Schema Therapy in adolescents with externalizing behavior problems:

Bridging theory and practice

Marjolein van Wijk-Herbrink

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Van Wijk-Herbrink, Marjolein Francisca. Schema Therapy in adolescents with externalizing behavior problems: Bridging theory and practice.

ISBN: 978-94-6295-896-8

Cover illustration by Hans van den Merkhof; Cover design by Proefschriftmaken.nl
Production: Proefschriftmaken | www.proefschriftmaken.nl

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Proefschrift

ter verkrijging van de graad van doctor aan de Universiteit Maastricht,
op gezag van de Rector Magnificus, Prof. dr. Rianne M. Letschert,
volgens het besluit van het College van Decanen, in het openbaar te verdedigen
op donderdag 26 april 2018 om 12.00 uur

door
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The studies presented in this dissertation have been financially supported by the Conrisq Group

Voor mama

CONTENTS

Chapter 1

General Introduction

PERSONALITY DISORDERS AND BEHAVIOR PROBLEMS IN ADOLESCENTS

The diagnosis of personality disorders (PDs) in adolescence in clinical practice is still controversial, despite accumulative evidence for both validity (Bernstein et al., 1993; Kongerslev, Chanen, & Simonsen, 2015; Levy et al., 1999; Kaess, Brunner, & Chanen, 2014) and prevalence of PDs in adolescents (Feenstra, Busschbach, Verheul, & Hutsebaut, 2011; Grilo et al., 1998; Johnson, Bromley, Bornstein, & Sneed, 2006; Westen, Shedler, Durett, Glass, & Martens, 2003). Clinicians are hesitant to diagnose PDs in adolescence because it is a stage of instability, because normal adolescent characteristics may be confused with PD pathology, and because they perceive a PD diagnosis as stigmatizing (Laurenssen, Hutsebaut, Feenstra, Van Busschbach, & Luyten, 2013). Supporting this position, studies have shown that the prevalence of PDs is slightly higher in early adolescence than in mid-adolescence and adulthood (Bernstein et al., 1993), and that PD traits decline during adolescence (Johnson et al., 2000). On the other hand, these declines in PD traits in adolescence are as rapid as in early adulthood (Johnson et al., 2000), and personality stability and personality change coexist throughout the lifespan (Newton-Howes, Clark, & Chanen, 2015). Furthermore, the stability of a PD diagnosis during adolescence is comparable to the stability of PDs in adults (Johnson et al., 2000; Cohen et al., 2005). PDs in adolescence are associated with poor functioning and great impairment well into adulthood (Skodol, Johnson, Cohen, Sneed, & Crawford), which also underscores the need and potential benefits of early diagnosis. The Diagnostic and Statistical Manual of Mental Disorders (DSM 5; American Psychiatric Association, 2013) states that PDs are usually recognizable in adolescence, and that the PD traits must be present for at least one year for a diagnosis in adolescents.

PDs often co-occur with other mental disorders in adolescence, such as emotional and behavioral disorders (Cohen, Crawford, Johnson, & Kasen, 2005; Crawford et al., 2008; Feenstra et al., 2011; Speranza et al., 2011). In particular, problematic behaviors (e.g., impulsivity or aggression) may be misleadingly diagnosed as disruptive behavior disorders, only to be relabeled as personality pathology in adulthood (Chanen & Thompson, 2014). It could be argued that failure to diagnose PDs in adolescents is a missed opportunity for early intervention. Early intervention, during a period when PD traits are more flexible and malleable than in adults, could potentially mitigate a variety of negative outcomes associated with PDs (e.g., depression, suicide, criminality, social impairment), and could prevent the development of more chronic patterns of problematic behavior (Chanen & McCutcheon, 2013; Fonagy et al., 2015).

EVIDENCE-BASED TREATMENTS FOR PERSONALITY DISORDERS

Evidence based interventions for PDs in adults include Dialectical Behavior Therapy (DBT; Linehan, 1993), Mentalisation Based Treatment (MBT; Allen & Fonagy, 2006), and Schema Therapy (Young, Klosko & Weishaar, 2003). DBT and MBT have both been

adapted for adolescents (DBT-A and MBT-A), and focus primarily on ameliorating Borderline PD symptoms, in particular self-harming behaviors. Research has shown that, in adolescent patients with (traits of) Borderline PD, DBT-A and MBT-A are more effective for reducing self-harm than non-manualized treatment as usual.

ST is as an integrative therapy that, unlike DBT and MT, does not have a limited focus on certain PDs or PD traits. Studies have found evidence for the effectiveness of ST in adult patients with a broad range of PDs. Most research has been conducted on patients with Borderline PD, for which randomized controlled trials have demonstrated ST to be clinically effective and cost-effective (Asselt et al., 2008; Farrell, Shaw, & Webber, 2009; Giesen-Bloo et al., 2006; Nadort et al., 2009). Furthermore, randomized controlled trials have demonstrated the clinical effectiveness of ST with outpatients with Cluster C, Narcissistic, and Paranoid PDs (Bamelis, Evers, Spinhoven, & Arntz, 2014), and with forensic inpatients with antisocial behavior and externalizing PDs, such as Antisocial, Narcissistic, Borderline, and Paranoid PDs (Bernstein et al., 2017).

Although the effectiveness of ST with adults has repeatedly been demonstrated, research is still scarce with respect to adolescent populations. One multiple case study has found promising effects of ST for adolescents with PD traits and mood disorders (Roelofs et al., 2016). In this study, four outpatients received weekly group ST sessions plus weekly or two-weekly individual ST sessions. Additionally, their parents received separate parent-group sessions. All patients improved with respect to ST-related constructs (i.e., early maladaptive schemas and schema modes), and some patients also improved with respect to quality of life and symptoms of psychopathology.

THEORY UNDERLYING SCHEMA THERAPY

Central to ST are constructs of early maladaptive schemas (EMSs), schema coping, and schema modes (Young, Klosko, & Weishaar, 2003), see Figure 1. EMSs are persistent dysfunctional patterns of emotions, cognitions, memories, and bodily sensations that influence one's view on the self, others, and the world. They usually develop in (early) childhood through the interaction of the child's innate temperament and adverse experiences (e.g., neglect, abuse, hostility, criticism), or when the child grows up in an environment that otherwise fails to meet his or her core emotional needs. For example, when a child is repeatedly mistreated, he or she may develop a strong and persistent belief that other people have bad intentions, and that they will eventually do him or her wrong (EMS Mistrust). EMS is a trait-like construct that is considered to be at the core of chronic clinical and personality disorders (Lobbestael, van Vreeswijk, & Arntz, 2008).

