The Bern Post Session Report for Patients and for Therapists 2000: An instrument to measure therapy processes]. *Zeitschrift für Klinische Psychologie und Psychotherapie, 39*, 71-79. https://doi.org/10.1026/1616-3443/a000015

Forman, E. M., Chapman, J. E., Herbert, J. D., Goetter, E. M., Yuen, E. K., & Moitra, E. (2012). Using session-by-session measurement to compare mechanisms of action for acceptance and commitment therapy and cognitive therapy. *Behavior Therapy, 43*, 341-354. https://doi.org/10.1016/j.beth.2011.07.004

Forman, E. M., Herbert, J. D., Moitra, E., Yeomans, P. D., & Geller, P. A. (2007). A randomized controlled effectiveness trial of acceptance and commitment therapy and cognitive therapy for anxiety and depression. *Behavior Modification, 31*, 772-799. https://doi.org/10.1177/0145445507302202

Francis, A. W., Dawson, D. L., & Golijani-Moghaddam, N. (2016). The development and validation of the Comprehensive assessment of Acceptance and Commitment Therapy processes (CompACT). *Journal of Contextual Behavioral Science, 5*, 134-145. https://doi.org/10.1016/j.jcbs.2016.05.003

Franke, G. H. (2000). *Brief Symptom Inventory von L. R. Derogatis (Kurzform der SCL-90-R) – Deutsche Version.* Göttingen, Germany: Beltz Test.

Gámez, W., Chmielewski, M., Kotov, R., Ruggero, C., Suzuki, N., & Watson, D. (2014). The brief experiential avoidance questionnaire: Development and initial validation. *Psychological Assessment, 26*, 35-45. https://doi.org/10.1037/a0034473

Gillanders, D. T., Bolderston, H., Bond, F. W., Dempster, M., Flaxman, P. E., Campbell, L., . . . Remington, B. (2014). The development and initial validation of the Cognitive Fusion Questionnaire. *Behavior Therapy, 45*, 83-101. https://doi.org/10.1016/j.beth.2013.09.001

Gloster, A. T., Sonntag, R., Hoyer, J., Meyer, A. H., Heinze, S., Ströhle, A., . . . Wittchen, H. U. (2015). Treating treatment-resistant patients with panic disorder and agoraphobia using psychotherapy: A randomized controlled switching trial. *Psychotherapy and Psychosomatics, 84*, 100-109. https://doi.org/10.1159/000370162

Graham, C. D., Gouick, J., Krahé, C., & Gillanders, D. (2016). A systematic review of the use of Acceptance and Commitment Therapy (ACT) in chronic disease and long-term conditions. *Clinical Psychology Review, 46*, 46-58. https://doi.org/10.1016/j.cpr.2016.04.009

Grawe, K. (1997). Research-informed psychotherapy. *Psychotherapy Research, 7*, 1-19. https://doi.org/10.1080/10503309712331334001

Harley, J. (2015). Bridging the gap between Cognitive Therapy and Acceptance and Commitment Therapy (ACT). *Procedia: Social and Behavioral Sciences, 193*, 131-140. https://doi.org/10.1016/j.sbspro.2015.03.252

Hautzinger, M., Keller, F., & Kühner, C. (2009). *BDI-II. Beck Depressions-Inventar Revision* (2. Auflage) [Revised Beck Depression Inventory (BDI-II) (2nd ed.)]. Göttingen, Germany: Hogrefe.

Hayes, S. C. (2004). Acceptance and commitment therapy, relational frame theory, and the third wave of behavioral and cognitive therapies. *Behavior Therapy, 35*, 639-665. https://doi.org/10.1016/S0005-7894(04)80013-3

Hesser, H., Westin, V. Z., & Andersson, G. (2014). Acceptance as a mediator in internet-delivered acceptance and commitment therapy and cognitive behavior therapy for tinnitus. *Journal of Behavioral Medicine, 37*, 756-767. https://doi.org/10.1007/s10865-013-9525-6

Horvath, A. O., & Greenberg, L. S. (1989). Development and validation of the Working Alliance Inventory. *Journal of Counseling Psychology, 36*, 223-233. https://doi.org/10.1037/0022-0167.36.2.223

Horvath, A. O., & Symonds, B. D. (1991). Relation between working alliance and outcome in psychotherapy: A meta-analysis. *Journal of Counseling Psychology, 38*, 139-149. https://doi.org/10.1037/0022-0167.38.2.139

Hutcheson, G., & Sofroniou, N. (1999). *The multivariate social scientist*. London, United Kingdom: SAGE.

Ilardi, S. S., & Craighead, W. E. (1994). The role of nonspecific factors in Cognitive-Behavior Therapy for depression. *Clinical Psychology: Science and Practice, 1*, 138-155. https://doi.org/10.1111/j.1468-2850.1994.tb00016.x

Kühner, C., Bürger, C., Keller, F., & Hautzinger, M. (2007). Reliabilität und Validität des revidierten Beck-Depressionsinventars (BDI-II): Befunde aus deutschsprachigen Stichproben [Reliability

and validity of the Revised Beck Depression Inventory (BDI-II): Results from German samples]. *Der Nervenarzt, 78*, 651-656. https://doi.org/10.1007/s00115-006-2098-7

Lambert, M. J. (2005). Early response in psychotherapy: Further evidence for the importance of common factors rather than "placebo effects". *Journal of Clinical Psychology, 61*, 855-869. https://doi.org/10.1002/jclp.20130

Levin, M. E., Hildebrandt, M. J., Lillis, J., & Hayes, S. C. (2012). The impact of treatment components suggested by the psychological flexibility model: A meta-analysis of laboratory-based component studies. *Behavior Therapy, 43*, 741-756. https://doi.org/10.1016/j.beth.2012.05.003

Levin, M. E., Krafft, J., Pistorello, J., & Seeley, J. R. (2019). Assessing psychological inflexibility in university students: Development and validation of the Acceptance and Action Questionnaire for University Students (AAQ-US). *Journal of Contextual Behavioral Science, 12*, 199-206. https://doi.org/10.1016/j.jcbs.2018.03.004

Mander, J., Schlarb, A., Teufel, M., Keller, F., Hautzinger, M., Zipfel, S., . . . Sammet, I. (2015). The Individual Therapy Process Questionnaire: Development and validation of a revised measure to evaluate general change mechanisms in psychotherapy. *Clinical Psychology & Psychotherapy, 22*, 328-345. https://doi.org/10.1002/cpp.1892

Mander, J. V., Wittorf, A., Schlarb, A., Hautzinger, M., Zipfel, S., & Sammet, I. (2013). Change mechanisms in psychotherapy: Multiperspective assessment and relation to outcome. *Psychotherapy Research, 23*, 105-116. https://doi.org/10.1080/10503307.2012.744111

McCracken, L. M., Vowles, K. E., & Eccleston, C. (2004). Acceptance of chronic pain: Component analysis and a revised assessment method. *Pain, 107*, 159-166. https://doi.org/10.1016/j.pain.2003.10.012

McGrath, K. B. (2012). *Validation of the Drexel University ACT/tCBT Adherence and Competence Rating Scale: Revised for Use in a Clinical Population*. Philadelphia, PA, USA: Drexel University.

Munder, T., Wilmers, F., Leonhart, R., Linster, H. W., & Barth, J. (2010). Working Alliance Inventory-Short Revised (WAI-SR): Psychometric properties in outpatients and inpatients. *Clinical Psychology & Psychotherapy, 17*, 231-239. https://doi.org/10.1002/cpp.658

Niles, A. N., Burklund, L. J., Arch, J. J., Lieberman, M. D., Saxbe, D., & Craske, M. G. (2014). Cognitive mediators of treatment for social anxiety disorder: Comparing acceptance and commitment therapy and cognitive-behavioral therapy. *Behavior Therapy, 45*, 664-677. https://doi.org/10.1016/j.beth.2014.04.006

Ogrodniczuk, J. S., Piper, W. E., Joyce, A. S., & McCallum, M. (2000). Different perspectives of the therapeutic alliance and therapist technique in 2 forms of dynamically oriented psychotherapy. *Canadian Journal of Psychiatry, 45*, 452-458. https://doi.org/10.1177/070674370004500505

Öst, L.-G. (2014). The efficacy of Acceptance and Commitment Therapy: An updated systematic review and meta-analysis. *Behaviour Research and Therapy, 61*, 105-121. https://doi.org/10.1016/j.brat.2014.07.018

Powers, M. B., Zum Vörde Sive Vörding, M. B., & Emmelkamp, P. M. G. (2009). Acceptance and Commitment Therapy: A meta-analytic review. *Psychotherapy and Psychosomatics, 78*, 73-80. https://doi.org/10.1159/000190790

Rubel, J. A., Rosenbaum, D., & Lutz, W. (2017). Patients' in-session experiences and symptom change: Session-to-session effects on a within- and between-patient level. *Behaviour Research and Therapy, 90*, 58-66. https://doi.org/10.1016/j.brat.2016.12.007

Swain, J., Hancock, K., Hainsworth, C., & Bowman, J. (2013). Acceptance and Commitment Therapy in the treatment of anxiety: A systematic review. *Clinical Psychology Review, 33*, 965-978. https://doi.org/10.1016/j.cpr.2013.07.002

Tasca, G. A., Cabrera, C., Kristjansson, E., MacNair-Semands, R., Joyce, A. S., & Ogrodniczuk, J. S. (2016). The therapeutic factor inventory-8: Using item response theory to create a brief scale for continuous process monitoring for group psychotherapy. *Psychotherapy Research, 26*, 131-145. https://doi.org/10.1080/10503307.2014.963729

Taubner, S., Klasen, J., & Munder, T. (2016). Why do psychotherapists participate in psychotherapy research and why not? Results of the Attitudes to Psychotherapy Research Questionnaire with a sample of experienced German psychotherapists. *Psychotherapy Research, 26*, 318-331. https://doi.org/10.1080/10503307.2014.938256

Villatte, J. L., Vilardaga, R., Villatte, M., Plumb Vilardaga, J. C., Atkins, D. C., & Hayes, S. C. (2016). Acceptance and Commitment Therapy modules: Differential impact on treatment processes and outcomes. *Behaviour Research and Therapy, 77*, 52-61. https://doi.org/10.1016/j.brat.2015.12.001

Vogel, E., Blanck, P., Bents, H., & Mander, J. (2016). Wirkfaktoren in der Gruppentherapie: Entwicklung und Validierung eines Fragebogens [Change Factors in Group Therapy: Development and Validation of a Questionnaire]. *Psychotherapie, Psychosomatik, Medizinische Psychologie, 66*, 170-179. https://doi.org/10.1055/s-0042-104495

Vowles, K. E., & McCracken, L. M. (2008). Acceptance and values-based action in chronic pain: A study of treatment effectiveness and process. *Journal of Consulting and Clinical Psychology, 76*, 397-407. https://doi.org/10.1037/0022-006X.76.3.397

Weck, F., Grikscheit, F., Höfling, V., & Stangier, U. (2014). Assessing treatment integrity in cognitive-behavioral therapy: Comparing session segments with entire sessions. *Behavior Therapy, 45*, 541-552. https://doi.org/10.1016/j.beth.2014.03.003

Weise, C., Kleinstäuber, M., Hesser, H., Westin, V. Z., & Andersson, G. (2013). Acceptance of tinnitus: validation of the tinnitus acceptance questionnaire. *Cognitive Behaviour Therapy, 42*, 100-115. https://doi.org/10.1080/16506073.2013.781670

Wilson, K. G., Sandoz, E. K., Kitchens, J., & Roberts, M. (2010). The Valued Living Questionnaire: Defining and measuring valued action within a behavioral framework. *The Psychological Record, 60*, 249-272. https://doi.org/10.1007/BF03395706

Wucherpfennig, F., Rubel, J. A., Hofmann, S. G., & Lutz, W. (2017). Processes of change after a sudden gain and relation to treatment outcome – Evidence for an upward spiral. *Journal of Consulting and Clinical Psychology, 85*, 1199-1210. https://doi.org/10.1037/ccp0000263

Zettle, R. D., Rains, J. C., & Hayes, S. C. (2011). Processes of change in Acceptance and Commitment Therapy and Cognitive Therapy for depression: A mediation reanalysis of Zettle and Rains. *Behavior Modification, 35*, 265-283. https://doi.org/10.1177/0145445511398344

