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**DOI**

[10.1080/20008198.2019.1571377](https://doi.org/10.1080/20008198.2019.1571377)

**Publication date**

2019

**Document Version**

Final published version

**Published in**

European Journal of Psychotraumatology

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**Citation for published version (APA):**

Huntjens, R. J. C., Rijkeboer, M. M., & Arntz, A. (2019). Schema therapy for Dissociative Identity Disorder (DID): Rationale and study protocol. *European Journal of Psychotraumatology*, 10, Article 1571377. <https://doi.org/10.1080/20008198.2019.1571377>

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# Schema therapy for Dissociative Identity Disorder (DID): rationale and study protocol

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## ABSTRACT

**Background:** A category of disorders frequently associated with a history of trauma are the dissociative disorders, of which Dissociative Identity Disorder (DID) is the most severe and chronic form. DID is associated with high levels of impairment, treatment utilization, and treatment costs, yet systematic research into treatment effects is scarce. Practice-based clinical guidelines advise a phase-based approach which is lengthy and has rather high reported dropout rates. Therefore, in the current proposal the efficacy of an alternative treatment for DID (i.e. schema therapy) is tested.

**Objective:** The aim of this study is to critically test the effectiveness of schema therapy for DID patients, for whom at present no evidence-based treatment is available.

**Method:** In light of the low prevalence of DID, and the proposed treatment length of three years, a case series experimental approach is used (non-concurrent multiple baseline design). Ten outpatients are included, who are diagnosed with DID by an independent rater using the Structured Clinical Interview for DSM-IV Dissociative Disorders (SCID-D-R), which is double-checked by another independent expert. Primary outcomes are a (bi)weekly assessed state measure of dissociative symptoms, a pre-, post- and follow-up measure of the presence of the DID diagnosis, and drop-out rate. Secondary outcomes include various measures of trait dissociative symptoms, comorbid symptomatology, and global symptomatic distress.

**Trial registration:** Netherlands Trial Register (NTR): NTR4496

## Terapia de esquema para el trastorno de identidad disociativo (DID): justificación y protocolo de estudio

**Antecedentes:** Una categoría de trastornos frecuentemente asociados con un historial de trauma son los trastornos disociativos, de los cuales el trastorno de identidad disociativo (DID, por sus siglas en inglés) es la forma más grave y crónica. El DID se asocia con altos niveles de deterioro, utilización y costos de tratamiento, aunque la investigación sistemática sobre los efectos de tratamiento es escasa. Las guías clínicas basadas en la práctica aconsejan un enfoque basado en fases que es largo y tiene tasas reportadas de deserción más bien altas. Por lo tanto, en la propuesta actual, se prueba la eficacia de un tratamiento alternativo para DID (es decir, terapia de esquema).

**Objetivo:** El objetivo de este estudio es probar críticamente la efectividad de la terapia de esquema para pacientes con DID, para quienes en la actualidad no hay disponible un tratamiento basado en la evidencia.

**Método:** En vista de la baja prevalencia de DID y la duración del tratamiento de tres años propuesto, se utiliza un enfoque experimental de series de casos (diseño de línea base múltiple no concurrente). Se incluyen diez pacientes ambulatorios, que son diagnosticados con DID por un evaluador independiente usando el SCID-D-R, que es verificado por otro experto independiente. Los resultados primarios son una medida (bi)semanal de estado de síntomas disociativos, una medida previa, posterior y de seguimiento de la presencia del diagnóstico de DID, y tasa de deserción. Los resultados secundarios incluyen diversas medidas de los síntomas de rasgos disociativos, sintomatología comórbida y malestar sintomático global.

## 解离身份障碍 ( DID ) 的图式疗法 : 原理和研究方案

背景: 解离障碍是一类常常与创伤史相关的疾病, 其中解离性身份障碍 (DID) 是最严重和最长期的形式。DID 与高水平的损伤, 治疗使用和治理成本相关, 但对治疗效果的系统研究很少。基于实践的指南建议采用一种分阶段的疗法, 但该疗法耗时且脱落率相当高。因此, 在本方案中考察了DID的一种替代治疗 (即, 图式治疗) 的功效。

## ARTICLE HISTORY

Received 19 July 2018  
Revised 23 December 2018  
Accepted 6 January 2019

## KEYWORDS

Dissociative Identity Disorder; schema therapy; trauma; multiple baseline case series; dissociation

## PALABRAS CLAVE

Trastorno de identidad disociativo; terapia de esquema; trauma; series de casos de línea base múltiple; disociación

## 关键词

解离身份障碍, 图式疗法, 创伤, 多基线病例系列, 解离

## HIGHLIGHTS

- At present, no evidence-based treatment is available for DID patients.
- Practice-based clinical guidelines advise a phase-based approach.
- Drawback of this phase-based approach is its substantial average length and dropout rates.
- In the current study, the efficacy of an alternative approach to treatment for DID (i.e. schema therapy) is tested using a case series design.