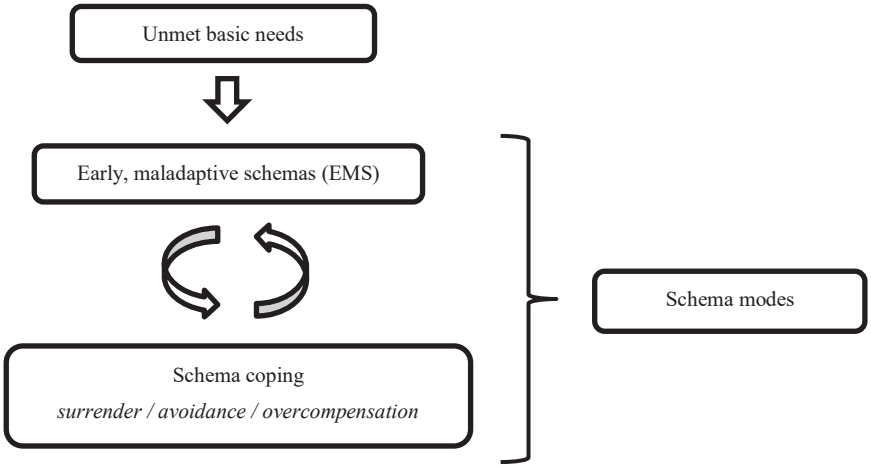


Figure 1. Schema theory. Failure to meet a child's basic needs may lead to early, maladaptive schemas (EMS). These EMSs are dealt with through surrendering, avoidant, or overcompensatory coping responses, which, in turn, will reinforce EMSs. Specific combinations of EMSs and coping responses result in schema modes, also referred to as sides of a person.

When EMSs are triggered, they evoke negative emotions that can be dealt with through various coping responses. Young and colleagues (2003) distinguished three dysfunctional coping styles: surrender, avoidance, and overcompensation. Surrender refers to giving in to the EMS in a helpless, passive, or dependent way; avoidance entails either avoiding situations that trigger the EMS or avoiding emotions and thoughts associated with the EMS; and overcompensation pertains to doing the opposite of the EMS. Thus, when the Mistrust EMS gets activated, one may feel intense fear and may act submissive to other people (surrender). Or, one may avoid sharing any information about oneself to other people (avoidance). Finally, one may also overcompensate for their feelings of fear and mistrust by mistreating other people. All coping responses are likely to maintain or reinforce the EMS Mistrust: Acting in a submissive manner or avoiding sharing information about oneself may cause other people to disregard one's feelings, which will be interpreted as deliberate, unfair treatment. Mistreating others may cause other people to retaliate, which repeats the experience of being mistreated.

Specific combinations of EMSs and coping responses result in schema modes, which are transient states comprising emotions, cognitions, and behaviors. For example, the EMS Mistrust combined with a surrendering coping style may activate a state in which one feels desperate, anxious, and helpless (Vulnerable Child mode). The same EMS paired with an avoidant coping style may evoke a state in which one keeps others at a distance and feels disconnected (Detached Protector mode). The combination of the EMS Mistrust with overcompensation may result in a state in which one threatens, intimidates, or attacks others

(Bully and Attack mode). These and other combinations of EMSs and coping styles resulting in specific schema modes have been confirmed by research in a large adult population (Rijkeboer & Lobbestael, 2017). When a schema mode is activated, it dominates other schema modes and determines the patient's current emotional, cognitive, and behavioral state (Young et al., 2003). Changing of the dominant schema mode can occur rapidly, which may account for the affective instability and angry outbursts that are often present in patients with externalizing PDs.

SCHEMA THERAPY IN RESIDENTIAL TREATMENT

Adolescents with both PD traits and behavioral disorders show more psychiatric symptoms and functional impairment than adolescents with behavioral disorders only (Chanen, Jovev, & Jackson, 2007; Levy et al., 1999), and make elevated use of mental health care (Kasen et al., 2007). When risk behaviors become more severe or unmanageable, adolescents may ultimately be admitted to a residential treatment center (Chor, McClelland, Weiner, Jordan, & Lyons, 2012). Residential treatment offers 24-hour milieu therapy with specialized, multidisciplinary mental health treatment and residential school services. The level of restrictiveness may vary from "open" facilities (i.e., voluntary admittance) to high secure facilities with court-ordered referrals. Decisions on the level of restrictiveness are usually based on severity of behavior problems and treatability of the adolescent patient, with high secure facilities being the option of last resort (de Lange, Addink, Haspels, & Geurts, 2015). Meta-analytic and review studies have demonstrated positive effects of residential treatment on emotional and behavior problems (Hair, 2005; Knorth, Harder, Zandberg, & Kendrick, 2008), especially when evidence based interventions are provided within the residential setting (De Swart et al., 2012).

Prevalence of PDs in residential treatment ranges from 36% to 88% (Feenstra et al., 2011; Gosden, Kramp, Gabrielsen, & Sestoft, 2003; Grilo et al., 1998; Kongerslev, Moran, Bo, & Simonsen, 2012; Westen et al., 2003). For those patients with PD traits and disruptive behaviors, the incorporation of ST in their residential treatment could prove effective in ameliorating both personality pathology and behavior problems. Research suggests that improvement in PDs is more likely to lead to improvement in other, co-occurring disorders than vice versa (Kongerslev et al., 2015). It could be argued that integrating new ways of perceiving and behaving within the patient's personality increases the chance of long-lasting changes in behavior (Ryan & Deci, 2008).

A great challenge in residential care is for group care workers, who provide the 24/7 treatment, to keep a balance between treatment and control of disruptive behaviors. Severe oppositional and aggressive behaviors may trigger group care workers to impose unnecessary restrictions and exercise excessive power, which will subsequently lead to higher levels of disruptive behaviors (Bastiaanssen, Delsing, Geijsen, Kroes, Veerman, & Engels, 2014; Lipsey, 2009). Such negative feedback loops will hamper successful

treatment. It is of great importance to not only set fair but firm limits, but to also provide warmth and support to patients in residential care (Koren-Karie, Oppenheim, Yuval-Adler, Mor, 2013; Van der Helm, Stams, van Genabeek, & van der Laan, 2012; Van der Helm, Klapwijk, Stams, & van der Laan, 2009). Yet it is difficult for group care workers to strike the right balance, and some studies have shown that patients with the most severe behavior problems receive the least positive attention (Moses, 2000; Wigboldus, 2002).

It is therefore necessary to give training and regular supervision to group care workers in providing fair, but firm limits as well as warmth and support, increasing the effects of residential treatment (Bastiaanssen et al., 2014; McLean, 2013). Recently, Bernstein (2017) developed a team-based intervention, called Safe Path, which uses principles from Schema Therapy to help staff de-escalate problematic behaviors and be responsive to patients' basic emotional needs. Safe Path involves ongoing training and supervision of group care workers in focusing on patients' schema modes and underlying emotional needs, aiming to change personality pathology rather than behavior problems. It has been implemented in several treatment settings for adults and youth, including adult prisons, adult forensic mental health clinics, adult clinical and addiction settings, wards for high risk forensic youth, and child protective services supporting youth returning to the community after discharge from secure residential care (Bernstein, van Oorsouw, Candel, Clercx, & Alberts, 2017).

AIMS AND OUTLINE OF THIS DISSERTATION

This dissertation has two aims: (1) testing the validity of constructs and theoretical basis of ST in adolescents, and (2) addressing the clinical application and effectiveness of ST with adolescent (in)patients displaying severe externalizing behavior problems, including both individual ST and Safe Path, a milieu-based ST approach. Consistent with these two aims, this dissertation consists of two parts.