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Systematic Reviews and Meta-analyses

Efficacy of Psychological Treatments for Patients With Schizophrenia and Relevant Negative Symptoms: A Meta-Analysis

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Supplementary Materials: Materials [see Index of Supplementary Materials]

Abstract

Background: Recent meta-analyses on the efficacy of psychological treatments for the negative symptoms of schizophrenia included mostly trials that had not specifically targeted negative symptoms. To gauge the efficacy of such treatments in the target patient population – namely people with schizophrenia who experience negative symptoms – we conducted a meta-analysis of controlled trials that had established an inclusion criterion for relevant negative symptom severity.
Method: We conducted a systematic literature search and calculated random-effects meta-analyses for controlled post-treatment effects and for pre-post changes within treatment arms. Separate analyses were conducted for different therapeutic approaches. Our primary outcome was reduction in negative symptoms; secondary outcomes were amotivation, reduced expression, and functioning.
Results: Twelve studies matched our inclusion criteria, testing Cognitive Behavioral Therapy (CBT) vs. treatment-as-usual (k = 6), Cognitive Remediation (CR) vs. treatment-as-usual (k = 2), CBT vs. CR (k = 2), and Body-oriented Psychotherapy (BPT) vs. supportive group counseling and vs. Pilates (k = 1 each). Accordingly, meta-analyses were performed for CBT vs. treatment-as-usual, CR vs. treatment-as-usual, and CBT vs. CR. CBT and CR both outperformed treatment-as-usual in reducing negative symptoms (CBT: Hedges' g = -0.46; CR: g = -0.59). There was no difference between CBT and CR (g = 0.12). Significant pre-post changes were found for CBT, CR, and to a lesser extent for treatment-as-usual, but not for BPT.
Conclusion: Although effects for some approaches are promising, more high-quality trials testing psychological treatments for negative symptoms in their target population are needed to place treatment recommendations on a sufficiently firm foundation.

Keywords

schizophrenia and psychosis, negative symptoms, psychotherapy, nonpharmacological treatment, meta-analysis

Highlights

- This meta-analysis assesses the efficacy of psychological treatments for relevant negative symptoms.
- Cognitive Behavioral Therapy and Cognitive Remediation show promising effects reducing symptoms.
- Interventions show differential effects for the subcomponents amotivation and reduced expression.
- The evidence-base is not in line with recommendations made in treatment guidelines.

The negative symptoms of schizophrenia, i.e. blunted affect, alogia, anhedonia, asociality, and avolition (Marder & Galderisi, 2017), are among the best predictors of patients' social functioning levels (Fervaha, Foussias, Agid, & Remington, 2014; Galderisi et al., 2014) and accordingly an important treatment target. With respect to psychological treatments, meta-analyses have reported moderate treatment effects for negative symptoms in response to cognitive behavioral therapy for psychosis (CBTp) (Wykes, Steel, Everitt, & Tarrier, 2008), cognitive remediation (CR) (Cella, Preti, Edwards, Dow, & Wykes, 2017; Roder, Mueller, & Schmidt, 2011), social skills training (SST) (Kurtz & Mueser, 2008; Turner et al., 2018), and mindfulness-based interventions (Khoury, Lecomte, Gaudiano, & Paquin, 2013). In the case of CBT, the effect was not significant in a more recent meta-analysis (Velthorst et al., 2015). Among studies comparing different active psychological interventions to one another, SST seems to be superior to other treatments (Turner, van der Gaag, Karyotaki, & Cuijpers, 2014) and is recommended for negative symptoms in two German treatment guidelines (DGPPN e.V., 2019; Lincoln, Pedersen, Hahlweg, Wiedl, & Frantz, 2019). According to the British NICE guidelines (NICE, 2014), offering arts therapy (including music and body-oriented therapy) should be considered both in acute phases and "to assist in promoting recovery, particularly in people with negative symptoms" (p. 220). NICE does not recommend any other approach for negative symptoms.

Why yet Another Meta-Analysis?

Besides the mixed conclusions from previous meta-analyses, all of the meta-analyses mentioned share the limitation that almost all included original trials reported on negative symptoms as a secondary, not a primary outcome. For example for CBTp, only 3 out of 30 studies (Velthorst et al., 2015; Wykes et al., 2008) specifically targeted negative symptoms. In the case of CR, Cella et al. (2017), p. 43, noted that "negative symptoms have not been considered a primary target for CR". Instead, due to the focus on positive

symptoms in most included trials, participants in the trials often had passed some minimum criterion for the presence of positive symptoms. Therefore, we cannot rule out that the moderate meta-analytic effects for negative symptoms mentioned above result from primary studies that did not include any patients with relevant[1] negative symptoms. This makes it extremely difficult to select appropriate treatments for the patients with schizophrenia, who present with relative negative symptoms, which have been estimated to constitute one (Buchanan, 2007) or even two (Bobes, Arango, Garcia-Garcia, & Rejas, 2010) thirds of the total patient population. To emphasize this point; this is as if we wanted to judge the efficacy of an intervention for auditory hallucinations on the basis of studies that did not make sure that their participants actually had auditory hallucinations before the intervention.

More specifically, because previous meta-analyses did not limit their eligibility criteria to studies that required that their patients present with at least some relevant level of negative symptoms, there are several possible ways by which these meta-analyses may have either over- or underestimated the effect size of psychological negative symptom treatments. For instance, floor effects need to be expected if patients without relevant negative symptoms and thus little room for improvement in this domain are included in the studies. This would lead to an underestimation of the effect size. On the other hand, we need to consider the possibility that patients with more severe negative symptoms benefit less from therapy or that the interventions' effects primarily reflect changes in the so-called "secondary" (Carpenter, Heinrichs, & Wagman, 1988) negative symptoms (e.g., social withdrawal due to paranoia). Each of these would lead to an overestimation of the effect size. In fact, at least the latter possibility is likely, given that–much more often than not–positive symptoms were the focus of the primary research that fed into the meta-analyses mentioned above. Another problem with this focus of most considered trials is that the interventions analyzed usually targeted positive psychotic symptoms and for this reason were derived from psychological models of those symptoms. Given that positive and negative symptoms are usually uncorrelated (e.g., Engel, Fritzsche, & Lincoln, 2014; Strauss et al., 2012), it is not scientifically plausible that these interventions should work well for negative symptoms.

To overcome these uncertainties, we conducted a meta-analysis of only those controlled treatment studies that focused specifically on psychological interventions for negative symptoms *and* that made sure that enrolled patients presented with relevant negative symptoms. As the primary outcome, we estimated the controlled meta-analytic effect size for negative symptoms post treatment. As secondary outcomes, we estimated the controlled meta-analytic effect size for each of the two negative symptom dimen-

1) Because there are no unified criteria to demarcate the presence from the absence of negative symptoms, we use the concept of „relevant negative symptoms" throughout this paper as an umbrella term for the different ways that have been put forward to describe negative symptoms that can be considered in need of treatment (see for instance Table 1 in this paper or the differing criteria used in Buchanan, 2007 and Bobes et al., 2010).

sions, motivational and expressive negative symptoms (Blanchard & Cohen, 2006), as well as for level of functioning. As a secondary analysis, we estimated the meta-analytic pre-post changes within treatment arms for each outcome.

Method

Eligibility Criteria

We defined six eligibility criteria in accordance with the PICOS criteria. First, we included only studies that exclusively enrolled adult *patients* with a diagnosis of schizophrenia spectrum disorder according to DSM or equivalent ICD diagnoses. Second, studies were eligible only when they had established any minimum inclusion criterion of negative symptom severity (i.e. relevant negative symptoms). Third, studies were eligible when they tested a psychological *intervention*, defined as manual-based non-invasive non-pharmacological talk- or exercise-based intervention and when this intervention specifically targeted negative symptoms. Fourth, all eligible studies had to include either a wait-list condition (e.g., treatment-as-usual, TAU) or an alternative active intervention as a *comparator*. Fifth, eligible studies needed to report *outcomes* on at least one of the following validated negative symptom assessments: Brief Negative Symptom Scale (BNSS; Kirkpatrick et al., 2011), Clinical Assessment Interview for Negative Symptoms (CAINS; Horan, Kring, Gur, Reise, & Blanchard, 2011), Negative Symptom Assessment (NSA; Alphs, Summerfelt, Lann, & Muller, 1989), Positive and Negative Syndrome Scale (PANSS; Kay, Fiszbein, & Opler, 1987), Scale for the Assessment of Negative Symptoms (SANS; Andreasen, 1989). Sixth, eligible studies had to be designed as controlled trials (CT) or randomized controlled trials (RCT). Finally, studies were only eligible if they reported on original data (i.e. no secondary analyses) and were published in a peer-reviewed journal in English or German language.

Literature Search

We searched the databases of MEDLINE(R) and PsycINFO on August 24, 2020, using the following search term: (negative symptoms) AND (schizophrenia OR psychosis) AND (treatment OR intervention OR therapy OR psychotherapy OR training OR remediation). We also consulted reference lists of several systematic reviews and meta-analyses (Cella et al., 2017; Devoe, Peterson, & Addington, 2018; Khoury et al., 2013; Kurtz & Mueser, 2008; Lutgens, Gariepy, & Malla, 2017; Roder et al., 2011; Turner et al., 2014; Velthorst et al., 2015; Wykes et al., 2008). M.C.B. screened titles and abstracts of all studies in the search pool for non-eligibility and read full texts of all potentially eligible studies. M.C.B. made final decisions on eligible studies and resolved any uncertainties with M.R. A hierarchical decision structure was used to code the reason for exclusion of a study after reading the full-text: a) not retrievable, b) not a treatment study, c) secondary analysis, d)

no CT or RCT, e) included patients outside the diagnostic spectrum, f) did not report on a validated negative symptom assessment, g) no inclusion criterion for relevant negative symptoms, h) data reported insufficiently for meta-analysis. In the case of insufficient data, we contacted the study's corresponding author up to four times to request data.

Data Extraction

We developed a coding protocol based on the *Cochrane Handbook* (Higgins & Deeks, 2008). The full item list can be requested from the first author.

For our primary outcome, negative symptoms, we extracted per availability the post treatment negative symptom scores (*M* and *SD*) for the experimental and control group, respectively, or the between-group effect size estimate reported post treatment. Post-treatment scores were defined as the first assessment after the termination of the intervention. If studies reported on more than one validated negative symptom assessment, we used the data from the one assessment labelled as primary outcome in the study. For all outcomes post treatment, results from intent-to-treat analyses (e.g., last observation carried forward) were prioritized over completer analyses.

For the secondary outcomes, motivational negative symptoms, expressive negative symptoms, and level of functioning, we extracted per availability post treatment scores (*M* and *SD*) or the between-group effect size estimate reported post treatment. We defined the following as potential measures of motivational negative symptoms: BNSS scales anhedonia, asociality, and avolition, CAINS scale motivation and anticipation of pleasure, SANS scales avolition-apathy and anhedonia-asociality, and PANSS items N2 and N4 (Fervaha et al., 2014; Jang et al., 2016). We defined the following as potential measures of expressive negative symptoms: BNSS scales blunted affect and alogia, CAINS scale expressive reduction, SANS scales affective flattening and alogia, and PANSS items N1, N3, N6, and G7 (Fervaha et al., 2014; Jang et al., 2016). We defined measures of level of functioning as assessments of patients' functionality in one or more of the following areas: family, friendship and partnership, vocation, or recreation.

For our secondary analysis on pre-post changes, we also extracted pre-treatment scores (*M* and *SD*) on negative symptoms, motivational negative symptoms, expressive negative symptoms, and level of functioning or pre-post within-group effect size estimates. Pre-treatment scores were defined as the last assessment before the start of the intervention.

Effect Size Computation at the Levels of the Individual Studies

We computed Hedges' *g* as the mean difference between groups (experimental minus control group) divided by the pooled standard deviation (Cohen's *d*) multiplied with a correction term (Borenstein, 2009; Hedges & Olkin, 1985). The variance of *g* was calcu-

lated according to Borenstein, Hedges, Higgins, and Rothstein (2009) (for the complete formulae see the Supplementary Materials).

For pre-post within group comparisons we calculated *g* and its variance using the formulae for pre-post changes provided in Borenstein et al. (2009) (see Supplementary Materials for complete formulae). These formulae account for the pre-post correlation of the repeated measure (cf. McGaw & Glass, 1980) that we estimated at $r = .50$ based on the pre-post correlations of studies included in this meta-analysis (see Supplementary Materials) and in line with recommendations in the literature (Lincoln, Suttner, & Nestoriuc, 2008; Smith, Glass, & Miller, 1980).