目的：目前尚无基于证据的DID治疗方法，本研究的目的是严格考查图式治疗的有效性。

方法：鉴于DID患病率低，建议治疗时间为3年，我们采用病例系列实验方法（非并发多基线设计）。研究包括10名门诊患者，由独立评估者使用SCID-DR诊断为DID，由另一位独立专家进行二次检查。主要结果是每（两）周评估的解离症状状态测量，治疗前、后和追踪期的DID诊断，以及脱落率。二级结果包括各种特质性状解离症状，共病症状和整体症状压力。

## 1. Introduction

Clinical and epidemiological research has indicated a significant association between trauma exposure and a variety of psychological disorders (e.g. Fierman et al., 1993; Leskin & Sheikh, 2002). One category of disorders frequently associated with a history of trauma are the dissociative disorders, of which Dissociative Identity Disorder (DID) is the most severe and chronic form (Dalenberg et al., 2012; see Giesbrecht, Lynn, Lilienfeld, & Merckelbach, 2008, for a critical evaluation of the association between trauma and DID). Although dissociative symptoms can be found in many mental disorders, highest levels of dissociative experiences were found in DID (Lyssenko et al., 2018). The main diagnostic criterion for DID is a disruption of identity characterized by two or more distinct personality states. The disruption in identity involves marked discontinuity in sense of self and sense of agency, and is accompanied by alterations in affect, behaviour, consciousness, memory, perception, cognition, and/or sensory-motor functioning. In addition, the patient experiences recurrent gaps in the recall of everyday events, important personal information, and/or traumatic events (DSM-5; American Psychiatric Association, 2013). The DSM-5 estimates the 12-month prevalence of DID as 1.5% of the population of American adults (American Psychiatric Association, 2013). The prevalence in psychiatric settings has been estimated to be around 5% (range 0.4–14%; Şar, 2011). However, these estimations are generally not based on strict assessment procedures and therefore are probably overestimating the real prevalence. Patients suffering from DID show high levels of impairment, high treatment utilization, and high treatment costs (Ross & Dua, 1993). Of all dissociative disorders, DID patients have the highest mean impairment scores on measures of psychosocial, occupational, and interpersonal functioning (Johnson, Cohen, Kasen, & Brook, 2006). These impairment scores are over 50% higher than those of patients with other syndromal or personality related psychiatric disorders, and results remained significant after controlling for age, gender, and comorbid disorders (Johnson et al., 2006; Mueller-Pfeiffer et al., 2012). Dissociative disorder pathology is also strongly related to self-harm and multiple suicide attempts (Foote, Smolin, Neft, & Lipschitz, 2008). DID patients specifically are at high risk for early mortality, and are among the most expensive patients

in the mental health care system (Galbraith & Neubauer, 2000).

### 1.1. Treatment for Dissociative Identity Disorder and evidence regarding its effectiveness

No formal, evidence-based treatment guidelines are available for DID (e.g. National Institute for health and Care Excellence [NICE] guidelines). The most commonly provided treatment approach for DID is individual psychodynamic psychotherapy (Brand, Classen, McNary, & Zaveri, 2009; Putnam & Loewenstein, 1993). According to practice-based guidelines initiated by the International Society for the Study of Trauma and Dissociation (ISSTD, 2011), DID treatment preferably is delivered in sequenced stages or phases. Generally, this treatment encompasses three phases. In the first phase safety and symptom stabilization is established, in the second phase traumatic memories are confronted and processed, and in the third phase identity integration and rehabilitation is addressed (International Society for the Study of Trauma and Dissociation, 2011). Following a basic tenet of compartmentalized identities, the main aim of this treatment is to bring about an increased degree of co-consciousness, communication, and integrated functioning among the different parts, facilitating the processing of compartmentalized traumatic memories, and the integration of separate identities in the second and third stage of therapy (International Society for the Study of Trauma and Dissociation, 2011). It is thought that a lack of concentration on stabilization, and/or a premature focus on detailed exposure to and processing of traumatic memories, will result in overwhelming emotions, exacerbation of symptoms, and decompensation of the patient, accompanied by increased deterioration in day-to-day functioning (Brand, Loewenstein, & Spiegel, 2014). The second, trauma-focused, phase of therapy is considered too destabilizing for chronically low-functioning patients, including those with severe attachment problems, minimal ego strength and coping capacity, ongoing enmeshment with perpetrators, severe personality pathology, significant medical problems, and ongoing substance abuse and dependency (International Society for the Study of Trauma and Dissociation, 2011). Hence, phase two is only started when there

are relatively few life stressors, and there is enough ego strength, commitment to treatment, social support, economic resources, and other factors that help patients to undertake a demanding, change-oriented treatment. Consequently, patients may stay in phase one for long periods of time, sometimes even for the entire course of treatment, which may last 10 years or longer.