Part I: ST Theory in Adolescents

Although there is ample evidence for the validity of EMSs in adolescents (Muris, 2006; Roelofs, Lee, Ruijten, & Lobbestael, 2011; Van Vlierberghe, Braet, Bosmans, Rosseel, & Bögels, 2010), research regarding schema coping and schema modes in adolescents is scarce. ***Chapter 2*** addresses the validity of these constructs in adolescents, as well as the psychometric properties of self-report questionnaires to assess them (Schema Coping Inventory by Rijkeboer, Lobbestael, Arntz, & van Genderen, 2010; Schema Mode Inventory by Young et al., 2007). We hypothesized that the same schema coping styles and schema modes can be distinguished in adolescents as in adults, and that they can be validly and reliably assessed by the self-report questionnaires. We also aimed to test several higher-order models of schema modes, which were based on theory or previous research.

Chapter 3 examines the relationships between the three ST constructs (i.e., EMSs, schema coping, and schema modes) and both internalizing and externalizing behavior problems. In an adolescent sample, we tried to replicate the finding in adults that schema coping styles mediate the relationship between specific EMSs and specific schema modes (Rijkeboer & Lobbestael, 2012). This is an important aspect of the theory underlying Schema Therapy, because it posits an explanatory mechanism for how EMSs lead to emotional states and maladaptive behaviors. From this theory, however, it could also be argued that schema coping styles moderate, rather than mediate, the relationships between specific EMSs and schema modes. Therefore, we also investigated this alternative by testing moderation models. Besides testing the theoretical basis of ST, Chapter 2 addresses whether, and through which mechanisms, EMSs may be associated with different kinds of behavior problems. Some studies have related externalizing behavior problems to specific EMSs that have to do with insufficient self-control and entitlement (Calvete et al., 2005; Tremblay & Dozois, 2009; Muris, 2006; Van Vlierberghe et al, 2010). Other studies have found also other EMSs to predict externalizing problems, for example EMSs that have to do with mistrust, dependence/incompetence, social isolation, and failure to achieve. Some of these EMSs have also been associated with more internalizing problems, such as depression or anxiety (Muris, 2006; Calvete, Orue, & Hankin, 2015), so it is not clear whether specific (sets of) EMSs predict specific types of behavior problems, or whether the same EMSs may predict different kinds of behavior problems through more complex mechanisms. We hypothesized that the same EMSs (i.e., EMSs associated with disconnection and rejection) underlie both internalizing and externalizing behavior problems, and that these relationships are mediated or moderated by schema coping styles and schema modes.

Chapter 4 constitutes an experiment investigating whether EMSs influence the occurrence of negative affect and aggression in situations perceived as unfair. Unfairness is the most frequently reported trigger for anger (Shaver, Schwartz, Kirson, & O'Connor, 1987), and the theory underlying ST predicts that EMSs may influence an individual's response to unfair situations. For example, the belief that an unfair situation is deliberately caused by another person may aggravate angry feelings and aggression. We hypothesized that specific EMSs moderate the relationship between perceived injustice, negative affect, and aggression.

Part II: Effectiveness and Clinical Application of ST in Adolescents with Externalizing Behavior Problems

This part of the dissertation addresses first attempts to examine the effectiveness of ST for patients with externalizing behavior problems as well as a description of how to apply ST to this population. ***Chapter 5*** describes a multiple case study investigating the effects of ST with externalizing adolescents in a residential treatment setting. The ST treatment consists of individual ST sessions, family sessions, and a 24/7 treatment milieu based on ST principles. ***Chapter 6*** describes the design of a randomized controlled trial (RCT) we have

been running over the last three years, and currently are still running. ***Chapter 7*** constitutes a study investigating the effects of a milieu-based intervention, called Safe Path, that aims to establish change in aggression, addiction, and antisocial behaviors through ST principles (Bernstein, van Oorsouw et al., 2017). Based on clinical experience and the findings of the first studies of ST with this population, ***Chapter 8*** describes the application of ST with externalizing adolescents. It offers a theoretic framework for professionals, and illustrates the use of several ST techniques.

In ***Chapter 9***, the results of the different studies are summarized and discussed with attention for clinical implications. Furthermore, strengths and implications of this dissertation are discussed, and suggestions for future research are provided. The ***addendum*** addresses the valorization of the findings in this dissertation.

Part I

ST theory in adolescents

CHAPTER 2

Schema coping and schema modes

Van Wijk-Herbrink, M. F., Roelofs, J., Broers, N. J., Rijkeboer, M. M., Arntz, A., & Bernstein, D. P. (2017). Validation of Schema Coping Inventory and Schema Mode inventory in adolescents. *Journal of Personality Disorders*. Advance online publication. http://dx.doi.org/10.1521/pedi_2017_31_295

ABSTRACT

This study investigated whether the Schema Therapy constructs of schema coping and schema modes have validity in adolescents. We examined the validity and reliability of the Schema Coping Inventory (SCI) and an 80-item version of the Schema Mode Inventory (SMI) in a mixed sample of adolescents. Confirmatory factor analyses showed that the first-order factor structures of the SCI and SMI were replicated, but hypothesized higher-order models of the SMI were not confirmed. Instead, we proposed an alternative higher-order model of Internalizing, Externalizing, Overachieving, and Healthy modes. In general, the SCI and SMI scales were able to distinguish the clinical sample from the community sample, and meaningful relationships were found between coping styles, schema modes and behavior problems. In conclusion, our study supports the theorized relationships between schema coping styles, schema modes, and behavior problems in adolescents, and provides initial validation for the SCI and 80-item SMI in adolescent populations.

Keywords: Schema modes; Schema Mode Inventory; Schema coping; Schema Coping Inventory; Adolescents.

BACKGROUND

Schema Therapy (ST) is becoming increasingly popular as a treatment for children and adolescents with personality disorder features (see Loose, Graaf, & Zarbock, 2013). There is substantial evidence for the effectiveness of ST for adult patients (for an overview, see Masley, Gillanders, Simpson, & Taylor, 2012), and recent studies provide preliminary evidence that ST is also effective in adolescents with personality pathology combined with mood problems (Roelofs et al., 2016) or behavior problems (Van Wijk-Herbrink et al., 2018). Although the key constructs of ST (i.e., early maladaptive schemas, schema coping, and schema modes) have been well established in adults (e.g., van Vreeswijk, Broersen & Nadort, 2012), we know little about some of these constructs in adolescents. Constructs that have been validated in adults do not necessarily apply to adolescents, or they may manifest themselves differently. For example, Rijkeboer and de Boo (2010) showed that not all maladaptive schemas that are present in adults could be validated in children. Similarly, the instruments measuring the ST constructs, which were developed for adults, may not be valid in adolescents. We conducted this study to investigate (a) whether the key constructs of ST have validity in a healthy and clinical adolescent sample, and (b) whether the instruments assessing these constructs have adequate psychometric properties in these samples.