In cases in which several subscales needed to be integrated into one measure, we estimated *d* for each subscale, and computed a study-wise mean *d*, and subsequently *g*, and estimated its variance based on an integration of the variances of the subscales and their inter-correlations (Borenstein et al., 2009). If such correlations could not be obtained from the studies themselves, they were estimated from relevant literature (for details see Supplementary Materials).

We interpreted $g \geq 0.2$ as a small effect, $g \geq 0.5$ as a moderate effect, and $g \geq 0.8$ as a large effect (Cohen, 1992).

Effect Size Integration

We integrated the effect sizes using random-effects models accounting for potential heterogeneity between studies. The effect sizes of single studies were weighted by their inverse variance (Shadish & Haddock, 2009). Variance among studies was estimated according to DerSimonian and Laird (1986). We assessed heterogeneity between studies with the *Q*- and I^2-statistics (Higgins, Thompson, Deeks, & Altman, 2003; Shadish & Haddock, 2009). In accordance with Higgins et al. (2003), we defined heterogeneity assessed with I^2 as low (25%), moderate (50%), and high (75%). All analyses were conducted with the package *metafor* (Viechtbauer, 2010) in RStudio version 1.1.453. All significance tests were performed on an α-level of .05.

Because we were interested in comparing the efficacy of different psychological treatments for negative symptoms, we calculated separate meta-analyses for each psychological treatment approach identified in our search. Based on a recent literature review (Riehle, Pillny, & Lincoln, 2017), we expected to find studies for the following approaches: CBT, SST, CR, and body-oriented psychotherapy (BPT). We also planned to analyze studies comparing an intervention to TAU separately from studies comparing an intervention to an active control condition or an alternative treatment. We integrated effect sizes, when two or more studies were found that could be integrated.

Risk of Bias Analyses

Risk of bias for individual studies was assessed with seven criteria that were based on the *Cochrane Risk of Bias Tool* (Higgins, Altman, & Sterne, 2008). The seven criteria were evaluated on a dichotomous true (high quality)/false (low quality) scale and were: a) use of randomization for group allocation, b) use of an intent-to-treat analysis to account for dropouts, c) assessment of treatment fidelity, d) assessors blinded to group allocation, e) non-selective reporting of outcomes, f) matching of experimental and control group, g) exclusion of patients with high levels of positive psychotic symptoms (cf. Savill, Banks, Khanom, & Priebe, 2015).

To account for potential publication bias influencing the meta-analysis, we inspected funnel plots (effect sizes plotted against their standard errors) for asymmetry (Borenstein et al., 2009; Sterne, Egger, & Moher, 2008) and conducted trim-and-fill analyses (Duval & Tweedie, 2000).

Results

Study Selection

The flow-chart in Figure 1 illustrates the study selection process. We identified k = 12 studies fulfilling our inclusion criteria. Of the twelve studies, k = 6 tested CBT vs. TAU (Bailer, Takats, & Westermeier, 2001; Choi, Jaekal, & Lee, 2016; Favrod et al., 2019; Grant, 2012; Pos et al., 2019; Velligan et al., 2015), k = 2 tested CBT vs. CR (Klingberg et al., 2011; Penadés et al., 2006), k = 2 tested CR vs. TAU (Li et al., 2019; Mueller, Khalesi, Benzing, Castiglione, & Roder, 2017), k = 1 tested BPT vs. group supportive counselling (Röhricht & Priebe, 2006), k = 1 tested BPT vs. Pilates (Priebe, Savill, Wykes, Bentall, Lauber, et al., 2016a; Priebe, Savill, Wykes, Bentall, Reininghaus, et al., 2016b).
Accordingly, we calculated meta-analyses for the comparisons of CBT vs. TAU, CR vs. TAU, and CBT vs. CR. For the meta-analysis of pre-post changes in negative symptoms within the study groups, we integrated data from all samples included in the twelve studies that received comparable forms of treatment: CBT (k = 8), CR (k = 4), BPT (k = 2), TAU (k = 8). Data was not available for all outcomes in all studies and Tables S3 and S4 in the Supplementary Materials show in detail which studies were included in which analyses.

The study characteristics are shown in Table 1. As can be seen, every study used a unique criterion to establish a minimum level of negative symptom severity.

Figure 1

Flow Chart of the Literature Selection Process

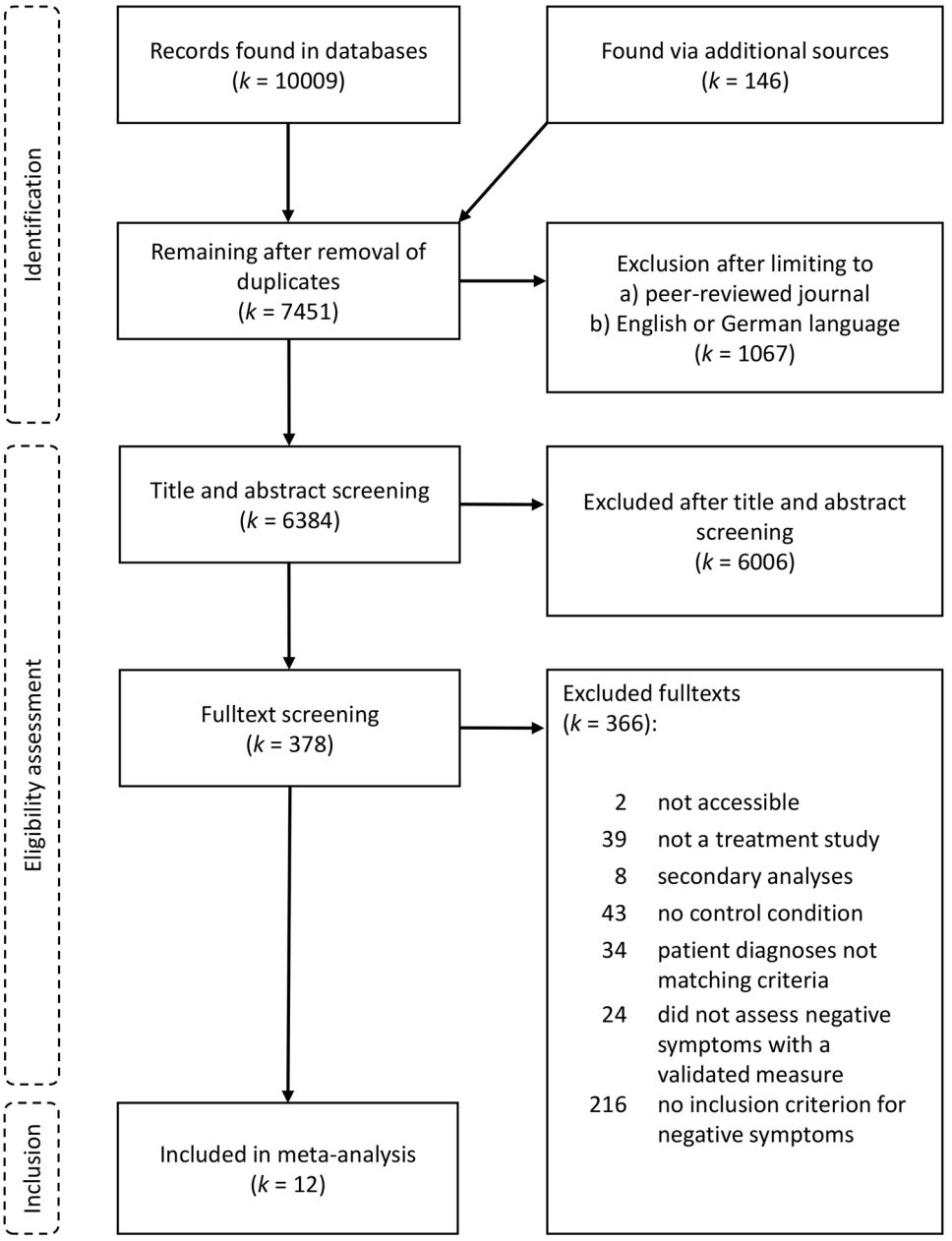

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Table 1

Characteristics of Studies Included in the Meta-Analysis, Sorted by Comparison

Comparison/ Reference	Country of origin	*N*[a] EG[b] / CG[c]	Drop-outs EG[b]/CG[c]	Male sex EG[b]/CG[c]	Treatment duration in weeks	Primary outcome measure	Mot./Exp. NES measure	Level of functioning	NES inclusion criterion
CBT vs. TAU									
Bailer et al., 2001	GER	20 / 19	13% / 21%	54% / 58%	12	SANS	SANS	DAS-M	≥ 2 on any SANS scale or DAS-M global
Choi et al., 2016	KOR	22 / 19	4% / 21%	52% / 50%	10	PANSS-N	BNSS	-	> 3 on at least 2 PANSS-N items
Favrod et al., 2019	CHE	40 / 40	8% / 0%	53% / 70%	8	SANS	SANS	-	≥ 2 on SANS apathy/ anhedonia
Grant et al., 2012	USA	31 / 29	10% / 10%	68% / 66%	72	SANS	SANS	GAF	≥ 4 on at least 1 or ≥ 3 on 2 SANS scales
Pos et al., 2019	NED	49 / 50	18% / 20%	76% / 86%	10	BNSS	BNSS	GAF	PANSS N2 or N4 ≥ 3 or BNSS asociality items ≥ 2
Velligan et al., 2015	USA	17 / 22	35% / 12%	65% / 68%	36	NSA	CAINS	-	> 3 on at least 2 NSA symptom domains
CR vs. TAU									
Li et al., 2019	CHI	16 / 15	6% / 27%	53% / 72%	4	PANSS-N	SANS	-	PANSS-N at least 6 points > PANSS-P
Mueller et al., 2017	CHE	28 / 33	14% / 6%	76% / 79%	15	PANSS-N	PANSS items N1, N4, N6	GAF	> 3 on PANSS N1, N4, and/or N6

Comparison/ Reference	Country of origin	N^a EG[b] / CG[c]	Drop-outs EG[b]/CG[c]	Male sex EG[b]/CG[c]	Treatment duration in weeks	Primary outcome measure	Mot./Exp. NES measure	Level of functioning	NES inclusion criterion
CBT vs. CR									
Klingberg et al., 2011	GER	99 / 99	9% / 20%	59% / 53%	36	PANSS-MNS	SANS	GAF	> 10 on PANSS-MNS sum score
Penadés et al., 2006	ESP	20 / 20	15% / 20%	55% / 60%	16	PANSS-N	-	LSP	PANSS-N > PANSS positive scale
BPT vs. Pilates									
Priebe et al., 2016b	GBR	131 / 123	2% / 4%	50% / 48%	10	PANSS-N	CAINS	MANSA	≥ 18 on PANSS-N
BPT vs. GSC									
Röhricht & Priebe, 2006	GBR	24 / 19	4% / 9%	74% / 74%	10	PANSS-N	PANSS items N1, N6	MANSA	≥ 20 on PANSS-N and/or ≥ 6 on PANSS N1, N2, or N6

Note. EG = experimental group; CG = control group; NES = negative symptoms; CBT = Cognitive Behavioral Therapy; TAU = Treatment-as-Usual; CR = Cognitive Remediation; BPT = Body-oriented Psychotherapy; GSC = Group Supportive Counselling; SANS = Scale for the Assessment of Negative Symptoms; DAS-M = Disability Assessment Schedule; PANSS-N/MNS = Positive and Negative Syndrome Scale Negative Scale/Modified Negative Factor (N1, N2, N3, N4, N6, G7, G16); BNSS = Brief Negative Symptom Scale; NSA = Negative Symptom Assessment; CAINS = Clinical Assessment Interview for Negative Symptoms; GAF = Global Assessment of Functioning; LSP = Life Skills Profile; MANSA = Manchester Short Assessment of Quality of Life.

[a]*N* corresponds to number of participants available for a meta-analysis on the primary outcome measure. [b]CBT for CBT vs. CR. [c]CR for CBT vs. CR.

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Controlled Post-Treatment Effects

Figure 2 contains the forest plots for the comparisons of CBT vs. TAU, CR vs. TAU and CBT vs. CR on controlled effect sizes for a global measure of negative symptoms.