Research on the effectiveness and efficacy of DID treatments is still in its infancy, partly because patients with these disorders are usually excluded from treatment studies (e.g. due to their complexity, poly-symptomatology, and the long treatment length they are supposed to need), even when these studies involve treatment of patients who faced chronic childhood abuse (e.g. Van der Kolk & Courtois, 2005). In a review of eight treatment outcome studies of dissociative disorders (most included patients had DID or dissociative disorder not otherwise specified; DDNOS), all nonrandomized, Brand, Classen, McNary, & Zaveri (2009) concluded that treatment was associated with a reduction of dissociative symptoms from pre- to post-treatment (mean effect size Hedges  $g = .70$ ), and a range of associated symptoms (including symptoms of anxiety, borderline personality disorder (BPD), depression, substance use, and general distress; mean overall outcome effect size  $g = .72$  at discharge, and  $.66$  at follow-up ranging from three months to two years). In addition, Brand and colleagues (Brand, Classen, Lanius, et al., 2009, 2013; Myrick, Webermann, Loewenstein, Lanius, Putnam, & Brand, 2017) performed an observational prospective naturalistic survey study following DID and DDNOS outpatients and their therapists. Each participating therapist self-selected a patient from his or her caseload, who was followed for a period of 30 months. Patients had been in treatment with the current therapist for an average of five years, and had been formally diagnosed with DID or DDNOS for an average of seven years. Positive treatment results were reported: in addition to a decrease on a range of symptoms (e.g. dissociative symptoms, posttraumatic stress disorder symptoms, general distress), both patients and therapists reported an improvement in social functioning for patients, and a decrease in, among others, drug use, self-injurious behaviour, and number of hospitalizations. It was also suggested that treatment was associated with reduced inpatient and outpatient costs over time (Myrick, Webermann, Langeland, Putnam, & Brand, 2017).

Jepsen, Langeland, Sexton, and Heird (2014) investigated symptomatic change in patients suffering from a history of childhood sexual abuse with versus without a *complex* dissociative disorder (CDD, with *complex* referring to DID and DDNOS-1, see Dell, 2009)

attending a three-months inpatient phase-one treatment (i.e. stabilization). Results indicated that, whereas patients with CDD had higher symptom levels pre-treatment, both patient groups showed parallel improvement on dimensional symptom measures for posttraumatic stress symptoms, general psychiatric symptoms, interpersonal problems, depressive symptomatology, and dissociative symptoms from admission to 12-months follow-up (mean effect size Cohen's  $d = 0.43$  for the CDD group and  $0.68$  for the non-CDD group).

These studies provide preliminary evidence of treatment effectiveness on a range of symptoms associated with DID. Yet, the number of studies has been very small. Moreover, previous studies suffer from major methodological shortcomings, limiting both internal and external validity (i.e. generalizability). Most of the studies did not report whether changes following treatment constituted clinically meaningful changes. Details on treatment programmes were missing, as all studies included non-manualized interventions, rendering replication difficult, if not impossible. Furthermore, most of the studies relied on a single therapist and a single treatment site. Yet, most important, studies lacked an adequately randomized controlled design. There were no *comparison groups* (i.e. a patient group without treatment or with an alternative treatment) or *comparison conditions*, (e.g. the inclusion of a baseline measurement phase; as an exception of the latter see the case study by Kellett, 2005). As a consequence, it cannot be determined if, and if so, how much patients would have improved without treatment. Hence, it is impossible to know whether change occurred due to treatment or some other variable (e.g. the passage of time, regression to the mean, or placebo effects). It is even possible that no treatment would result in better results than the treatment provided. Another limitation is that, for most studies, diagnostic status was not based on structured interviews, leaving it undetermined whether true cases of DID were included. Also, several studies suffered from problematic high drop-out rates (i.e. 60% in a study by Ellason & Ross, 1997; 68% in Gantt & Tinnin, 2007), whilst in other studies drop-out was not reported (Ross & Ellason, 2001), rendering the external generalization of results hazardous. Based on the results of these uncontrolled studies, changes following treatment cannot be causally attributed to the treatment, as it is also possible that improvement would have occurred without treatment (Brand, 2012).

Besides the lack of controlled studies to test the effectiveness and efficacy of the phase-based approach for DID, there is room for improvement in the treatment of DID. As mentioned before, drop-out is relatively high and the treatment is intensive and lengthy.

The minimum frequency of sessions for most DID patients is once a week, with many experts advising two or three sessions a week. Statistics on the mean length of treatment are scarce. Groenendijk and van der Hart (1995) mentioned a mean length of six years of treatment, based on therapist reports, in a combined sample of DID and DDNOS patients. In the aforementioned study by Brand and colleagues, patients in the last phase of treatment were seen by the current therapist for over eight years (Brand, Classen, Lanius, et al., 2009). Notably, during these years many patients stay in phase-one (i.e. with a continuous focus on stabilization, crisis management, and symptom reduction) and, hence, will not reach the second phase of therapy. Only a minority of DID patients reach phase three (22% in Ellason & Ross, 1997; 7% in Brand, Classen, Lanius, et al., 2009).

Although we consider stabilization techniques (i.e. throughout treatment) important for these patients, we consider delaying or restricting access to effective (phase two) trauma-focused treatments may be potentially harmful to patients (for a comparable argumentation in the context of PTSD see Neuner, 2008).

Whereas treatment outcome for DID or DDNOS seem to be associated with improvement across a wide range of outcomes, this is not always the case. In some studies, no pre- to post-treatment change in dissociation scores were found (e.g. Jepsen et al., 2014; Ross & Ellason, 2001) and amnesia scores even worsened (Choe & Klufft, 1995). In the studies that report positive effects, most patients do not completely recover from their chronic struggles with severe dissociation, PTSD, depression, and general distress. For example, in the study by Gantt and Tinnin (2007), 68% of the patients diagnosed with DID or DDNOS did not 'recover'. Thus, whereas treatment is associated with a decrease of a wide range of symptoms, patients typically do not recover.