The ST constructs of early maladaptive schemas, schema coping, and schema modes are embedded in the schema theory as developed by Young (Young, Klosko, & Weishaar, 2003). Early maladaptive schemas are strong, dysfunctional mental representations of oneself, other people, and the world. These maladaptive schemas are developed in (early) childhood, and stem from a combination of child temperament, insufficient parental sensitivity for the child's needs, and childhood adverse experiences. They are self-perpetuating emotional and cognitive patterns that are deeply anchored, and are reinforced by unhealthy ways of coping with these schemas. Young et al. (2003) defined three unhealthy coping styles in response to maladaptive schemas: Surrender (i.e., giving in to the schema), Avoidance (i.e., avoiding the painful emotions that are associated with the schema), and Overcompensation (i.e., doing the opposite of what the schema evokes). For example, when a schema of Mistrust/abuse ("other people are always out to get me") is triggered, this could be coped with by choosing friends that are likely to mistreat you (Surrender), by avoiding relationships with other people (Avoidance), or by mistreating other people in order to be one step ahead of them (Overcompensation).

Coping responses to triggered schemas are theorized to be reflected in schema modes, which can be considered the active state of early maladaptive schemas. Although the concept of schema modes overlaps with other concepts in the literature (see for example Berne, 1961; Watkins & Watkins, 1997), there are certain features about schema modes that make them unique. Because they integrate both early maladaptive schemas and coping responses, schema modes comprise unique combinations of emotional, cognitive, physiological, and behavioral elements. Young and colleagues (2003) have categorized

schema modes into (a) dysfunctional child modes (i.e., states that are linked to the negative emotions felt in childhood), (b) dysfunctional coping modes (i.e., states that deal with activated schema modes by adopting an unhealthy coping style), (c) dysfunctional parent modes (i.e., states involving self-directed criticism or demands), and (d) healthy modes (the Healthy Adult mode, which makes healthy decisions and acts in a mature way, and the Happy Child mode, which is playful and carefree).

Research has shown support for the theorized relationships between the three key constructs of ST (i.e., early maladaptive schemas, schema coping, and schema modes), confirming that schema coping mediates the relationship between schemas and schema modes (Rijkeboer & Lobbestael, 2012). This enhances our understanding of underlying processes in patients with personality pathology, also implying that the assessment of such constructs in individuals could be valuable. Although the construct and assessment of early maladaptive schemas have been validated in adolescents (Muris, 2006; Roelofs, Lee, Ruijten, & Lobbestael, 2011; Van Vlierberghe, Braet, Bosmans, Rosseel, & Bögels, 2010), the adolescent literature is scarce with respect to schema coping and schema modes. To assess schema coping, the Schema Coping Inventory (SCI) was developed by Rijkeboer and colleagues (Rijkeboer, Lobbestael, Arntz, & van Genderen, 2010). Although other measures of coping in adolescents are available in the literature (see Sveinbjornsdottir & Thorsteinsson, 2008), this instrument is unique in that it is a short measure (only 12 items) assessing the three coping styles as defined by Young and colleagues (2003), which were found to mediate the relationship between schemas ('traits') and schema modes ('states'). In two large adult samples (mainly patients), meaningful relationships were found between these coping styles and measures of various personality disorders (Rijkeboer & Lobbestael, 2016). However, the SCI has not been validated yet in an adolescent population.

For assessing schema modes, only the Schema Mode Inventory (SMI; Young et al., 2007) is available in the literature. Roelofs and colleagues recently adapted the SMI into a version for adolescents (SMI-A; Roelofs, Muris, & Lobbestael, 2015). They found that, in a sample of healthy adolescents, the SMI-A had good factorial validity and internal consistency, and meaningful relations existed between schema modes and early maladaptive schema domains, psychopathology symptoms, and quality of life. This is the first evidence that the mode construct may be valid in adolescents.

The main aim of this study was to validate the constructs of schema coping styles and schema modes, as well as the measures developed to assess these constructs, in both a healthy and a clinical adolescent sample. Therefore, the factor structure, internal consistency, and concurrent validity of the Schema Coping Inventory and a shortened version of the Schema Mode Inventory were investigated in these samples. Rather than the adolescent version of the Schema Mode Inventory developed by Roelofs and colleagues (2015), we used a shorter version of 80 items which may have greater clinical utility. Like the SMI-A, the 80-item version was based on the SMI developed by Young and colleagues (2007). However, the 80-item version contains some items that are not in the SMI-A, as it

was constructed by selecting the five items with the highest factor loadings on the 16 schema modes.

With regard to the Schema Coping Inventory, we expected to find the theorized factor structure of the three unhealthy coping styles. With regard to the Schema Mode Inventory, we expected to distinguish the same schema modes as were previously found in both adult and adolescent populations (Lobbestael, van Vreeswijk, Spinhoven, Schouten, & Arntz, 2010; Reiss et al., 2012; Roelofs et al., 2015). Next, we tried to find a higher-order structure of schema modes. Several higher-order structures can be hypothesized. The most traditional one is Young's theoretical classification of dysfunctional child modes, dysfunctional coping modes, dysfunctional parent modes, and healthy modes. This four-factor model was empirically tested in an adult sample by Lobbestael and colleagues (2010), who found a reasonable fit of this model to their data but concluded that the first-order model was preferable. Keulen-De Vos and colleagues have found another higher-order structure using the 80-item SMI in an adult forensic population (Keulen-De Vos et al., 2015). With exploratory factor analysis, they found a three-factor solution representing internalizing, externalizing, and healthy schema modes. This model is also of conceptual interest, as it is in line with the long tradition of perceiving psychopathology as being either of an internalizing or an externalizing nature (Achenbach, 1966; Krueger, 1999). Moreover, this model may enhance our understanding of the theoretical links between schema coping styles and schema modes, as we would expect an overcompensatory coping style to be related to externalizing modes, and a surrendering coping style to be related to internalizing modes. We decided to test both Young's theory based higher-order structure and the empirically based higher-order structure of internalizing, externalizing, and healthy schema modes, since both models are conceptually meaningful and, so far, both lack sufficient empirical support. With regard to schema coping styles and dysfunctional schema modes, we expected higher scores on these constructs in the clinical sample than in the community sample. Since our clinical sample consisted of adolescents who were in treatment for externalizing behavior problems, we expected higher scores for the clinical sample specifically on overcompensatory coping and on schema modes with an externalizing component (e.g., Enraged Child mode or Bully and Attack mode). Scores on healthy schema modes (Healthy Adolescent and Happy Child) were expected to be higher in the community sample than in the clinical sample.

A final aim of this study was to examine the relationships between schema coping styles, schema modes, and problem behaviors in a first attempt to determine the concurrent validity of these instruments when used in an adolescent population. We hypothesized that associations between these measures exist, because schema coping styles can be a component of schema modes, and because problem behaviors can be inherent to certain schema modes (e.g., externalizing behaviors in a Bully and Attack mode).

METHOD

Participants and Procedure

This study is based on a community sample (n = 577) and a clinical sample (n = 122). Participants in the community sample were recruited from a secondary school in the Netherlands, and participants from the clinical sample were recruited from two residential settings with open and secure treatment groups for adolescents with severe behavior problems. The total sample consisted of 702 adolescents, of which three (all from the clinical sample) were removed from the database due to excessive missing values (>10%) on both the SCI and SMI. The community sample comprised 242 male and 335 female adolescents. Their age varied from 11 to 18 years old (M = 14.4 years, SD = 1.7). The vast majority was Dutch (566 adolescents; 98%), two were from Germany, two were from Turkey, and five were of other origins (from Italy, Armenia, Romania, Iran, and Morocco).