CBT vs. TAU

As can be seen in Figure 2, there was a moderate and significant treatment effect favoring CBT over TAU for our primary outcome, negative symptoms post treatment. Heterogeneity across the four studies was moderate.

Regarding secondary outcomes, for motivational negative symptoms, there was a moderate significant post treatment effect favoring CBT over TAU k = 6, N = 347, g = -0.50, 95% CI [-0.77, -0.22] (heterogeneity: Q = 8.04, p = .154, I^2 = 37.8%). For expressive negative symptoms, there was no difference between CBT and TAU, k = 5, N = 248, g = -0.05, 95% CI [-0.30, 0.20] (heterogeneity: Q = 4.29, p = .369, I^2 = 6.70%). For level of functioning, there was a moderate but non-significant and highly heterogeneous effect favoring CBT over TAU, k = 3, N = 198, g = 0.56, 95% CI [-0.11, 1.23] (heterogeneity: Q = 9.95, p = .007, I^2 = 79.9%).

CR vs. TAU

As also can be seen in Figure 2, there was a moderate and significant treatment effect favoring CR over TAU for our primary outcome, negative symptoms post treatment. No heterogeneity was noted across the two studies.

Regarding secondary outcomes, for motivational negative symptoms, there was a small but non-significant post treatment effect favoring CR over TAU k = 2, N = 87, g = -0.23, 95% CI [-0.64, 0.19] (heterogeneity: Q = 0.80, p = .371, I^2 = 0.0%). For expressive negative symptoms, there was a moderate and significant effect favoring CR over TAU, k = 2, N = 87, g = -0.53, 95% CI [-0.93, -0.12] (heterogeneity: Q = 0.30, p = .584, I^2 = 0.0%). For level of functioning, only one study reported sufficient data (Mueller et al., 2017), so that no effect size integration was performed.

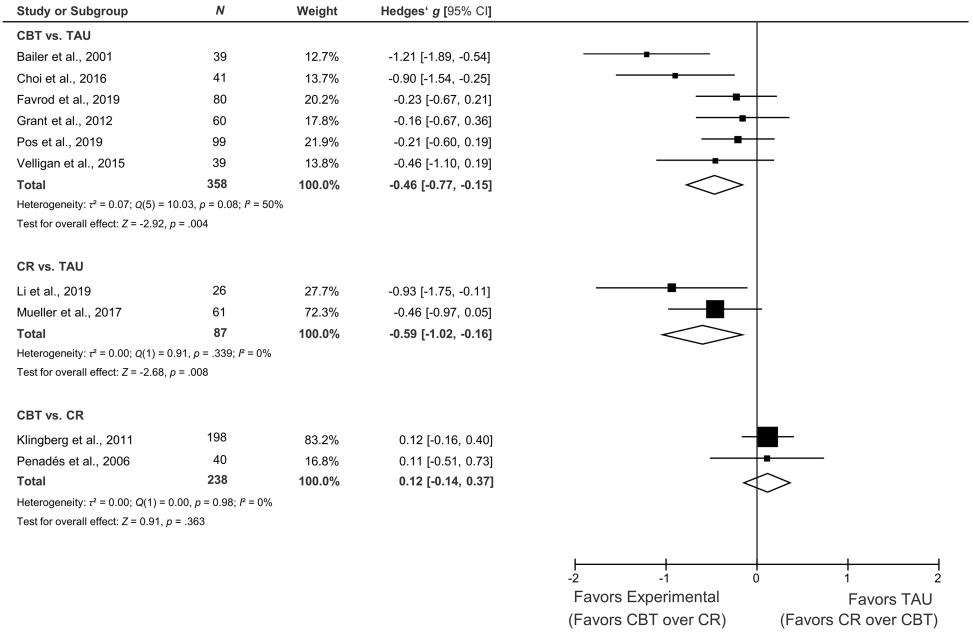
CBT vs. CR

As shown in Figure 2, there was no significant difference between CBT and CR for negative symptoms post treatment and the heterogeneity measure indicated uniformity of the two studies' effects.

Regarding the secondary outcomes, for level of functioning, there was a small but non-significant post treatment effect favoring CR over CBT, k = 2, N = 238, g = 0.31, 95% CI [-0.71, 1.34] with high heterogeneity, Q = 8.47, p = .004, I^2 = 88.2%. For motivational and expressive negative symptoms, only one of the two studies reported sufficient data (Klingberg et al., 2011), so that no effect size integration was performed.

Figure 2

Forest Plot of the Random Effects Meta-Analyses for the Controlled Treatment Effects of CBT vs. TAU, CR vs. TAU, and CBT vs. CR in Reducing Relevant Negative Symptoms



Pre-Post Within Group Changes

The meta-analytic results for the pre-post within group changes are detailed in Table 2. For our primary outcome, global negative symptoms, significant moderate effects were noted for CBT and CR. The moderate effect of BPT was non-significant and highly heterogeneous. A small significant effect emerged for TAU.

For our secondary outcome motivational negative symptoms, CBT and CR showed moderate significant effects accompanied by high heterogeneity. TAU showed a small significant effect. For BPT there was insufficient data.

For expressive negative symptoms, CR showed a significant moderate effect. A small significant effect emerged for CBT. There was also a moderate effect of BPT on expressive negative symptoms, which was, however, non-significant due to high heterogeneity. We did not find an effect of TAU.

For level of functioning, small to moderate significant effects emerged for CBT, CR, and TAU, all with moderate heterogeneity, whereas there was no effect of BPT.

Table 2

Results of the Random-Effects Meta-Analyses on Pre-Post Changes Within Treatment Arms for Primary and Secondary Outcomes, Sorted by Type of Intervention

Intervention	*k*	*N*	*g*	95% CI	*Q*	I^2
Global negative symptoms						
CBT	7	286	-0.50***	-0.66, -0.35	8.54	29.7%
CR	4	162	-0.60***	-0.86, -0.35	5.33	43.7%
BPT	2	154	-0.62†	-1.36, 0.11	7.93**	87.4%
TAU	7	194	-0.20*	-0.38, -0.03	8.74	31.3%
Motivational negative symptoms						
CBT	7	289	-0.58***	-0.90, -0.26	36.92***	83.8%
CR	3	142	-0.59*	-1.11, -0.07	11.69**	82.9%
BPT	-	-	-	-	-	-
TAU	8	220	-0.26**	-0.45, -0.06	14.09*	50.3%
Expressive negative symptoms						
CBT	5	209	-0.24**	-0.41, -0.08	5.43	26.4%
CR	3	142	-0.48***	-0.64, -0.32	0.86	0.0%
BPT	2	154	-0.57	-1.41, 0.23	10.38**	90.4%
TAU	6	144	-0.10	-0.26, 0.06	4.59	0.0%
Level of functioning						
CBT	5	238	0.61***	0.30, 0.92	17.37**	77.0%
CR	3	147	0.40***	0.10, 0.70	4.63†	56.8%
BPT	2	152	0.10	-0.07, 0.25	0.23	0.0%
TAU	3	112	0.41*	0.08, 0.74	5.61†	64.3%

Note. CBT = Cognitive Behavioral Therapy; CR = Cognitive Remediation; BPT = Body-Oriented Psychotherapy; TAU = Treatment-as-Usual.
†$p < .10$. *$p < .05$. **$p < .01$. ***$p < .001$.

Risk of Bias Analyses

Publication Bias

Inspection of the funnel plots (cf. Supplementary Materials) for the three comparisons of CBT vs. TAU, CR vs. TAU, and CBT vs. CR and trim-and-fill analyses suggested the following: No studies were estimated to be missing for CBT vs. TAU and CR vs. TAU. For CBT vs. CR, one study was estimated to be missing; the corrected effect, $k = 3$, $g = 0.12$, 95% CI [-0.12, 0.36], did not change the interpretation that there was no difference between the two interventions.

Risk of Bias in Individual Studies and Sensitivity Analyses

The results of the quality assessment of individual studies are shown in Table 3.

Table 3

Results of the Quality Assessment of Included Studies, Sorted by Comparison

Comparison/ Reference	Random-ization	Intent-to-treat analysis	Assessment of treatment fidelity	Blinded assessors	Non-selective outcome report	Matching groups	High levels of positive symptoms excluded
CBT vs. TAU							
Bailer et al., 2001	-	-	-	-	+	+	-/+
Choi et al., 2016	-	-	+	-	+	+	+
Favrod et al., 2019	+	+	-/+	+	+	+	-
Grant et al., 2012	+	+	-	+	+	+	+
Pos et al., 2019	+	+	+	+	+	+	-/+
Velligan et al., 2015	+	-	+	+	+	+	+
CR vs. TAU							
Li et al., 2019	-	-	-	+	+	+/-	+
Mueller et al., 2017	+	+	-	+	+	+	-
CBT vs. CR							
Klingberg et al., 2011	+	+	+	+	+	+	+
Penadés et al., 2006	+	+	-	+	+	+	-/+
BPT vs. Pilates							
Priebe et al., 2016b	+	+	+	+	+	+	-
BPT vs. GSC							
Röhricht & Priebe, 2006	+	+	+	+	+	+	-

Note. CBT = Cognitive Behavioral Therapy; TAU = Treatment-as-Usual; CR = Cognitive Remediation; BPT = Body-oriented Psychotherapy; GSC = Group supportive counselling; + = criterion fulfilled; - = criterion not fulfilled; -/+ = unclear; criterion probably fulfilled.

As can be seen there, the overall study quality was high. Non-selective reporting of results was implemented in all studies included in the meta-analysis and all investigated at least largely matching experimental and control groups. About half of the studies included a criterion to confine positive symptom severity in addition to their negative symptom inclusion criterion.

Three studies did not randomize their participants to the treatment arms (i.e., Bailer et al., 2001; Choi et al., 2016; Li et al., 2019). As can be seen in Figure 2, these three studies contributed the three largest controlled effect sizes. This could be due to patient preferences playing a role in group allocation (e.g., in Li et al., 2019). Also, these three studies on average fulfilled two quality criteria less than the RCTs. For this reason, we performed sensitivity analyses for all effects including only RCTs. Because for CR vs. TAU there was only a single RCT and because both CBT vs. CR and both BPT studies were RCTs, sensitivity analyses of controlled post treatment effects were performed exclusively for CBT vs. TAU. For the primary outcome, global negative symptoms, there remained a small marginally significant effect favoring CBT over TAU $k = 4$, $N = 278$, $g = -0.24$,

95% CI [-0.47, 0.004] (heterogeneity: Q = 0.56, p = .905, I^2 = 0.0%). Regarding secondary outcomes, for motivational negative symptoms, there remained a small significant effect favoring CBT over TAU k = 4, N = 278, g = -0.35, 95% CI [-0.58, -0.11] (heterogeneity: Q = 1.93, p = .586, I^2 = 0.0%). For expressive negative symptoms, there was no difference between CBT and TAU, k = 3, N = 179, g = 0.10, 95% CI [-0.18, 0.38] (heterogeneity: Q = 0.65, p = .723, I^2 = 0.00%). Finally, for level of functioning, there remained a small but non-significant effect favoring CBT over TAU, k = 2, N = 159, g = 0.26, 95% CI [-0.27, 0.78] (heterogeneity: Q = 2.61, p = .106, I^2 = 61.7%). Results of the sensitivity analyses for the pre-post effects for CBT, CR, and TAU can be found in Table S5 in the Supplementary Materials.

Discussion

Different national treatment guidelines have recommended different psychological therapies to treat the negative symptoms of schizophrenia (e.g., DGPPN e.V., 2019; Lincoln et al., 2019; NICE, 2014). The purpose of such recommendations is to inform clinicians about which treatments to offer to their patients who experience these symptoms (i.e. the target population of the treatment). For this reason, it is important to base the recommendations on research that can answer the question whether a given treatment reduces negative symptoms in the target patient population. Here, we conducted the first systematic literature search and meta-analysis of controlled trials of psychological treatments that had employed an inclusion criterion for negative symptom severity.

Our search identified twelve controlled studies matching our inclusion criteria. These twelve studies targeted cognitive behavioral therapy (CBT), cognitive remediation (CR), and body-oriented psychotherapy (BPT). By integrating findings of studies that investigated comparable forms of treatments (e.g., all trials testing CBT vs. treatment-as-usual, TAU), we were able to calculate meta-analyses on the controlled treatment effects for the comparisons of CBT vs. TAU, CR vs. TAU, and CBT vs. CR, respectively.