To summarize, the phase-based approach of DID seems related to reduced levels of dissociative and comorbid symptomatology. However, the level of evidence for these findings is low, as previous studies suffer from serious methodological weaknesses. We do not know how these improvements compare to what is observed during the passage of time.

### **1.2. Rational for an alternative treatment: schema therapy**

Whereas DID patients may subjectively perceive their different identities as compartmentalized, empirical evidence from the experimental psychopathology field contradicts the view of identities with separate memory store divided by amnesic barriers. A series of

studies in different labs assessed the transfer of information between identities in DID. Both tests of implicit and explicit memory were included, and neutral, emotional, and autobiographical information. The data across studies were consistent in that, subjectively, DID patients reported amnesia among identities, but objectively, no evidence was found for inter-identity amnesia (for an overview, see Dorahy & Huntjens, 2007; Huntjens, Verschuere, & McNally, 2012). In sum, these studies do not support the view of compartmentalized personalities but show intact memory pathways. Whereas the DID patient may – on a meta-cognitive level – not acknowledge all memories as 'personal' memory in each identity state, this is not to say that memory functioning in DID is compartmentalized or impaired in other ways (Huntjens, Postma, Peters, Woertman, & van der Hart, 2003). Moreover, it is important to note that shifts among feelings, emotions, and behaviours, as often seen in DID, also appear in other disorders related to severe, early, and prolonged childhood abuse, including BPD, other personality disorders, and PTSD (Arntz, Klokman, & Sieswerda, 2005; Johnston, Dorahy, Courtney, Bayles, & O'Kane, 2009). Note that DID and BPD are highly comorbid conditions (Gleaves, May, & Cardeña, 2001).

An evidence-based treatment for patients with personality disorders is schema therapy (for reviews see Jacob & Arntz, 2013; Masley, Gillanders, Simpson, & Taylor, 2012; Sempértegui, Karreman, Arntz, & Bekker, 2013). Schema therapy is an integrative therapy lasting 1–3 years, blending traditional cognitive behavioural treatment with experiential and interpersonal elements (Young, 1990; Young & Gluhoski, 1996; Young, Klosko, & Weishaar, 2003), and using the therapeutic relationship as an important vehicle to bring about corrective emotional experiences (see Nordahl & Nysæter, 2005; Young et al., 2003). Schema therapy seems a viable option for the treatment of DID given its emphasis on the consequences of early childhood neglect and abuse, and the explanation within the therapeutic model of the patient's experience of drastic shifts between states. Unlike the ISSTD guidelines, that tend to reify the idea of severely dissociated identities with amnesic barriers, in the e model these states are not considered as 'compartmentalized' identity states. Schema therapy aims to normalize for the patient the different 'identities' by reframing them as modes (or as parts of modes), which are common in all humans, though different in their degree of intensity, and amnesic barriers are not assumed. The various identities of a patient with DID are regarded as extreme expressions of dysfunctional modes, differing from the modes of patients with PDs in how the patient experiences the mode, thus in degree of experienced dissociation from the other modes (Johnston et al.,

2009; Lobbstaal, van Vreeswijk, & Arntz, 2007; Young et al., 2003).

Treatment effect studies into schema therapy yielded robust results. In comparison to other treatment conditions, in schema therapy relatively low drop-out rates were found for BPD (less than 10% in the first year of treatment) (Farrell, Shaw, & Webber, 2009; Giesen-Bloo et al., 2006; Nadort et al., 2009) and for other personality disorders (Bamelis, Evers, Spinhoven, & Arntz, 2014). An explanation might be that patients in the schema therapy condition highly valued the therapeutic relationship (see for empirical evidence: Spinhoven, Giesen-Bloo, van Dyck, Kooiman, & Arntz, 2007). Next, symptoms were found to reduce significantly. After 2–3 years of treatment with schema therapy, 45–90% of the patients recovered, i.e. did not meet criteria of a formal diagnosis anymore (Bamelis et al., 2014; Farrell et al., 2009; Giesen-Bloo et al., 2006). Giesen-Bloo and colleagues (2006) also looked into the effectiveness of schema therapy on dissociative symptoms, using the subscale ‘Paranoid and Dissociative Ideation’ of the Borderline Personality Disorder Severity Index (Arntz et al., 2003). Schema therapy resulted in significant lower scores on the scale, with the effects already apparent after one year of treatment. However, as this subscale is a combination score, it was unclear whether this effect is evident in dissociative symptoms, paranoid ideation symptoms, or both. Moreover, DID patients were excluded from this study, so it remains unknown whether schema therapy (ST) is effective in this specific group of patients as well.