Of the 122 adolescents in the clinical sample, 70 were male and 52 were female. They were between 12 and 18 years old (M = 15.5, SD = 1.2). The majority of them was Dutch (102 adolescents; 84%), four were Moroccan (3%), three were from the Dutch Antilles (2%), two were from Turkey (2%), two were from Suriname (2%), two were from Italy (2%), five were of other origins (from Spain, Syria, Iraq, Iran, and Yugoslavia; 5%), and two adolescents did not specify their origin (2%).

A total of 66.6% of the adolescents in the clinical sample had a chart diagnosis of DSM-IV (American Psychiatric Association, 2000) Disruptive Behavior Disorders (20.6% Conduct Disorder, 28.4% Oppositional-Defiant Disorder, and 17.6% Behavior Disorder Not Otherwise Specified). Also, 57.7% of the charts specified personality pathology or emerging Personality Disorders. Other prevalent chart diagnoses were Substance Abuse Disorder (31.4%), Attention Deficit and Hyperactivity Disorder (25.5%), Autism Spectrum Disorder (18.6%), Post-Traumatic Stress Disorder (17.6%), Reactive Attachment Disorder (16.7%), and Mood Disorders (13.7%; of which 5.9% Depressive Disorder, 5.9% Dysthymic Disorder, and 2.0% Depressive Disorder Not Otherwise Specified). Rare chart diagnoses included Social Anxiety Disorder, Specific Phobia, Eating Disorder Not Otherwise Specified, and Tourette Syndrome (all <1%). The charts also specified intellectual abilities either by an IQ-score or by a qualitative description. In general, the intellectual abilities of the adolescents in the clinical sample were average or just below average, and only three patients were reported to have an IQ well below average (IQ-scores between 70 and 80).

All participants from the community sample gave written informed consent to complete questionnaires about early maladaptive schemas, schema coping, schema modes, and behavior problems. At the residential facilities, the same questionnaires were filled out by the adolescents for clinical purposes, and were generated from patient files (the anonymous use of these data for research purposes was part of written consent for clinical treatment). This procedure was approved of by the Ethical Committee of Maastricht University in the Netherlands.

Instruments

Schema coping. Schema coping was measured by the Schema Coping Inventory (SCI; Rijkeboer et al., 2010). The SCI consists of twelve items that are intended to measure the three unhealthy coping styles: Surrender (e.g., "In case of difficulty, I tend to give up"), Avoidance (e.g., "It is best to switch off your feelings as much as possible"), and Overcompensation (e.g., "I tend to overrule and control others"). The psychometric properties of the SCI have been studied by Rijkeboer and Lobbestael (2016). In order to cross-validate their findings, they determined the factor structure of the SCI in two large adult samples, which consisted mainly of patients. Confirmatory factor analyses yielded the best fit for a three-factor solution, containing four items each. Reliability estimates of the scales were good, Cronbach's alpha ranging from .75 to .86. Moreover, regression analyses revealed meaningful relationships between the coping scales and scales of the Assessment of DSM-IV Personality Disorders Questionnaire (ADP-IV; Schotte et al., 2004).

Schema modes. For the assessment of schema modes, we used the 80-item version of the SMI (Young et al., 2007) and adapted the wording of nine items to make them more comprehensible for adolescents. The 80-item version of the SMI covers 16 schema modes: Lonely Child, Abandoned and Abused Child, Angry Child, Enraged Child, Impulsive Child, Undisciplined Child, Happy Child, Compliant Surrender, Detached Protector, Detached Self-soother, Self-Aggrandizer, Overcontroller, Bully and Attack, Punitive Parent, Demanding Parent, and Healthy Adult. Keulen-De Vos and colleagues (2015) reported good to adequate internal consistency for the scales of the 80-item version in a forensic adult population (Cronbach's alpha: .69-.90).

Problem behaviors. Problem behaviors were assessed through the Youth Self-Report Questionnaire (YSR). The YSR is a world-wide used self-report questionnaire for 11 to 18-year olds, and it has shown to be a reliable and valid instrument for rating emotional and behavioral problems (Achenbach & Rescorla, 2001).

RESULTS

Schema Coping Inventory

Factor structure of SCI. The hypothesized three-factor structure of the SCI was tested with multi-sample confirmatory factor analysis (LISREL 9.1; Jöreskog & Sörbom, 2006). A nested hierarchy of hypotheses about the measurement invariance across the two samples was tested (configural, metric, strong, and strict factorial invariance) to investigate whether the hypothesized three-factor structure was present in both samples and whether mean factor scales can be meaningfully compared between the samples (Gregorich, 2006). For all models, correlations between error variances of the items were fixed to zero, but the

three factors representing the three coping styles were allowed to correlate. Since the Chi-square statistic has severe limitations when used in a large sample size (Hu & Bentler, 1999), the goodness of fit was evaluated by the Root Mean Square Error of Approximation (*RMSEA*), the Non-Normed Fit Index (*NNFI*), the Comparative Fit Index (*CFI*), and the Standardized Root Mean Square Residual (*SRMR*). Hu and Bentler (1999) proposed that *RMSEA* and *SRMR* values below 0.05 are indicative of good fit and values below 0.08 are acceptable. The other fit statistics should be greater than 0.90. Results of the hierarchical multi-sample analyses on the SCI are displayed in Table 1.

Table 1. Goodness-of-fit statistics of hierarchical multi-sample confirmatory factor analyses on the invariance of psychometric properties of the SCI across the community and clinical sample

Fit statistic		Configural invariance	Metric invariance	Strong invariance	Strict invariance
X^2		213.71	254.48	345.74	444.91
df		102	114	126	138
RMSEA		0.056	0.059	0.069	0.080
(90% CI)		(0.046 - 0.067)	(0.050 – 0.069)	(0.061 – 0.078)	(0.072 - 0.088)
NNFI		0.95	0.94	0.92	0.90
CFI		0.96	0.95	0.93	0.90
SRMR	*community*	0.044	0.058	0.059	0.077
	clinical	0.058	0.229	0.233	0.340

Note. RMSEA = root mean square error of approximation; CI = confidence interval; *NNFI* = non-normed fit index; *CFI* = comparative fit index; *SRMR* = standardized root mean square residual.

The fit statistics for the models of configural, metric, and strong invariance were generally good to acceptable, suggesting that in both samples three factors were present, that these factors were associated with identical item sets across the samples, and that the factor means can be meaningfully compared between the samples. For strict factorial invariance, the fit statistics generally were on the threshold of acceptable values, providing only dubious evidence for equality of residual variances across the two samples. In the models of metric, strong, and strict invariance, SRMR values in the clinical sample deviated from the other fit statistics in that they suggested poor fit. However, the contribution of the clinical group to the Chi-square values for these models were relatively large (varying from 39.8% to 53.6%) considering its relatively small contribution to the total sample size (21.1%). So while the parameter estimates were predominantly guided by the community sample (because it contains more participants and therefore more information), most discrepancies were within the clinical sample, pushing up the *SRMR* for this sample. Although all fit statistics slightly deteriorated as the model gets more stringent, there is some evidence for the hierarchical models up to the level of strong factorial invariance. This would suggest that (a) the SCI has the same factor structure in adolescents as was previously found in adults, and (b) meaningful comparisons can be made between the factor means of the community and clinical adolescent samples. The internal consistency of the three SCI scales was considerably higher for the clinical sample

than for the community sample, with Cronbach's alphas ranging from .61 to .67 for the community sample and alphas ranging from .71 to .78 for the clinical sample.