We found that CBT reduced negative symptoms more than TAU with a small to moderate effect size (g = -0.46). This effect was larger than in other recent meta-analyses on the efficacy of CBT on negative symptoms (i.e. -0.09 to -0.16, Velthorst et al., 2015; -0.34, Lutgens et al., 2017). However, our sensitivity analysis including only RCTs suggested that the effect size could be only half as big (g = -0.24) in more rigorous trials. This confirms what has already been observed for CBT in psychosis more generally, namely that effect sizes tend to be smaller in more rigorous trials (Jauhar et al., 2014; Wykes et al., 2008). Having this caveat in mind, further high-quality RCTs on the efficacy of CBT for negative symptoms in the target patient population are needed to confirm (or disconfirm) the effect found in this meta-analysis.

We also found CR to reduce negative symptoms more than TAU with a moderate effect size (g = -0.59). Again, this effect size is considerably larger than the ones found in

previous meta-analyses (i.e., Cella et al., 2017; ES = -0.30 to -0.40). However, this effect is based on only two studies, of which one (Li et al., 2019) did not randomize patients to the treatment arms and even based their treatment allocation on patients' preferences. The only RCT that compared CR to TAU in patients with relevant negative symptoms found a moderate effect favoring CR (Mueller et al., 2017).

The similar effect sizes for CBT vs. TAU (-0.46) and CR vs. TAU (-0.59) along with the finding of no significant difference between CBT and CR suggest that CBT and CR may be similarly efficacious. As no alternative psychological treatments have been investigated for this target population compared to CBT and CR, at present we can only conclude that adding a specific psychological treatment for negative symptoms (in this case CBT or CR) to standard care reduces relevant negative symptoms more than standard care alone.

Nevertheless, the findings from our secondary outcome analyses suggest at least some degree of specificity of treatment effects for CBT and CR. For example, CBT but not CR was efficacious in reducing amotivation. In contrast, CR but not CBT had an effect on reduced expression. Moreover, as will be discussed below, BPT could be specifically efficacious to improve reduced expression but might not have an effect on amotivation. Even though these findings are certainly tentative, they highlight that there may be treatments that are specifically efficacious for the different subcomponents of negative symptoms. Therefore, future research should account for the distinction of the negative symptom subcomponents more explicitly and make these subcomponents the primary outcomes. Two of the more recent studies in our meta-analysis already adopted this approach (Favrod et al., 2019; Pos et al., 2019).

An important question then is, whether our findings accord with published treatment guidelines. For example, based on previous RCTs and meta-analyses in schizophrenia samples (e.g., Granholm, Holden, Link, & McQuaid, 2014; Kurtz & Mueser, 2008; Turner et al., 2018, 2014), the German treatment guidelines (DGPPN e.V., 2019; Lincoln et al., 2019) recommend Social Skills Training (SST) for negative symptoms. As we did not identify any study that tested SST in the target group, we argue that there is little evidence to support this recommendation. Therefore, methodologically rigorous tests of SST in patients with relevant negative symptoms are needed. In this regard, it is promising that we found one registered RCT testing Cognitive Behavioral Social Skills Training in people with relevant negative symptoms (Twamley, Granholm, & ClinicalTrials.gov, 2014).

The case of BPT, as for example recommended in the British NICE guidelines (NICE, 2014) is more complex. In our synthesis, we did not find clear evidence that BPT reduces negative symptoms. One important reason is that the large and methodologically rigorous BPT trial that we included and which was published after the last update of the NICE guidelines (Priebe et al., 2016b) mostly did not show significant results. Nevertheless, in line with other trials on BPT (Martin, Koch, Hirjak, & Fuchs, 2016;

Röhricht & Priebe, 2006), the Priebe et al. (2016b) study found a significant effect for the reduction of expressive negative symptoms that did not show up in our meta-analysis for methodological reasons (i.e. the effect in Priebe et al. (2016b) only showed up as a time by group interaction). In the light of very limited treatment options for the expressive subcomponents of negative symptoms, BPT should be further explored as one potentially specific approach for this aspect of negative symptoms.

Another result of our meta-analysis is that we found a small albeit significant effect for TAU on global negative symptoms from pre to post treatment (k = 7, g = -0.20). This somewhat confirms a recent meta-analysis by Savill et al. (2015), who showed that negative symptoms decline over time in TAU conditions with a less than small, yet significant, effect (k = 15, ES = -0.15). Together, these findings suggest that current routine care has a negligible impact on relevant negative symptoms.

Several strengths and limitations need mentioning. Due to space restrictions, we have provided a detailed discussion of these issues in the Supplementary Materials. The limitations discussed include the heterogeneity across primary studies regarding negative symptom assessments and the negative symptom inclusion criteria. We also address the potential lack of fit between interventions and current etiological models of negative symptoms. Finally, we address strengths and limitations that arise from our strict inclusion criterion that primary studies needed to have employed an entry criterion for negative symptom severity. This includes a discussion of power issues due to the small number of primary studies. We also address how our study relates to the issue of "pseudo-specificity" in research on negative symptom treatments (cf., Fusar-Poli et al., 2015).

Having these caveats in mind, this meta-analysis indicates that routine care has a negligible effect on negative symptoms, whereas there is some evidence for the efficacy of CBT and CR. However, the effects were instable (especially for CBT) and the effect sizes leave room for improvement. Additionally, some approaches may be more promising to reduce motivational negative symptoms (CBT) and some more promising to reduce expressive negative symptoms (CR, BPT). Therefore, research efforts should be held up for the targeted and symptom-specific psychological approaches to reduce negative symptoms in order to place treatment recommendations on a firmer foundation.

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Competing Interests: TML is first author of German treatment manuals for CBTp. All other authors declare that they have no conflict of interest.

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Supplementary Materials

The supplementary material contains formulae used for the calculation of effect sizes, additional results, and an in-depth discussion of strengths and limitations (for access see Index of Supplementary Materials below).

Index of Supplementary Materials

Riehle, M., Böhl, M. C., Pillny, M., & Lincoln, T. M. (2020). *Supplementary materials to "Efficacy of psychological treatments for patients with schizophrenia and relevant negative symptoms: A meta-analysis"* [Formulae, additional results, and discussion]. PsychOpen. https://doi.org/10.23668/psycharchives.3482

References

Alphs, L. D., Summerfelt, A., Lann, H., & Muller, R. J. (1989). The negative symptom assessment: A new instrument to assess negative symptoms of schizophrenia. *Psychopharmacology Bulletin, 25*(2), 159-163.

Andreasen, N. C. (1989). The Scale for the Assessment of Negative Symptoms (SANS): Conceptual and theoretical foundations. *The British Journal of Psychiatry, 155*(S7), 49-52. https://doi.org/10.1192/S0007125000291496

Bailer, J., Takats, I., & Westermeier, C. (2001). Die Wirksamkeit individualisierter Kognitiver Verhaltenstherapie bei schizophrener Negativsymptomatik und sozialer Behinderung. *Zeitschrift für Klinische Psychologie und Psychotherapie, 30*(4), 268-278. https://doi.org/10.1026/0084-5345.30.4.268

Blanchard, J. J., & Cohen, A. S. (2006). The structure of negative symptoms within schizophrenia: Implications for assessment. *Schizophrenia Bulletin, 32*(2), 238-245. https://doi.org/10.1093/schbul/sbj013

Bobes, J., Arango, C., Garcia-Garcia, M., & Rejas, J. (2010). Prevalence of negative symptoms in outpatients with schizophrenia spectrum disorders treated with antipsychotics in routine clinical practice. *The Journal of Clinical Psychiatry, 71*(3), 280-286. https://doi.org/10.4088/JCP.08m04250yel

Borenstein, M. (2009). Effect sizes for continuous data. In Harris Cooper, L. V. Hedges, & J. C. Valentine (Eds.), *The handbook of research synthesis and meta-analysis* (2nd ed., pp. 221–236). New York, NY, USA: Russell Sage Foundation.

Borenstein, M., Hedges, L. V., Higgins, J. P. T., & Rothstein, H. R. (2009). *Introduction to meta-analysis*. Chichester, United Kingdom: John Wiley & Sons.

Buchanan, R. W. (2007). Persistent negative symptoms in schizophrenia: An overview. *Schizophrenia Bulletin, 33*(4), 1013-1022. https://doi.org/10.1093/schbul/sbl057

Carpenter, W. T., Jr., Heinrichs, D. W., & Wagman, A. M. I. (1988). Deficit and nondeficit forms of schizophrenia: The concept. *The American Journal of Psychiatry, 145*(5), 578-583. https://doi.org/10.1176/ajp.145.5.578

Cella, M., Preti, A., Edwards, C., Dow, T., & Wykes, T. (2017). Cognitive remediation for negative symptoms of schizophrenia: A network meta-analysis. *Clinical Psychology Review, 52*, 43-51. https://doi.org/10.1016/j.cpr.2016.11.009

Choi, K.-H., Jaekal, E., & Lee, G.-Y. (2016). Motivational and behavioral activation as an adjunct to psychiatric rehabilitation for mild to moderate negative symptoms in individuals with schizophrenia: A proof-of-concept pilot study. *Frontiers in Psychology, 7*, Article 1759. https://doi.org/10.3389/fpsyg.2016.01759

Cohen, J. (1992). A power primer. *Psychological Bulletin, 112*(1), 155-159. https://doi.org/10.1037/0033-2909.112.1.155

DerSimonian, R., & Laird, N. (1986). Meta-analysis in clinical trials. *Controlled Clinical Trials, 7*(3), 177-188. https://doi.org/10.1016/0197-2456(86)90046-2

Devoe, D. J., Peterson, A., & Addington, J. (2018). Negative symptom interventions in youth at risk of psychosis: A systematic review and network meta-analysis. *Schizophrenia Bulletin, 44*(4), 807-823. https://doi.org/10.1093/schbul/sbx139

DGPPN e.V. (2019). S3-Leitlinie Schizophrenie. Kurzfassung, 2019, Version 1.0. Retrieved March 15, 2019, from https://www.awmf.org/leitlinien/detail/ll/038-009.html

Duval, S., & Tweedie, R. (2000). Trim and fill: A simple funnel-plot–based method of testing and adjusting for publication bias in meta-analysis. *Biometrics, 56*(2), 455-463. https://doi.org/10.1111/j.0006-341X.2000.00455.x

Engel, M., Fritzsche, A., & Lincoln, T. M. (2014). Validation of the German version of the Clinical Assessment Interview for Negative Symptoms (CAINS). *Psychiatry Research, 220*(1-2), 659-663. https://doi.org/10.1016/j.psychres.2014.07.070

Favrod, J., Nguyen, A., Chaix, J., Pellet, J., Frobert, L., Fankhauser, C., . . . Bonsack, C. (2019). Improving pleasure and motivation in schizophrenia: A randomized controlled clinical trial. *Psychotherapy and Psychosomatics, 88*(2), 84-95. https://doi.org/10.1159/000496479

Fervaha, G., Foussias, G., Agid, O., & Remington, G. (2014). Motivational and neurocognitive deficits are central to the prediction of longitudinal functional outcome in schizophrenia. *Acta Psychiatrica Scandinavica, 130*(4), 290-299. https://doi.org/10.1111/acps.12289

Fusar-Poli, P., Papanastasiou, E., Stahl, D., Rocchetti, M., Carpenter, W., Shergill, S., & McGuire, P. (2015). Treatments of negative symptoms in schizophrenia: Meta-analysis of 168 randomized placebo-controlled trials. *Schizophrenia Bulletin, 41*(4), 892-899. https://doi.org/10.1093/schbul/sbu170

Galderisi, S., Rossi, A., Rocca, P., Bertolino, A., Mucci, A., Bucci, P., . . . Italian Network For Research on Psychoses. (2014). The influence of illness-related variables, personal resources and context-related factors on real-life functioning of people with schizophrenia. *World Psychiatry, 13*, 275-287. https://doi.org/10.1002/wps.20167

Granholm, E., Holden, J., Link, P. C., & McQuaid, J. R. (2014). Randomized clinical trial of cognitive behavioral social skills training for schizophrenia: Improvement in functioning and experiential negative symptoms. *Journal of Consulting and Clinical Psychology, 82*(116B), 1173-1185. https://doi.org/10.1037/a0037098

Grant, P. M. (2012). Randomized trial to evaluate the efficacy of cognitive therapy for low-functioning patients with schizophrenia. *Archives of General Psychiatry, 69*(2), 121-127. https://doi.org/10.1001/archgenpsychiatry.2011.129

Hedges, L. V., & Olkin, I. (1985). *Statistical methods for meta-analysis*. Orlando, FL, USA: Academic Press.