### 1.3. The present study

Farrell and Shaw adapted their ST treatment, originally developed and tested in BPD (Farrell & Shaw, 2012; Farrell et al., 2009; Reiss, Lieb, Arntz, Shaw, & Farrell, 2014), to meet the needs of DID patients. They piloted this adaptation in six inpatients suffering from DID. The positive clinical observations of this effort led to the development of a detailed standardized protocol of schema therapy for DID (Shaw, Rijkeboer, Huntjens, Arntz, & Farrell, 2014). Central in this treatment is the acknowledgment and validation of both the patient’s subjective experience of alternating senses of self, sense of agency, and of differential identity functioning, and the subjective experience of (inter-identity) amnesia, whilst at the same time compartmentalization of identities is not assumed. Early in treatment patients are educated on the various modes, the function of shown behaviours when in certain modes, and the basic emotional needs that drive these modes. Gradually identities are grouped by their function, constantly focusing

on the underlying needs. The adaptations to the original schema therapy protocol in order to treat DID patients include the following. First, there is a much slower pace overall. Patients have to adjust to this model that is sometimes very different from what they have learned about their pathology so far. Also, patients are intensely vulnerable, with frequent dissociative reactions and extreme avoidant behaviour. In order to keep the patient in control, the therapist constantly needs to slow down the process, much more than in the treatment of BPD. Next, several techniques are added to help patients stay focused in the present reality. Also, metaphors and stories are provided to help patients understand and validate their needs, feelings, thoughts, and behaviours, thus normalizing these. Moreover, aggressive, critical modes are dealt with more patiently than in BPD treatment. Close attention is paid to their function and their needs are validated, followed by education on how messages of abusive family members or acquaintances get internalized. Whereas the actual aggressive actions are stopped during the session, patients in this mode are gradually invited to use their strength to get rid of this ongoing victimization. Furthermore, the technique imagery rescripting is cut into small steps, in order to be able to start with the processing of traumatic experiences relatively early in therapy. Also patients are helped to gradually overcome cognitive avoidance, a central characteristic of DID (see Huntjens, Wessel, Hermans, & van Minnen, 2014), by the consistent use of experiential techniques, which form an important ingredient of schema therapy. Therapists need to be aware not to give in to the inclination to rescue the patient; next to a warm and empathic attitude they need to set limits and be firm in helping the patient to step-by-step break through the avoidance. Finally, there is a strong emphasis on relaxing activities and other positive experiences, and the progress (successes) in therapy is regularly evaluated with the patient, much more so than in the treatment of BPD.

The aim of the present study is to critically test this treatment protocol in DID patients. Whereas RCTs are generally considered the ‘gold standard’ for testing therapy effectiveness, there are limitations with respect to feasibility, costs, and external validity (e.g. Hawkins, Sanson-Fisher, Shakeshaft, D’Este, & Green, 2007). Therefore, and given the lengthy treatment of these patients, as a powerful alternative we use a multiple baseline case series design (Onghena, 2005). Multiple baseline case series fit with daily practice more closely than RCTs (Kazdin, 2011). There is also an ethical advantage: in comparison to RCTs, less patients have to be included. More specifically, we utilize a multicentre, non-concurrent multiple baseline design. Different baseline lengths are determined

before the start of the study. When a patient is included, he/she is randomly assigned to one of the predetermined baseline lengths. The baseline condition consists of a waitlist control period. Patients complete weekly assessments in this period, but do not receive any psychotherapy. Advantages of this approach are (a) patients serve as their own controls and (b) variation in baseline lengths offers the possibility to differentiate between time effects and experimental effects of the treatment. We also included an education condition. By adding this condition (i.e. developing an idiosyncratic case-conceptualization and explaining the therapy model), it is possible to control for the effect of attention, thus increasing the power of the design (see Arntz, Sofi, & van Breukelen, 2013). No treatment effects are expected in this phase. Baseline observations are carried out and, after an education phase, the treatment is implemented. Observations are continued throughout the intervention phase. Every two weeks, dissociative and posttraumatic symptoms are measured. Additionally, various pre-, post-, six-, and 12-month follow-up measures are included, encompassing an assessment of the presence of DID, trait dissociative symptoms, comorbid symptomatology, and global symptomatic distress.

## 2. Methods

### 2.1. Participants

Ten DID outpatients are recruited in several community mental health institutes in the Netherlands. The inclusion criteria are (1) a main diagnosis of DID, (2) age between 18 and 60 years, and (3) Dutch literacy. Exclusion criteria are (1) mental retardation ( $IQ < 80$ ), (2) a current drug/alcohol dependency, (3) acute suicide risk, (4) present florid psychotic episodes, (5) previous schema therapy, and (6) completed trauma-focused treatment. Other comorbid syndrome or personality disorders are allowed, as is medication use (this is monitored throughout the treatment) and ongoing sexual/physical abuse.

### 2.2. Intervention

Treatment consists of two individual sessions a week for 160 sessions, followed by 40 individual sessions once a week, with each session lasting 50 minutes. After treatment, patients receive six monthly booster sessions. The treatment is theoretically consistent with the model described in Young et al. (2003), and adapted for the specific treatment needs of DID patients. For this purpose, a treatment protocol was developed that identifies the goals of treatment,

describes the various techniques, and contains a workbook of patient materials (Shaw et al., 2014). Patients are not allowed to receive concurrent additional psychological treatment.

### 2.3. Treatment integrity check

All participating therapists are well trained and licensed cognitive behavioural therapy (CBT) and ST therapists. To optimize treatment integrity, therapists received a two-day training in which the treatment protocol for DID was critically discussed and practiced. Furthermore, during the study the therapists are supervised monthly by the third author in subgroups of maximal five therapists via video conferencing. Also, peer supervision sessions are held every month via video conferencing in the same subgroups. Finally, all therapy sessions are recorded on audiotape. At random, tapes will be selected and rated for treatment integrity by independent raters using a treatment adherence scale.