Sample differences on SCI scales. A MANOVA was conducted to test for differences in mean scores on the SCI scales between the community and clinical sample (i.e., group effect). Gender was taken into account as a possible moderating variable. The multivariate test showed a significant group effect, $F(3, 693) = 11.24$, $p < 0.001$, and a significant interaction between group and gender, $F(3, 693) = 11.30$, $p < 0.001$. See Table 2 for the descriptive statistics, univariate test results, and effect sizes. Effect sizes were presented only for significant univariate tests by calculating Cohen's *d*.

The univariate tests showed a significant but very small effect of group on Surrender ($d = 0.16$) with no significant interaction between group and gender, $F(1.695) = 3.28$, $p = 0.070$. Adolescents in the clinical sample scored somewhat higher on Surrender than adolescents in the community sample. A moderate effect of group was found on the subscale Avoidance ($d = 0.50$) with a significant interaction between gender and group, $F(1, 695) = 18.43$, $p < 0.001$. This interaction effect showed that differences between the clinical and community sample were large for girls (girls in the clinical sample scored higher on Avoidance than girls in the community sample, $d = 0.99$), but non-existent for boys. The effect of group on Overcompensation failed to reach significance, but there was a significant interaction effect between group and gender on this subscale, $F(1, 695) = 21.31$, $p < 0.001$. Whereas girls in the clinical sample scored moderately higher on Overcompensation than girls in the community sample ($d = 0.50$), the reverse pattern was found for boys: Unexpectedly, boys in the clinical sample scored moderately lower on Overcompensation than boys in the community sample ($d = -0.43$).

Table 2. Descriptive statistics of the SCI scales and results of univariate F-tests on the effects of population on the SCI scales

Scale SCI	Gender	Community sample *M (SD)*	Clinical sample *M (SD)*	*F*	*p*	*Cohen's d*
SU	Boys	2.54 (1.01)	2.57 (1.38)			
	Girls	2.73 (1.04)	3.17 (1.57)			
	Total	2.65 (1.03)	2.83 (1.49)	4.32	0.038	0.16
AV	Boys	2.82 (1.01)	2.97 (1.37)	0.98	0.323	
	Girls	2.80 (1.07)	3.91 (1.46)	43.92	<0.001	0.99
	Total	2.81 (1.05)	3.37 (1.48)	31.45	<0.001	0.50
OC	Boys	3.66 (1.58)	3.13 (1.45)	10.20	0.002	-0.43
	Girls	3.29 (1.10)	3.85 (1.35)	11.08	0.001	0.50
	Total	3.44 (1.14)	3.44 (1.45)	0.02	0.891	

Note. Univariate F-tests on the effects of population on the scales are only reported for boys and girls separately when the interaction effect between population and gender reached statistical significance. SU=surrender; AV=Avoidance; OV=overcompensation

Schema Mode Inventory

Factor structure of SMI.

First-order model of SMI. We first tested the original structure of the SMI with 16 subscales using LISREL confirmatory factor analysis, allowing the subscales to correlate. Correlations between error variances of the items were fixed to zero. The ratio of items to participants forced us to test this on the whole sample instead of using multi-sample analysis and even then, we had to create item parcels for each participant. Two item parcels were made within each of the hypothesized factors (schema modes), so respectively two and three items were averaged to represent the item parcels of the schema modes.

The goodness-of-fit statistics for the first-order model are displayed in the second column of Table 3 and were generally indicative of a good to acceptable fit. So overall, the schema modes found in previous studies in both adults and adolescents were replicated with the shortened SMI in our mixed adolescent sample. Internal consistency for the subscales (based on SMI items, not on parcels) was excellent to adequate, with a mean Cronbach's alpha of 0.82 (ranging from 0.67 to 0.93; median 0.82).

Higher-order model of SMI. Both hypothesized higher-order models were tested with LISREL confirmatory factor analysis. The results displayed in the third and fourth column of Table 3 indicated poor fit of both models to our data. The conceptual model of Young (2003) with the four factors of dysfunctional child modes, dysfunctional parent modes, dysfunctional coping modes, and healthy modes, showed the poorest fit (e.g., *RMSEA* = 0.174). The model found previously by Keulen-De Vos (2015) also failed to generate acceptable fit statistics (e.g., *RMSEA* = 0.132).

Table 3. Goodness-of-fit statistics of first-order and higher-order Confirmatory Factor Analyses performed on the SMI

Fit statistic	1st order: 16 scales	2nd order: Model Young	2nd order: Model Keulen-De Vos	2nd order: Model EFA	2nd order: Adapted model
X^2	1024.97	2157.97	1321.31	600.73	372.43
df	344	98	101	97	87
RMSEA	0.053	0.174	0.132	0.122	0.098
90% CI	0.050-0.057	0.167-0.180	0.125-0.138	0.112-0.131	0.088-0.108
NNFI	0.95	0.75	0.86	0.88	0.92
CFI	0.96	0.79	0.88	0.90	0.94
SRMR	0.037	0.095	0.080	0.074	0.056

Note. Model EFA = model resulting from the exploratory factor analysis; CI = confidence interval; *RMSEA* = root mean square error of approximation; *NNFI* = non-normed fit index; *CFI* = comparative fit index; *SRMR* = standardized root mean square residual.

We therefore decided to randomly split the sample in half and to perform an exploratory factor analysis on the first half (n = 347) using SPSS version 20, and to use the second half for replication with LISREL confirmatory factor analysis. The exploratory

factor analysis on the first half of our sample was conducted using the principal axis factoring method with oblique rotation. To determine the optimal number of factors to retain, highly accurate approaches such as parallel analysis[1] and the Minimum Average Partial (MAP) test[2] should be favored over more arbitrary rules, such as Kaiser's criterion (retain factors with eigenvalues > 1) and inspection of the scree plot (Hayton, Allen, & Scarpello, 2004; O'Connor, 2000). However, in our case the parallel test and MAP test did not converge. Table 4 shows that the parallel analysis suggested to retain four factors, whereas the MAP test suggested to retain three factors. Examination of the eigenvalues and scree plot showed that Kaiser's criterion suggested a three-factor model, and the scree plot could result in the decision to retain either three or four factors. As Hayton and colleagues (2004) recommended including theory in the factor retention approach, we decided to inspect both the three- and four-factor models, and to let theory and interpretability of the models guide our final decision.

The three-factor solution most closely resembled the proposed model by Keulen-De Vos and colleagues (2015) of internalizing, externalizing, and healthy modes. Nonetheless, there were two deviations from this model. Instead of loading on the externalizing factor, both the Overcontroller and the Self-Aggrandizer mode loaded on the factor that included the hypothesized internalizing modes. This seems counterintuitive, especially for the Self-Aggrandizer mode that represents a state in which one feels and acts superior to others.