Higgins, J. P. T., Altman, D. G., & Sterne, J. A. C. (2008). Assessing risk of bias in included studies. In J. P. T. Higgins & S. Green (Eds.), *Cochrane handbook for systematic reviews of interventions* (pp. 187-242). Chichester, United Kingdom: The Cochrane Collaboration.

Higgins, J. P. T., & Deeks, J. J. (2008). Selecting studies and collecting data. In J. P. T. Higgins & S. Green (Eds.), *Cochrane handbook for systematic reviews of interventions* (pp. 151-186). Chichester, United Kingdom: The Cochrane Collaboration.

Higgins, J. P. T., Thompson, S. G., Deeks, J. J., & Altman, D. G. (2003, September 6). Measuring inconsistency in meta-analyses. *British Medical Journal, 327*, 557-560. https://doi.org/10.1136/bmj.327.7414.557

Horan, W. P., Kring, A. M., Gur, R. E., Reise, S. P., & Blanchard, J. J. (2011). Development and psychometric validation of the Clinical Assessment Interview for Negative Symptoms (CAINS). *Schizophrenia Research, 132*(2–3), 140-145. https://doi.org/10.1016/j.schres.2011.06.030

Jang, S.-K., Choi, H.-I., Park, S., Jaekal, E., Lee, G.-Y., Cho, Y. Il, & Choi, K.-H. (2016). A two-factor model better explains heterogeneity in negative symptoms: Evidence from the Positive and Negative Syndrome Scale. *Frontiers in Psychology, 7*, Article 707. https://doi.org/10.3389/fpsyg.2016.00707

Jauhar, S., McKenna, P. J., Radua, J., Fung, E., Salvador, R., & Laws, K. R. (2014). Cognitive-behavioural therapy for the symptoms of schizophrenia: Systematic review and meta-analysis with examination of potential bias. *The British Journal of Psychiatry, 204*(1), 20-29. https://doi.org/10.1192/bjp.bp.112.116285

Kay, S. R., Fiszbein, A., & Opler, L. A. (1987). The Positive and Negative Syndrome Scale (PANSS) for schizophrenia. *Schizophrenia Bulletin, 13*(2), 261-276. https://doi.org/10.1093/schbul/13.2.261

Khoury, B., Lecomte, T., Gaudiano, B. A., & Paquin, K. (2013). Mindfulness interventions for psychosis: A meta-analysis. *Schizophrenia Research, 150*(1), 176-184. https://doi.org/10.1016/j.schres.2013.07.055

Kirkpatrick, B., Strauss, G. P., Nguyen, L., Fischer, B. A., Daniel, D. G., Cienfuegos, A., & Marder, S. R. (2011). The Brief Negative Symptom Scale: Psychometric properties. *Schizophrenia Bulletin, 37*(2), 300-305. https://doi.org/10.1093/schbul/sbq059

Klingberg, S., Wölwer, W., Engel, C., Wittorf, A., Herrlich, J., Meisner, C., . . . Wiedemann, G. (2011). Negative symptoms of schizophrenia as primary target of cognitive behavioral therapy: Results of the randomized clinical TONES study. *Schizophrenia Bulletin, 37*(Suppl 2), S98-S110. https://doi.org/10.1093/schbul/sbr073

Kurtz, M. M., & Mueser, K. T. (2008). A meta-analysis of controlled research on social skills training for schizophrenia. *Journal of Consulting and Clinical Psychology, 76*(3), 491-504. https://doi.org/10.1037/0022-006X.76.3.491

Li, X., Chu, M., Lv, Q., Hu, H., Li, Z., Yi, Z., . . . Chan, R. C. K. (2019). The remediation effects of working memory training in schizophrenia patients with prominent negative symptoms. *Cognitive Neuropsychiatry, 24*(6), 434-453. https://doi.org/10.1080/13546805.2019.1674644

Lincoln, T. M., Pedersen, A., Hahlweg, K., Wiedl, K., & Frantz, I. (2019). *Evidenzbasierte Leitlinie zur Psychotherapie von Schizophrenie und anderen psychotischen Störungen.* Göttingen, Germany: Hogrefe.

Lincoln, T. M., Suttner, C., & Nestoriuc, Y. (2008). Wirksamkeit kognitiver Interventionen für Schizophrenie. *Psychologische Rundschau, 59*(4), 217-232. https://doi.org/10.1026/0033-3042.59.4.217

Lutgens, D., Gariepy, G., & Malla, A. (2017). Psychological and psychosocial interventions for negative symptoms in psychosis: Systematic review and meta-analysis. *The British Journal of Psychiatry, 210*(5), 324-332. https://doi.org/10.1192/bjp.bp.116.197103

Marder, S. R., & Galderisi, S. (2017). The current conceptualization of negative symptoms in schizophrenia. *World Psychiatry, 16*(1), 14-24. https://doi.org/10.1002/wps.20385

Martin, L. A. L., Koch, S. C., Hirjak, D., & Fuchs, T. (2016). Overcoming disembodiment: The effect of movement therapy on negative symptoms in schizophrenia – A multicenter Randomized Controlled Trial. *Frontiers in Psychology, 7*, Article 483. https://doi.org/10.3389/fpsyg.2016.00483

McGaw, B., & Glass, G. V. (1980). Choice of the metric for effect size in meta-analysis. *American Educational Research Journal, 17*(3), 325-337. https://doi.org/10.3102/00028312017003325

Mueller, D. R., Khalesi, Z., Benzing, V., Castiglione, C. I., & Roder, V. (2017). Does Integrated Neurocognitive Therapy (INT) reduce severe negative symptoms in schizophrenia outpatients? *Schizophrenia Research, 188*, 92-97. https://doi.org/10.1016/j.schres.2017.01.037

NICE. (2014). Psychosis and schizophrenia in adults: Treatment and management: Updated edition 2014. Retrieved from https://www.nice.org.uk/guidance/cg178

Penadés, R., Catalán, R., Salamero, M., Boget, T., Puig, O., Guarch, J., & Gastó, C. (2006). Cognitive Remediation Therapy for outpatients with chronic schizophrenia: A controlled and randomized study. *Schizophrenia Research, 87*(1–3), 323-331. https://doi.org/10.1016/j.schres.2006.04.019

Pos, K., Franke, N., Smit, F., Wijnen, B. F. M., Staring, A. B. P., Van Der Gaag, M., . . . Schirmbeck, F. (2019). Cognitive behavioral therapy for social activation in recent-onset psychosis: Randomized controlled trial. *Journal of Consulting and Clinical Psychology, 87*(2), 151-160. https://doi.org/10.1037/ccp0000362

Priebe, S., Savill, M., Wykes, T., Bentall, R., Lauber, C., Reininghaus, U., . . . Röhricht, F. (2016a). Clinical effectiveness and cost-effectiveness of body psychotherapy in the treatment of negative symptoms of schizophrenia: A multicentre randomised controlled trial. *Health Technology Assessment, 20*(11). https://doi.org/10.3310/hta20110

Priebe, S., Savill, M., Wykes, T., Bentall, R. P., Reininghaus, U., Lauber, C., . . . Röhricht, F. (2016b). Effectiveness of group body psychotherapy for negative symptoms of schizophrenia: Multicentre randomised controlled trial. *The British Journal of Psychiatry, 20*(1), 54-61. https://doi.org/10.1192/bjp.bp.115.171397

Riehle, M., Pillny, M., & Lincoln, T. M. (2017). Ist Negativsymptomatik bei Schizophrenie überhaupt behandelbar? Ein systematisches Literaturreview zur Wirksamkeit psychotherapeutischer Interventionen für Negativsymptomatik [Are the negative symptoms of schizophrenia treatable at all? A systematic review on efficacy studies for targeted psychological interventions for negative symptoms]. *Verhaltenstherapie, 27*(3), 199-208. https://doi.org/10.1159/000478534

Roder, V., Mueller, D. R., & Schmidt, S. J. (2011). Effectiveness of integrated psychological therapy (IPT) for schizophrenia patients: A research update. *Schizophrenia Bulletin, 37*(Suppl 2), S71-S79. https://doi.org/10.1093/schbul/sbr072

Röhricht, F., & Priebe, S. (2006). Effect of body-oriented psychological therapy on negative symptoms in schizophrenia: A randomized controlled trial. *Psychological Medicine, 36*(5), 669-678. https://doi.org/10.1017/S0033291706007161

Savill, M., Banks, C., Khanom, H., & Priebe, S. (2015). Do negative symptoms of schizophrenia change over time? A meta-analysis of longitudinal data. *Psychological Medicine, 45*(8), 1613-1627. https://doi.org/10.1017/S0033291714002712

Shadish, W. R., & Haddock, C. K. (2009). Combining estimates of effect size. In H. Cooper, L. V. Hedges, & J. C. Valentine (Eds.), *The handbook of research synthesis and meta-analysis* (2nd ed., pp. 257–277). New York, NY, USA: Russell Sage Foundation.

Smith, M. L., Glass, G. V., & Miller, T. I. (1980). *The benefits of psychotherapy*. Baltimore, MD, USA: John Hopkins University Press.

Sterne, J. A., Egger, M., & Moher, D. (2008). Addressing reporting biases. In J. P. T. Higgins & S. Green (Eds.), *Cochrane handbook for systematic reviews of interventions* (pp. 297–333). https://doi.org/10.1002/9780470712184.ch10

Strauss, G. P., Keller, W. R., Buchanan, R. W., Gold, J. M., Fischer, B. A., McMahon, R. P., . . . Kirkpatrick, B. (2012). Next-generation negative symptom assessment for clinical trials: Validation of the Brief Negative Symptom Scale. *Schizophrenia Research, 142*(1–3), 88-92. https://doi.org/10.1016/j.schres.2012.10.012

Turner, D. T., McGlanaghy, E., Cuijpers, P., van der Gaag, M., Karyotaki, E., & MacBeth, A. (2018). A meta-analysis of social skills training and related interventions for psychosis. *Schizophrenia Bulletin, 44*(3), 475-491. https://doi.org/10.1093/schbul/sbx146

Turner, D. T., van der Gaag, M., Karyotaki, E., & Cuijpers, P. (2014). Psychological interventions for psychosis: A meta-analysis of comparative outcome studies. *The American Journal of Psychiatry, 171*(5), 523-538. https://doi.org/10.1176/appi.ajp.2013.13081159

Twamley, E. W., Granholm, E. L., & ClinicalTrials.gov. (2014). Improving Negative Symptoms of Psychosis In Real-world Environments (INSPIRE). Retrieved August 12, 2019, from ClinicalTrials.gov website [Identifier: NCT02170051]: https://clinicaltrials.gov/ct2/show/NCT02170051

Velligan, D. I., Roberts, D., Mintz, J., Maples, N., Li, X., Medellin, E., & Brown, M. (2015). A randomized pilot study of MOtiVation and Enhancement (MOVE) Training for negative symptoms in schizophrenia. *Schizophrenia Research, 165*(2-3), 175-180. https://doi.org/10.1016/j.schres.2015.04.008

Velthorst, E., Koeter, M., van der Gaag, M., Nieman, D. H., Fett, A.-K. J., Smit, F., . . . de Haan, L. (2015). Adapted cognitive–behavioural therapy required for targeting negative symptoms in schizophrenia: Meta-analysis and meta-regression. *Psychological Medicine, 45*(3), 453-465. https://doi.org/10.1017/S0033291714001147

Viechtbauer, W. (2010). Conducting meta-analyses in R with the metafor package. *Journal of Statistical Software, 36*(3). https://doi.org/10.18637/jss.v036.i03

Wykes, T., Steel, C., Everitt, B., & Tarrier, N. (2008). Cognitive behavior therapy for schizophrenia: Effect sizes, clinical models, and methodological rigor. *Schizophrenia Bulletin, 34*(3), 523-537. https://doi.org/10.1093/schbul/sbm114

Clinical Psychology in Europe

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Politics and Education

Education and Training in Clinical Psychology and Psychological Psychotherapy in Switzerland

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Abstract

Switzerland offers Education in Clinical Psychology in the German and French language and training in Psychotherapy in German, French and Italian. Both education and training are structured along centralized guidelines and recognized at a federal level. After finishing one's studies, becoming a Psychological Psychotherapist requires between two and six years of postgraduate training and a financial investment of tens of thousands of Swiss Francs. Historically, it is quite common for Swiss psychotherapy trainings to incorporate a mix or combination of several psychotherapy schools such as cognitive behavioral, psychodynamic, systemic and humanistic. Foreign degrees obtained in EU countries are generally recognized, and the fulfillment of criteria is evaluated on an individual basis. Graduates find a diverse job market with opportunities to work in clinics and psychotherapeutical practices, but the absence of direct reimbursement via mandatory health insurance plans for psychological psychotherapists (not psychiatrists) lead many to work on patients' private payments or as a psychiatrist's employee. The ordering model, a potential new regulation allowing for the direct reimbursement of psychological psychotherapists' work, is planned to be decided upon throughout 2020.