### 2.4. Study design and procedure

Patients are recruited from community mental health care centres and receive written study information. After informed consent, diagnosis is independently verified by a trained clinician by taking the SCID-D-R. Hereafter, a second independent expert on DID diagnostic assessment provides a second opinion in each case, based on the interview recordings of the SCID-D-R, and a written report of Structured Clinical Interviews for DSM-IV Axis I and Axis II disorders (SCID-I and SCID-II). If both agree on a formal diagnosis of DID, the patient is included, baseline assessment is completed, and the patient is assigned to a participating therapist.

Ten possible baseline lengths are selected beforehand (i.e. 11 weeks, up to 20 weeks) and divided in two pools, one consisting of the five shortest baseline lengths and the second of the five longest baselines. When a patient agrees to participate, a baseline length is randomly selected (without replacement) from a randomly selected pool. When a second patient is included at the same site, a baseline length is randomly selected from the pool that was not used before at the site. At the end of the baseline phase, an education phase starts with a fixed length of eight weeks for every patient, encompassing 16 sessions in which an idiosyncratic case-conceptualization is made, and the patient is educated on the schema mode model. After this, the intervention phase starts. Next, there are 160 sessions twice a week, after which the frequency is reduced to one session a week for 40 sessions. After treatment patients receive six monthly booster sessions. All patients complete outcome measures on state

dissociative symptoms and PTSD symptoms once a week in the baseline and education phase, and once every two weeks in the intervention phase. In addition, they complete several other outcome measures (i.e. presence DID, trait dissociative symptoms, comorbid symptomatology, and global symptomatic distress) at the start of the baseline phase, start of the education phase, start of the intervention phase, and after that every six months until the end of treatment. After treatment, there is a first follow-up measurement right after the booster sessions (i.e. six months after treatment), and a second follow-up measurement one year after treatment (see Table 1 for detailed overview of assessments). No additional treatment is delivered during the follow-up period, unless this is deemed clinically necessary (i.e. in case of acute crisis the emergency procedure of each clinical site is followed). To avoid therapist effects, each participating therapist only treats one patient. Participants receive a financial compensation of 150 euros for participation in the assessments.

## 2.5. Measures

### 2.5.1. Diagnostic assessments

**2.5.1.1. SCID-D-R, SCID-I, and SCID-II.** The diagnosis DID is verified with the SCID-D-R (Steinberg, 1994, 2004; also see Boon & Draijer, 1993). The SCID-D-R assesses five symptom clusters (depersonalization, derealization, identity confusion, identity fragmentation, amnesia) and is considered the gold standard instrument for the diagnosis of dissociative disorders. Boon and Draijer (1993) assessed the Dutch version and reported an excellent interrater reliability for presence versus absence of a dissociative disorder and for type of dissociative disorder. The interview is repeated at the end of treatment, and at every follow-up.

The Structured Clinical Interviews for DSM-IV Axis I and Axis II disorders (SCID-I and SCID-II; First, Gibbon, Spitzer, & Williams, 1997; First, Spitzer, Gibbon, & Williams, 1996; Lobbstaël, Leurgans, & Arntz, 2011; Van Groenestijn, Akkerhuis, Kupka, Schneider, & Nolen, 1999; Weertman, Arntz, & Kerkhofs, 2000) with excellent psychometric properties were used to assess DSM-IV syndrome disorders and personality pathology.

### 2.5.2. Baseline assessments

At baseline, patients complete an assessment of severity of childhood trauma and neglect, and provide background information (e.g. nationality, marital status, level of education, terms of employment, religion).

Severity of childhood trauma and neglect is assessed with a 28-item brief Childhood Trauma Questionnaire (CTQ-SF; Bernstein et al., 2003).

**Table 1.** Assessment per measurement moment.

Measure	Method	T0	T1	T2	T3	T4–				
						T6	T7	T8	T9	
<b>Baseline</b>										
Structured Clinical Interview for Dissociative Disorders (SCID-D-R)	Int	X								
Clinical Diagnostic Interview (SCID-I)	Int	X								
Clinical Diagnostic Interview (SCID-II)	Int	X								
Childhood Trauma Questionnaire (CTQ-SF)	SR	X								
<b>Primary outcome</b>										
Dissociation Tension Scale (DTS), assessment weekly in baseline phase and education phase, every two weeks thereafter until end of treatment	SR		X	X	X	X	X	X	X	X
Structured Clinical Interview for Dissociative Disorders (SCID-D-R)	Int	X					X	X	X	
<b>Secondary outcome</b>										
PTSS Symptom Scale (PSS-SR), assessment weekly in baseline phase and education phase, every two weeks thereafter until end of treatment	SR		X	X	X	X	X	X	X	X
Multidimensional Inventory of Dissociation (MID)	SR	X	X	X	X	X	X	X	X	X
World Health Organization Disability Assessment Schedule (WHODAS)	SR	X	X	X	X	X	X	X	X	X
Short Schema Mode Inventory (SMI)	SR	X	X	X	X	X	X	X	X	X
Progress in Treatment Questionnaire – therapist version (PITQ-t)	SR					X	X			
Progress in Treatment Questionnaire – patient version (PITQ-p)	SR	X	X	X	X	X	X	X	X	X
Dissociative Beliefs about Memory Questionnaire (DBMQ)	SR	X	X	X	X	X	X	X	X	X

Int = interview, SR = self-report, T0 = baseline, T1 = baseline-start, T2 = baseline-end = education-start, T3 = education-end = intervention-start, T4–T6 = every 40 sessions during intervention, T7 = intervention-end, T8 = follow-up after six months of booster sessions, T9 = follow-up one year after end of treatment, six months after end of the booster sessions.