Table 4. *Eigenvalues of original dataset as compared to parallel analysis eigenvalues, and MAP test average partial correlations to determine factor retention.*

	Original dataset eigenvalues		Parallel Analysis[a] eigenvalues		MAP test average partial correlations	
Root	Total variance	Common variance	Means	95th Percentile	Squared	Power4
1	9.333	9.054	0.439	0.533	0.059	0.009
2	1.761	1.463	0.351	0.418	0.047	0.006
3	**1.208**	0.896	0.285	0.344	**0.033**	**0.003**
4	0.606	0.289	**0.229**	**0.279**	0.035	0.007
5	0.485	0.155	0.178	0.222	0.040	0.012
6	0.375	0.094	0.133	0.172	0.049	0.015

[a]Parallel Analysis was conducted on 1,000 permutations of the original dataset.

[1] In parallel analysis, the factor variances of the original dataset are compared to variances of factors derived from random data. Factors are retained as long as the variation they explain is higher than their (average or 95th percentile) parallel factor variances from random data (Horn, 1956; Cota, Longman, Holden, Fekken, & Xinaris, 1993). We used the SPSS syntax as provided by O'Connor at https://people.ok.ubc.ca/brioconn/nfactors/nfactors.html.

[2] Velicer's (1976) MAP test involves a principal component analysis, and then computes average squared partial correlations after each component is partialled out. No further components are extracted once the minimum average squared partial correlation is reached. We used the SPSS syntax as provided by O'Connor at https://people.ok.ubc.ca/brioconn/nfactors/nfactors.html.

In the four-factor model, these two modes (and the Demanding Parent mode) loaded on an additional factor, which we interpreted as Overachieving modes (see Table 5). In our opinion, this model was conceptually more meaningful than the three-factor model, as it did not contain any paradoxical factor loadings. Moreover, the additional factor of Overachieving modes makes sense from a developmental perspective, as adolescents are striving to meet societal demands, and pursue dreams and goals for the future. We therefore continued our analyses with the four-factor model.

In this model, only the Self-Soother mode did not have a unique loading above .40 (which was used as a cut-off point in reporting the factor loadings in Table 5) on any of these factors. Instead, it showed weak loadings on both the internalizing and the externalizing factor. Because of the integration of both self-soothing and self-stimulating behavioral tendencies in the mode Self-Soother, this is not surprising and we decided to allow for a double loading of the Self-Soother mode in the confirmatory factor analysis.

Table 5. Schema mode factor loadings on higher-order factors based on exploratory factor analysis

Factors	Factor loadings
Factor 1: Internalizing modes (eigenvalue = 9.3)	
Abandoned Child	0.88
Lonely Child	0.84
Punitive Parent	0.83
Compliant Surrenderer	0.68
Detached Protector	0.57
Factor 2: Healthy modes (eigenvalue = 1.8)	
Happy Child	1.01
Healthy adolescent	0.75
Factor 3: Externalizing modes (eigenvalue = 1.2)	
Enraged Child	0.99
Impulsive Child	0.68
Bully and Attack	0.56
Undisciplined Child	0.55
Angry Child	0.54
Factor 4: Overachieving modes (eigenvalue = 0.6)	
Self-aggrandizer	0.74
Demanding Parent	0.63
Overcontroller	0.45

Note. Only factor loadings above .40 are reported

A confirmatory factor analysis was conducted on the second half of our sample (n = 352) to investigate whether the four-factor solution would be maintained. The goodness-of-fit statistics are provided in Table 3 (column Model EFA) and generally did not demonstrate a good fit, especially because of an unacceptably high *RMSEA* value (0.122). We decided to explore this model further by looking at the modification indices. When conceptually defensible, adaptations were made to the model. Statistically, the

modification indices showed that the strongest improvement of the model could be made by allowing the Angry Child mode (belonging to the externalizing modes) to also load on the internalizing factor. Conceptually, the anger in the Angry Child mode (unlike the Enraged Child Mode) refers to angry feelings inside about unfulfilled needs rather than angry outbursts (i.e., "anger-in" versus "anger-out"; Spielberger, 1991). It is also linked to subjective rejection by another person in one item, so taken together we decided that the double loading was justified. Other modifications comprised allowing for correlated errors between some modes that are conceptually similar or related, such as the Abandoned Child and Lonely Child, Angry Child and Enraged Child, Impulsive Child and Enraged Child, Angry Child and Undisciplined Child, Self-Aggrandizer and Demanding Parent, Punitive Parent and Abandoned Child, and Punitive Parent and Lonely Child.

In total, nine modifications were made, resulting in the goodness-of-fit statistics displayed in the final column of Table 3. Although the *RMSEA* was still higher than desirable, the other fit statistics were acceptable for this adapted model. Internal consistencies of the four factors were excellent to good, with Cronbach's alphas (calculated on the data of the second half of our sample) of 0.87 for Healthy modes, 0.95 for Internalizing modes, 0.92 for Externalizing modes, and 0.82 for Overachieving modes.

Sample differences on SMI scales. To test for differences on the SMI between the clinical and the community sample, a MANOVA was conducted with gender as a second independent variable and the four higher-order factors and separate schema modes as dependent variables. The multivariate test showed a significant group effect, $F(16, 679) = 25.92$, $p < 0.001$, and a significant interaction of group and gender, $F(16, 679) = 3.57$, $p < 0.001$. Descriptive statistics, univariate test results, and effect sizes are reported in Table 6. Cohen's d was calculated only for significant univariate tests as an indicator of the effect size. Interaction effects of group and gender are displayed in Table 7.

Compared to the community sample, adolescents in the clinical sample scored significantly lower on the Happy Child and Healthy Adolescent modes, and significantly higher on all other modes. Effect sizes were medium to large (d = -0.52 to -1.12), except for small effect sizes for the Compliant Surrenderer (d = -0.43), Self-Aggrandizer (d = -0.29), and Demanding Parent (d = -0.20) modes. Significant interaction effects between group and gender were found for all modes but the Abandoned Child, Happy Child, and Healthy Adolescent modes. In general, effect sizes were larger for girls than for boys, and for some modes (Self-Aggrandizer mode, Demanding Parent mode, Overcontroller mode) the effect of group failed to reach significance for boys. These modes were part of the higher-order domain of Overachieving modes, on which indeed no significant group effect was found for boys, whereas the effect was large (d = -0.97) for girls. The effect of group on Internalizing modes was small for boys (d = -0.44) and large for girls (d = -1.03). The effect on Externalizing modes was moderate for boys (d = -0.71) and very large for girls (d

= -1.54). Finally, the effect of group on Healthy modes was large (d = 0.94) and independent of gender.