Keywords

education in clinical psychology, psychotherapy training, Switzerland, employment models, reimbursement, ordering model

Highlights

- Switzerland offers education in Clinical Psychology in German and French.
- Trainings in Psychological Psychotherapy often incorporate content from various Psychotherapy schools.
- Degrees obtained in EU countries can be acknowledged.
- Several employment models exist for Psychological Psychotherapists, and the profession hopes to see improvements in the reimbursement situation throughout this year.

Education in Clinical Psychology

Goals

In Switzerland – a federal parliamentary republic consisting of four broad geographic and language regions and of 26 cantons – private and state universities as well as universities of applied sciences are centrally evaluated by the governmental institution swissuniversities (www.swissuniversities.ch). Altogether 12 universities are currently accredited and fulfill the criteria of the federal higher education law (Hochschulförderungs- und Koordinationsgesetz, HFKG) and six of them (Universities of Basel, Bern, Fribourg, Geneva, Lausanne and Zurich, but also the Zurich University of Applied Sciences) offer education programs in Clinical Psychology in German or French language. The University in Fribourg furthermore offers a bilingual curriculum (German-French) with courses in English.

Similar to most countries in Europe, the Swiss education in Clinical Psychology includes a three years' Bachelor and a two years' Master program. The Bachelor program includes basics of psychology such as human cognition, experimental psychology, personality, development, emotions, and psychopathology. Subsequent Master programs in Clinical Psychology focus on psychopathological and related biological processes, knowledge on evidence-based diagnostic and interventions and more strongly emphasize the ability to critically assess and process the scientific literature in the field. These skills allow students to pursue careers both in clinical settings (and particularly to pursue a federally accredited postgraduate training in psychotherapy or health psychology) as well as in research. A master diploma in psychology leads to the title "psychologist" that is recognized at federal level.

Contents, Structure and Costs

The contents of Bachelor programs in Psychology and Master programs in Clinical Psychology are similarly structured and comparable across all Swiss universities according to the guidelines of the *Konferenz der Schweizer Psychologie-Institute (K-PSYCH)*, which will be updated in June 2020. Bachelor programs include three years of studies and

180 ECTS, while master programs consist of two years of studies and 120 ECTS. A two-month full time practical experience which is mandatory in master programs can be completed in clinical settings, but also in research groups.

Evaluation

The Bachelor program in Psychology includes three consecutive years of studies. After the first year, students are required to pass written propaedeutic exams (except at the FernUni, ZHAW and FHNW). Subsequent examinations during the second and third year are individually organized by the universities and include oral and written exams as well as written essays or presentations.

Costs

Swiss Universities open all their education programs for a semester fee from CHF 500 up to CHF 1300 (swissuniversities, n.d.). Granting of studentships depends on the parental income and eligibility is usually organized by the canton of domicile of the student.

Legal Framework

Swiss Education in Psychology, Clinical Psychology and Psychotherapy

In 2013, the law on Psychology Professions (Bundesamt für Gesundheit [BAG], 2020a, PsyG/LPsy) was introduced with the overall purpose of reinforcing public health and protecting customers and people in need for psychological opinion, counseling or treatment from fraud. With the new law, the title "Psychologist" is now protected in Switzerland. Obtaining a master degree in Clinical Psychology in Switzerland qualifies students to enter accredited postgraduate specialized trainings in Neuropsychology, Psychological Psychotherapy, Health psychology, Clinical Psychology and Children and Youth Psychology. These are the 5 specialized post-graduate titles defined in the PsyG/LPsy. All Swiss postgraduate trainings are evaluated and accredited by the federal Commission on Psychology Professions (BAG, 2019b). This Commission also evaluates and decides the recognition of foreign degrees. Following the implementation of the PsyG in 2013 and until end of 2018, all existing training programs in Psychological Psychotherapy from different stakeholders in Switzerland underwent an evaluation process, which is required to be repeated every seven years, under the lead of the Commission of Psychology Professions.

Recognition of Foreign Degrees

Relying on the Swiss-EU Bilateral Agreement on the Free Movement of Persons (AFMP), Switzerland has adopted the EU's system of mutual recognition of professional qualifications (State Secretariat for Education, Resarch and Innovation [SERI], n.d.), in which a university degree or a degree from a university of applied science from abroad is recognized if it is acknowledged in the country of origin. Nonetheless, each application is evaluated on an individual basis and additional requirements may be determined before a title is validated as equivalent. Requests from countries outside of Europe are processed equally. As Switzerland is relatively unique in Europe in requiring 5 years of advanced training, additional parts of training regularly have to be caught up here.

Register of Psychology Professions

Psychologists with a title in Psychological Psychotherapy (and any other postgraduate training accredited by the Federal Department of Health as e.g. Child and Youth Psychologist, Neuropsychologist, Health Psychologist and Clinical Psychologists) are obliged to enlist in the Register of Psychology Profession (BAG, 2020b). In the case of Psychological Psychotherapists, the list includes information about whether the person is entitled to autonomously offer psychotherapeutic treatment. The register aims at increasing the transparency of offers across cantons and to ensure the quality of treatment offers to the Swiss inhabitants. The completion of the register is currently still ongoing.

Training in Psychological Psychotherapy

Diverse Options for Therapy Trainings

In Switzerland, different institutions offer training programs in Psychological Psychotherapy. In 2013, after the introduction of the PsyG/LPsy, a total of 62 postgraduate curricula in Psychological Psychotherapy were accredited temporarily until 2018, which means that these diplomas were recognized by the government independent of an evaluation according to the before mentioned conditions. These psychotherapy training offers were diverse and encompassed cognitive-behavioral, humanistic, psychodynamic and systemic approaches. Until 2019, 41 of these initial programs have been accredited by the Federal Department of Health. Currently, three German universities, two French universities, one German/French university and the ZHAW University of Applied Sciences from Switzerland offer a total of 12 postgraduate psychotherapy trainings for applicants holding an accredited Master's degree. The remaining 29 postgraduate psychotherapy trainings are offered outside the university. Of the 41 psychotherapy trainings, the following therapy schools are represented: (1) 8 in cognitive behavioral therapy; (2) 11 in psychoanalytic therapy; (3) 10 in systemic therapy; (4) 4 in humanistic methods; (5)

8 in various mixed forms and integrative approaches. Notably, it is common for the abovementioned programs to incorporate content from other "schools".

In Switzerland, adult and child/adolescent psychotherapy are currently not considered to be separate psychological professions by law. Therefore, a postgraduate diploma in Psychological Psychotherapy entitles psychotherapists to offer treatment to the full age range. Nevertheless, some training programs focus more on adults whereas others focus explicitly on children, adolescents and young adults.

Goals

Postgraduate trainees are expected to have established a profound understanding of human experience and behavior as well as their biological underpinnings during the Bachelor and Master program in Clinical Psychology. They are already skilled to assess and evaluate complex human experience and behavior in diverse developmental stages and psychosocial contexts. Building on these skills, postgraduate trainings in Psychological Psychotherapy (PPT) then teach to autonomously offer and evaluate psychotherapeutic treatment. Specifically, trainees learn to employ evidence-based psychotherapeutic theories, techniques and methods, reflect professional activities based on theoretical and practical expertise and reflecting societal and legal aspects, cooperate with other health experts, respect cost-efficiency in their professional activities, and others.

Contents and Structure

Altogether, obtaining the title of a Psychological Psychotherapist requires between four and six years of fulltime postgraduate training and is prolonged if the training is executed in part time. Resulting in a sum of 5430 units (one unit equals 45 minutes), the training consists of theory and competences (500 units), Supervision (at least 150 units, 50 of which in a single setting), self-experience (at least 100 units, 50 of which in a single setting), individual and practical experiences under supervision (at least 500 units, with at least 10 case reports), and altogether at least 2 years of fulltime practical experiences in an institution of primary psychosocial health care, with at least one year in psychotherapeutic or psychiatric primary health care (EDI, 2016). In case of part time employment, the duration is automatically prolonged. No less than 50% part time employment is allowed. These are basic and mandatory requirements. Most institutions offering psychotherapeutic training ask for more hours than legally required, especially for more units of theory and practical competence training.

Evaluation

At the end of postgraduate trainings in Psychological Psychotherapy, the responsible teaching and supervising experts of the program examine the trainees' theoretical and clinical competences and evaluate whether all units have been acquired. During the

training process, supervisors and experts repeatedly comment on the trainee's professional development and their patients' therapeutic processes and discuss the trainees' case reports Examination procedures during or at the end of the program depend on the individual institute offering the postgraduate training and may include oral or written theoretical exams and oral exams on case reports of the trainees.

Costs

The total costs of postgraduate psychotherapy training vary strongly, ranging from a minimum of 35200 CHF to a maximum of 91700 CHF.

Number of Psychologists and Psychotherapists

According to the most recent representative survey initiated by the Swiss Federation of Psychologists (FSP, https://www.psychologie.ch; Stettler, Stocker, Gardiol, Bischof, & Künzi, 2013) in 2012, Switzerland counted 15 000 psychologists or 1.8 psychologists per 1000 inhabitants, while there were 0.4 fulltime working Psychological Psychotherapists per 1000 inhabitants. In 2012, 32% of all Psychological Psychotherapists reported working according to the psychoanalytic, 19% to the cognitive-behavioral, 17% to the humanistic and 12% to the systemic orientation, and an additional fraction reported to adhere to multiple schools (Grosse Holtforth, Kramer, & Dauwalder, 2015). In 2019, around 8600 (79% female) students were enrolled in Psychology at a Swiss university (not including PhD students and persons pursuing postgraduate trainings (Bundesamt für Statistik, 2019).

After the implementation of the law on Psychology Professions, from April 2013 until December 2019, a total of 2218 degrees in psychology and 359 degrees in psychotherapy from abroad have been accredited. Altogether 80% of these candidates had pursued their education and psychotherapy training in Italy, Germany, France, Portugal and in Austria. The remaining 20% applications came from South America and from Mid and Eastern Europe (BAG, 2020c).

Advanced Training for Psychotherapists

After receiving a diploma in Psychological Psychotherapy from an accredited training program, psychotherapists are obliged to participate in regular advanced trainings in order to refresh and renew their theoretical and practical competences. Nevertheless, up to date, neither contents nor hours of advanced training have been defined.

Trainings in Other Specialization Titles

For Neuropsychology, there is one accredited curriculum in French and one accredited training in German, offered in collaboration between Universities and the Swiss

Society of Neuropsychology. Neuropsychologist are the only specialized psychologists reimbursed by the mandatory health insurance.

For Health Psychology, there is at the moment only one French-speaking curriculum offered by French-speaking Universities (Fribourg, Geneva and Lausanne, Leading House Fribourg) in collaboration with the Swiss Society for Health Psychology under the institutional cover of the rector conference of French-speaking Universities in Switzerland (the so-called Triangle Azur). The delivered title is a MAS in Health Psychology, the accreditation process will begin soon.

For Clinical Psychology, there is one French-speaking curriculum offered by 3 French-speaking Universities (Geneva, Lausanne and Fribourg, Leading House Geneva) in collaboration with the Swiss Association of clinical psychologists, also under the institutional cover of the rector conference of French-speaking Universities in Switzerland (the so-called Triangle Azur). The delivered title is a MAS in Clinical Psychology, the accreditation process will begin soon. The Swiss Association of clinical psychologists offer a complete curriculum in German and one in Italian, leading the title of specialist in clinical psychology recognized by the Swiss Federation of Psychologists, but not accredited by the federal Commission on Psychology Professions yet. The Clinical Psychology specialization is particularly aimed at the employment in mental health hospitals with in-patients. For Children and Youth Psychology, there is only one training option offered by the Swiss Association of Children and Youth Psychologists, that is not accredited yet.