Subscales determine emotional abuse, emotional neglect, sexual abuse, physical abuse, and physical neglect, each scale consisting of five items plus an additional three-item minimization/denial scale. Items are scored on a 5-point Likert scale, reflecting the frequency of maltreatment experiences (range: never true to very often true). The internal consistency, convergent, and discriminant validity of the instrument were well supported (Bernstein et al., 2003; Thombs, Bernstein, Lobbstaël, & Arntz, 2009).

### 2.5.3. Outcome assessments

The *primary outcome* is the Dissociation Tension Scale (DTS; Stiglmayr et al., 2010), assessing psychosomatic and somatoform dissociative symptoms in the past week. The DTS is a 21-item self-report measure of dissociative symptoms experienced in the past week. Participants are asked to rate the intensity using a Likert scale ranging from 0 to 9. The Dutch version was generated using standard translation and back-translation procedures. Discrepancies in the translations were then resolved in dialogue with the author of the original instrument.

Additional primary outcome measures are the assessment of diagnosis of DID using the SCID-D-R (Steinberg, 1994, 2004; also see Boon & Draijer, 1993) and assessment of patient dropout.

### 2.5.4. Secondary outcomes

**2.5.4.1. PTSD Symptom Scale Self-Report (PSS-SR).** Comorbid PTSD symptoms are assessed with the PSS-SR (Foa, Riggs, Dancu, & Rothbaum, 1993; also see Engelhard, Arntz, & van Den Hout, 2007), a 17-item self-report instrument. Because this measure is taken every two weeks, the instruction was adapted to refer to symptoms experienced in the past week. Respondents rate the frequency of each symptom on a 4-point Likert scale ranging from 0 (not at all) to 3 (five or more times per week/almost always). The English (Foa et al., 1993) and Dutch versions (Engelhard et al., 2007) have good psychometric properties.

**2.5.4.2. Multidimensional Inventory of Dissociation (MID).** Pathological dissociation is assessed with the MID (Dell, 2006a, 2006b; Dell & Lawson, 2009). The MID is a comprehensive 218-item self-report instrument (168 dissociation items, 50 validity items). The items are rated on a 11-point Likert scale that ranges from 0 (never) to 10 (always). The scale provides a summary score between 0 and 100. The MID has demonstrated adequate reliability and validity (Dell, 2006a; Mueller-Pfeiffer et al., 2013).

**2.5.4.3. World Health Organization Disability Assessment Schedule 2.0 (WHODAS 2.0).** To capture functioning and disability in daily life, the WHODAS 2.0 (36-item version; World Health Organization, 2000) is used. This measure has been recommended for determination of functional decline secondary to psychiatric illness by the DSM-5. The WHODAS examines activity limitations and restrictions for six different tasks: (1) understanding and communication; (2) self-care; (3) mobility (getting around); (4) interpersonal relationships (getting along with others); (5) work and household roles (life activities); and (6) community and civic roles (participation). Items are rated for the extent of difficulty doing the activity in the past 30 days on a 5-point scale (none,

mild, moderate, severe, extreme/cannot do). The WHODAS 2.0 has been examined in several different populations and showed good psychometric properties (Üstün et al., 2010).

**2.5.4.4. Schema Mode Inventory (SMI).** Schema modes are assessed using the SMI (Lobbestael, van Vreeswijk, Spinhoven, Schouten, & Arntz, 2010). The SMI consists of 118 items and 14 schema mode scales (e.g. vulnerable child mode, angry child mode, detached protector). Items are rated according to frequency on a 6-point scale from (almost) never to always. The psychometric results indicate that the short SMI is a valuable measure that can be of use for mode assessment in schema focused therapy (Lobbestael et al., 2010).

**2.5.4.5. Dissociative Beliefs about Memory Questionnaire (DBMQ).** Beliefs about memory functioning are indexed using the newly developed 16-item Dissociative Beliefs about Memory Questionnaire; Huntjens, & Dorahy, 2018). As recent studies of inter-identity amnesia in DID suggest that reported memory problems in DID are not the result of impaired coding and/or retrieval functioning, but rather may result from metacognition, this instrument assesses meta-memory beliefs related to dissociative experiences with 16 items and four subscales (Fragmentation, Fear of Retrieval of Negative Events, Amnesia, and Lack of Self-Reference) using a 1 (not at all/not applicable) to 5 (very much) scale. Preliminary analyses have indicated good psychometric properties (Huntjens & Dorahy, in preparation).