Employment Situation for Psychological Psychologists in Switzerland

Psychotherapy in the Swiss Health System

The total annual costs for health services which are reimbursed by mandatory insurances in Switzerland amount to CHF 9,86 billion of which 11% (CHF 1,08 billion) are generated in the field of psychiatry (including Psychological Psychotherapy). Specifically, 2.9% of the total annual health costs covered by mandatory insurances (CHF 286 million) are generated by psychological services (Grosse Holtforth, Kramer, & Dauwalder, 2015). These numbers do not include the costs of Psychological Psychotherapy covered by private insurances or paid by patients personally.

According to a study by the *Schweizerisches Gesundheitsobservatorium*, around 470,000 individuals (7% of the population above 15 years of age) sought psychotherapeutic treatment in 2009, 88% of who were treated in an outpatient and 12% in an inpatient setting (Rüesch, Baenziger, & Juvalta, 2013). Psychological Psychotherapists in particular, treat 259 000 of these patients each year (Stettler et al., 2013). On average, each Psychological Psychotherapist treats 84 patients per year, and each patient receives 29 sessions within 17 months of treatment. A majority of Psychological Psychotherapists reports having

a wait list (59%). 43% therapists report that they do not have any current availability (Stettler et al., 2013). Quantitative research on treatment gaps in psychotherapy in Switzerland is relatively scarce. Estimates of the percentage of individuals suffering from a mental disorder who do not receive even minimal treatment range from 40% to 65% (Stocker et al., 2016).

The reimbursement of Psychological Psychotherapy in the Swiss health-care system is divided into three main financing sources. Firstly and most importantly, 67% of the psychotherapeutic services are reimbursed by the mandatory health insurance plans. Secondly, 29% of the psychotherapeutic services are paid by the patients themselves or by their private complementary insurances, and, thirdly, 4% of the psychotherapeutic services are financed by public social services. (Stettler et al., 2013).

Employment Models for Psychological Psychotherapists

The fact that there is so far no direct reimbursement of Psychological Psychotherapy by the mandatory health insurances influences the current employment models. About a third of all Psychological Psychotherapists work in private practice, where their patients privately pay for psychotherapeutic treatment or receive partial reimbursement via a private insurance plan. Another group of Psychological Psychotherapists of about 40% work in so-called "delegated" practice (Stettler et al., 2013). As a "delegated psychotherapist" the Psychological Psychotherapist is an employee of and works in the rooms of a psychiatrist. According to the current legislation, this means that the psychiatrist "delegates" psychotherapy and that the Psychological Psychotherapist works under the psychiatrist's legal responsibility and supervision. The psychiatrist gets reimbursed for the psychotherapy provided by the psychologist via mandatory basic insurance plans. The payment of the Psychological Psychotherapists varies from employer to employer (psychiatrist). Strikingly, the reimbursement for delegated psychotherapy is only around two thirds of that for psychotherapy offered by psychiatrists.

Psychological Psychotherapists further work in outpatient clinics within larger institutions, where patients either pay privately (if a psychological psychologist is head of the unit), or the patients get reimbursed for their psychotherapies (if a psychiatrist is head of the clinic). Finally, around 13% of psychological psychotherapists work in psychiatric hospitals and provide primary mental health care as well as psychotherapy.

(Possibly) Better Working Conditions in the Future

The system of delegated psychotherapy is highly controversial in Switzerland. It was originally implemented as a temporary solution to improve access to mental health care until the psychological profession were regulated in detail and – again supposedly temporarily - treats psychological psychotherapists as auxiliary employees of psychiatrist-psychotherapists receiving a lesser payment. Although the rationale behind the

delegated model has become obsolete with the „Law on Psychology Professions“ introduced in 2013, adaption has been postponed until today. Remarkably, the delegation model has remained unchanged despite clearly standing at contrast with psychological psychotherapists' official authorization to execute their profession independently and to their own full responsibility (www.psyeg.admin.ch). The Law however changed the situation of Neuropsychologists who are now reimbursed by the mandatory Law.

Recently, a potential new regulation called the "ordering model" is being discussed and evaluated by the government. In the ordering model, a psychological psychotherapist would work self-employed and in his/her own office, and a physician's prescription would suffice for the reimbursement of a limited number of psychotherapy sessions by mandatory health insurance plans. After a period of more than 7 years of internal evaluations, the federal council opened a consultation phase regarding the planned new legal regulations in July 2019 (BAG, 2019a).

While the federal department of health supports the new regulation, there have been heated debates since the consultation phase has been opened, most prominently between psychologists, psychiatrists and politics. As a result, the decision on the implementation of the ordering model, which was originally scheduled for early 2020, has been postponed and seems unlikely to be processed in due time.

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References

Bundesamt für Gesundheit (BAG). (2018). *Akkreditierung von Weiterbildungsgängen der Psychologieberufe*. Retrieved February 27, 2020, from https://www.bag.admin.ch/bag/de/home/berufe-im-gesundheitswesen/akkreditierung-gesundheitsberufe/akkreditierung-vonweiterbildungsgaengen-im-bereich-psychologieberufe.html

Bundesamt für Gesundheit (BAG). (2019a). *Änderung KVV und KLV betreffend Neuregelung der psychologischen Psychotherapie und der Zulassungsvoraussetzungen nicht-ärztlicher Leistungserbringer*. Retrieved February 27, 2020, from https://www.bag.admin.ch/bag/de/home/versicherungen/krankenversicherung/krankenversicherung-revisionsprojekte/aenderungen-psychotherapie-nichtaerztlicheleistungserbringer.html

Bundesamt für Gesundheit (BAG). (2019b). *Psychologieberufekommission (PsyKo)*. Retrieved February 26, 2020, from

https://www.bag.admin.ch/bag/de/home/das-bag/organisation/ausserparlamentarische-kommissionen/psychologieberufekommission-psyko.html

Bundesamt für Gesundheit (BAG). (2020a). *Häufige Fragen (FAQ) zum Psychologieberufsgesetz (PsyG).* Retrieved February 26, 2020, from https://www.bag.admin.ch/bag/de/home/berufe-im-gesundheitswesen/psychologieberufe/faq-psyg.html

Bundesamt für Gesundheit (BAG). (2020b). *Psychologieberuferegister PsyReg.* Retrieved February 27, 2020, from https://www.bag.admin.ch/bag/de/home/berufe-im-gesundheitswesen/psychologieberufe/psychologieberuferegister-psyreg.html

Bundesamt für Gesundheit (BAG). (2020c). *Statistiken Anerkennungen Psychologieberufe.* Retrieved February 27, 2020, from https://www.bag.admin.ch/bag/de/home/zahlen-und-statistiken/statistiken-berufe-im-gesundheitswesen/statistiken-anerkennungen-psychologieberufe.html

Bundesamt für Statistik. (2019). *Tertiärstufe, universitäre Hochschulen: Studierende nach Hochschule und Fachbereich.* Retrieved February 27, 2020, from https://www.bfs.admin.ch/bfs/de/home/aktuell/neue-veroeffentlichungen.assetdetail.7746943.html

Eidgenössisches Departement des Innern (EDI). (2016). *Verordnung des EDI über Umfang und Akkreditierung der Weiterbildungsgänge der Psychologieberufe.* Retrieved February 27, 2020, from https://www.admin.ch/opc/de/classified-compilation/20132533/index.html#app1ahref2

Grosse Holtforth, M., Kramer, U., & Dauwalder, J.-P. (2015). Psychological psychotherapy in Switzerland: Moving towards transparency and quality. *Santé mentale au Québec, 40*(4), 51-58. https://doi.org/10.7202/1036093ar

Rüesch, P., Baenziger, A., & Juvalta, S. (2013). *Regionale psychiatrische Inanspruchnahme und Versorgungsbedarf in der Schweiz* (Obsan Dossier 23). Neuchâtel, Switzerland: Schweizerisches Gesundheitsobservatorium Obsan.

State Secretariat for Education, Resarch and Innovation (SERI). (n.d.). *Recognition of Foreign Qualifications.* Retrieved February 26, 2020, from https://www.sbfi.admin.ch/sbfi/en/home/bildung/recognition-of-foreign-qualifications.html

Stettler, P., Stocker, D., Gardiol, L., Bischof, S., & Künzi, K. (2013). *Strukturerhebung zur psychologischen Psychotherapie in der Schweiz 2012* [Survey of psychological psychotherapy in Switzerland 2012]. Bern, Switzerland: Federation of Swiss Psychologists (FSP).

Stocker, D., Stettler, P., Jäggi, J., Bischof, S., Guggenbühl, T., Abrassart, A., ... Künzi, K. (2016). *Versorgungssituation psychisch erkrankter Personen in der Schweiz.* Bern, Switzerland: Büro für arbeits- und sozialpolitische Studien BASS.

Swissuniversities. (n.d.). *Semestergebühren Hochschulen-2019/2020.* Retrieved January 16, 2020, from https://www.swissuniversities.ch/fileadmin/swissuniversities/Dokumente/Lehre/Hochschulraum/Gebuehren.pdf

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Announcements

Announcement of the Registered Report "Effect of Cultural Adaptation of a Smartphone-Based Self-Help Programme on its Acceptability and Efficacy"

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Editor's note: *This is an announcement of a Registered Report which received In-Principal-Acceptance (IPA) to be published in "Clinical Psychology in Europe". The study protocol is publicly accessible at https://doi.org/10.23668/psycharchives.3152. In this announcement, a brief summary of the study protocol is presented.*

In order to narrow the world-wide treatment gap, innovative interventions are needed that can be used among culturally diverse groups, e.g., immigrant populations in high-income countries. Research on cultural adaptation of psychological interventions indicates that a higher level of adaptation is associated with a higher effect size of the intervention. However, direct comparisons of different levels of adaptations are scarce and have not been done with self-help interventions.

Aims

The registered study will use a Smartphone-based self-help programme called Step-by-Step (Albanian: Hap-pas-Hapi) for the treatment of psychological distress among Albanian-speaking immigrants in Switzerland and Germany. Two levels of cultural adaptation (i.e., surface vs. deep structure adaptation) will be compared. We hypothesise that the deep structure adaptation will enhance the acceptance and effect size of the intervention. The deep structure adaptation was done based on an ethnopsychological study to examine the target population's cultural concepts of distress.

Method

In the registered study, we will conduct a two-arm, single-blind randomised controlled trial. Participants will be randomly assigned to the surface vs. deep structure adaptation version of Hap-pas-Hapi (1:1 allocation using permuted block randomization). Inclusion criteria are good command of the Albanian language, age above 18, and elevated psychological distress (Kessler Psychological Distress Scale score above 15). Primary outcome measures are the total score of the Hopkins Symptom Checklist and the number of participants who completed at least three (out of five) sessions. Secondary outcomes are global functioning, well-being, symptoms of post-traumatic stress, and self-defined problems. In addition, we will test a mediation model, hypothesizing that the deep structure adaptation will address fatalistic beliefs and enhance alliance with the self-help programme, which in turn increases the acceptance and effect size of the intervention. And finally, we will measure acculturation and hypothesise, that with higher levels of acculturation, the effect of the deep structure adaptation will diminish.

Discussion

The registered study is the first study to directly compare two different levels of cultural adaptation of an online self-help programme for the treatment of psychological distress among immigrants in high-income countries. We aim to deliver theory-driven and methodologically rigorous empirical evidence regarding the effect of cultural adaptation on the acceptance and effect size of this self-help programme.

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Competing Interests: The authors have declared that no competing interests exist.

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Supplementary Materials

The study protocol for this Registered Report is publicly accessible via PsychArchives.org (see Index of Supplementary Materials below).

Index of Supplementary Materials

Heim, E., Burchert, S., Shala, M., Kaufmann, M., Cerga Pashoja, A., Morina, N., . . . Maercker, A. (2020). *Effect of cultural adaptation of a smartphone-based self-help programme on its acceptability and efficacy: Study protocol for a randomized controlled trial.* PsychArchives. https://doi.org/10.23668/psycharchives.3152