**2.5.4.6. Progress in Treatment Questionnaire (PITQ).** Finally, progress in treatment is determined using the Progress in Treatment Questionnaire, consisting of a part to be completed by the therapist (PITQ-t) and a part to be completed by the patient (PITQ-p) (Schielke, Brand, & Marsic, 2017). This questionnaire was specifically developed for treatment research in dissociative disorders and assesses (therapist ratings of) the patients' ability to safely and effectively manage their emotions, symptoms, and relationships. Each item offers 11 response options ranging from 0% (never) to 100% (always) in 10% intervals. In the current study, both the PITQ-t is used and a selection of six items from the PITQ-p specifically referring to the integration of dissociative identities. The Dutch version was generated using standard translation and back-translation procedures. Discrepancies in the translations were then resolved by dialogue with the author of the original instrument. Both the PITQ-p and the PITQ-t demonstrated good internal consistency and evidence of moderate convergent validity in relation to relevant established measures (Schielke et al., 2017).

## 2.6. Statistical analysis

To assess the difference between the baseline and intervention phase, a mixed regression approach will be used, applied successfully in previous comparable case series studies (Arntz et al., 2013; Brewin et al., 2009; Van Den Noortgate & Onghena, 2003; Videler et al., 2017). To determine pre- to post-treatment individual change, a Reliable Change Index (Jacobson & Truax, 1991) will be calculated for instruments for which appropriate normative data are available.

## 3. Discussion

DID is a highly debated disorder with disagreement on the aetiology (including the relation to childhood trauma), the diagnosis, and the treatment of the disorder. Whereas consensus-based treatment guidelines are lacking, the practice-based expert DID guidelines forwarded by the ISSTD (2011) advocate a phase-based approach to treatment. However, empirical evidence supporting this approach is scarce and of low quality. Hence, the field is in need of methodologically stronger effectiveness studies. Moreover, there is ample room for improvement in the treatment of these patients, given the long mean treatment length, the dropout rates, and relatively large percentage of patients not moving beyond the phase of establishing safety and symptom stabilization.

The goal of the current study is to provide a first test of the effectiveness of a manualized alternative treatment approach for DID (i.e. schema therapy) with the use of a methodologically sophisticated design in the form of a non-concurrent experimental multiple baseline design. To this end, a treatment protocol was designed, describing the use of schema therapy in DID. The primary outcome are dissociative symptoms, presence of DID diagnosis, and patient dropout. Secondary outcome measures include measures of posttraumatic symptoms, trait dissociative symptoms, comorbid symptomatology, daily functioning, progress in treatment, metamemory beliefs, and mode functioning. Strengths of the treatment approach forwarded include: (1) it is based on an evidence-based therapy for patients with a background of severe childhood trauma in childhood, the latter being considered by many as the main etiological cause of DID, (2) there is a broad focus covering a wide array of consequences following childhood trauma, including posttraumatic complaints and personality pathology, (3) a shorter treatment length, compared to current ISSTD guidelines, and earlier active trauma focused treatment ingredients (i.e. compared to a relatively long phase aimed purely at

establishing safety and symptom stabilization), (4) an emphasis on overcoming cognitive avoidance, a hallmark characteristic of DID (see Huntjens et al., 2014), and finally, (5) the approach is in agreement with recent findings from experimental memory research on inter-identity amnesia. Acknowledging the subjective experience of patients, the treatment approach forwarded in this study considers the personality states in DID as different emotional, behavioural, and cognitive states of one underlying unified identity.

Despite the controlled experimental design, the relatively small number of patients included limits the generalizability of the study results. This study therefore serves as a natural first investigation of the effectiveness of schema therapy for DID. It should be replicated in larger samples and other settings. Furthermore, one might argue that a possible limitation of this study treatment protocol is that DID is taken as a disorder of self-understanding instead of involving discrete compartmentalized parts with relative autonomous functioning. Some clinical experts consider DID to involve discrete, personified behavioural states or 'biopsychosocial action systems' that take 'executive control of the person's body and behaviour' (Van der Hart, Nijenhuis, & Steele, 2006). In the current approach, whereas the patient's experience of fragmentation is acknowledged and validated, we start from the premise of a single person with subjectively divided self-aspects. This agrees with the guidelines of the ISSTD (2011) where clinicians are discouraged from using terms that would reinforce a belief that alternate identities in DID are separate persons. Also, experts acknowledge: 'We do not disagree that DID is in part a disorder of self-understanding. Clearly those with DID have the inaccurate idea that they are more than one person' (Dalenberg et al., 2012, p. 568). We thus take a more trans-diagnostic model as a starting point, emphasizing common pathways comprised of partly overlapping clinical syndromes such as complex PTSD, dissociative disorders, and borderline phenomena (see Şar, 2017).

Finally, and most importantly, the results of this study might help to ameliorate treatment for DID patients, a group of patients for which, at present, no evidence-based treatment is available and very much in need of effective and feasible clinical help. Evidence-based treatment is a necessary prerequisite for the formulation and acceptance of evidence-based consensus treatment guidelines for this controversial disorder.

## Disclosure statement

No potential conflict of interest was reported by the authors.

## Funding

This work was supported by Fonds Nuts Ohra under Grant 1405-062.

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