Table 6. Descriptive statistics of SMI subscales and higher-order scales

SMI		Community *M (SD)*	Clinical *M (SD)*	*F*	*d*
Detached Self-soother	Boys	2.05 (0.93)	2.36 (1.31)	5.07*	-0.27
	Girls	2.13 (0.97)	3.23 (1.13)	55.44**	-1.04
	Total	2.09 (0.95)	2.73 (1.30)	48.50**	-0.56
Internalizing modes	Boys	1.71 (0.66)	2.13 (1.16)	14.97**	-0.44
	Girls	1.82 (0.71)	2.74 (1.05)	66.06**	-1.03
	Total	1.77 (0.69)	2.39 (1.15)	73.15**	-0.65
Abandoned Child	Boys	1.49 (0.78)	1.95 (1.30)	-	-
	Girls	1.60 (0.78)	2.35 (1.26)	-	-
	Total	1.56 (0.78)	2.12 (1.29)	45.10**	-0.52
Lonely Child	Boys	1.66 (0.74)	2.11 (1.28)	13.85**	-0.43
	Girls	1.93 (0.87)	2.79 (1.30)	37.20**	-0.78
	Total	1.82 (0.83)	2.40 (1.33)	49.65**	-0.52
Punitive parent	Boys	1.61 (0.72)	2.04 (1.24)	13.50**	-0.42
	Girls	1.75 (0.77)	2.63 (1.31)	47.61**	-0.82
	Total	1.69 (0.75)	2.29 (1.30)	57.32**	-0.57
Compliant surrenderer	Boys	1.87 (0.77)	2.10 (1.18)	3.67	-
	Girls	1.95 (0.73)	2.62 (0.99)	33.64**	-0.77
	Total	1.91 (0.75)	2.32 (1.13)	29.29**	-0.43
Detached protector	Boys	1.58 (0.67)	2.22 (1.35)	29.78**	-0.60
	Girls	1.55 (0.74)	2.85 (1.26)	111.92**	-1.26
	Total	1.56 (0.71)	2.49 (135)	130.54**	-0.86
Externalizing modes	Boys	2.27 (0.78)	3.01 (1.27)	36.00**	-0.71
	Girls	2.16 (0.71)	3.68 (1.21)	166.02**	-1.54
	Total	2.21 (0.74)	3.30 (1.28)	175.46**	-1.04
Enraged Child	Boys	1.68 (0.88)	2.71 (1.45)	53.91**	-0.86
	Girls	1.45 (0.67)	3.03 (1.54)	160.37**	-1.33
	Total	1.55 (0.77)	2.85 (1.49)	194.21**	-1.10
Impulsive Child	Boys	1.96 (0.81)	2.47 (1.30)	15.99**	-0.47
	Girls	1.87 (0.79)	3.22 (1.23)	109.32**	-1.31
	Total	1.91 (0.80)	2.79 (1.32)	104.72**	-0.81
Bully and Attack	Boys	1.69 (0.66)	2.16 (0.95)	22.01**	-0.57
	Girls	1.46 (0.55)	2.44 (0.99)	109.62**	-1.22
	Total	1.56 (0.61)	2.28 (0.97)	112.04**	-0.89
Undisciplined Child	Boys	2.19 (0.81)	2.57 (1.19)	9.47*	-0.37
	Girls	2.07 (0.73)	3.11 (1.17)	74.54**	-1.07
	Total	2.12 (0.77)	2.80 (1.21)	67.67**	-0.67
Angry Child	Boys	1.75 (0.75)	2.77 (1.37)	65.91**	-0.92
	Girls	1.82 (0.77)	3.40 (1.34)	148.86**	-1.45
	Total	1.79 (0.76)	3.04 (1.39)	207.84**	-1.12
Overachieving modes	Boys	2.27 (0.78)	2.29 (0.97)	0.20	-
	Girls	2.19 (0.68)	3.01 (0.98)	56.50**	-0.97
	Total	2.22 (0.70)	2.60 (1.03)	31.52**	-0.43
Self-Aggrandizer	Boys	2.26 (0.92)	2.16 (1.02)	0.62	-
	Girls	2.03 (0.76)	2.77 (1.18)	36.01**	-0.75
	Total	2.13 (0.83)	2.42 (1.13)	12.99**	-0.29
Demanding Parent	Boys	2.30 (0.85)	2.29 (1.20)	0.01	-
	Girls	2.46 (0.95)	3.04 (1.27)	15.19**	-0.52
	Total	2.39 (0.91)	2.61 (1.28)	8.46**	-0.20
Overcontroller	Boys	2.21 (0.78)	2.43 (1.01)	3.73	-
	Girls	2.09 (0.76)	3.22 (1.02)	89.11**	-1.26
	Total	2.14 (0.77)	2.76 (1.08)	66.88**	-0.66

Table 6 (continued). Descriptive statistics of SMI subscales and higher-order scales

SMI		Community *M (SD)*	Clinical *M (SD)*	*F*	*d*
Healthy modes	Boys	4.55 (0.92)	3.43 (1.31)	-	-
	Girls	4.43 (0.88)	3.56 (1.01)	-	-
	Total	4.48 (0.90)	3.49 (1.19)	106.97**	0.94
Happy Child	Boys	4.46 (1.00)	3.17 (1.27)	-	-
	Girls	4.37 (0.95)	3.28 (1.00)	-	-
	Total	4.41 (0.97)	3.22 (1.16)	136.37**	1.11
Healthy Adolescent	Boys	4.65 (0.97)	3.69 (1.45)	-	-
	Girls	4.48 (0.92)	3.83 (1.16)	-	-
	Total	4.55 (0.94)	3.75 (1.33)	61.27**	0.69

Note. Univariate F-tests on the effects of population on the scales were reported for boys and girls separately only when the interaction effect between population and gender reached statistical significance. * $p < 0.05$. ** $p < 0.001$.

Table 7. Interaction effects of group and gender on schema modes and higher-order factors

SMI		Group x Gender *F*	*p*
	Detached Self-soother	15.00	<0.001
Internalizing modes		10.28	0.001
	Abandoned Child	2.46	0.117
	Lonely Child	4.80	0.029
	Punitive parent	6.82	0.009
	Compliant surrenderer	7.04	0.008
	Detached protector	15.12	<0.001
Externalizing modes		20.66	<0.001
	Enraged Child	8.79	0.003
	Impulsive Child	20.97	<0.001
	Bully and Attack	13.78	<0.001
	Undisciplined Child	14.45	<0.001
	Angry Child	9.61	0.002
Overachieving modes		26.33	<0.001
	Self-Aggrandizer	22.42	<0.001
	Demanding Parent	9.00	0.003
	Overcontroller	30.44	<0.001
Healthy modes		1.67	0.196
	Happy Child	0.86	0.353
	Healthy Adolescent	2.27	0.133

Concurrent Validity of SCI and SMI with each other and with the YSR

To investigate concurrent validity, bivariate correlations were calculated between the scales of the SCI, the subscales and higher-order scales of the SMI, and the YSR scales Internalizing and Externalizing behavior problems to investigate concurrent validity. Because of considerable correlations between the subscales within each instrument, possibly distorting the bivariate correlations, we also calculated partial correlations between SCI scales, SMI higher-order scales, and YSR scales (not SMI subscales because the large number of variables to control for could lead to obscure results). For example, when calculating the partial correlation between Surrender (SCI) and Internalizing behavior

(YSR), we controlled for the other scales of the SCI (Avoidance, Overcompensation), as well as the remaining scale of the YSR (Externalizing behavior). All correlations are displayed in Table 8.

Table 8. Bivariate (and partial) correlations between SCI scales, SMI subscales and higher-order scales, and YSR scales

Scale	SCI Surrender	SCI Avoidance	SCI Overcompensation	YSR Int. behaviors	YSR Ext. behaviors
Detached Selfsoother	.50	.44	.38	.65	.55
Angry Child	.47	.41	.37	.67	.68
SMI Internalizing modes	.66 (.37)	.54 (.16)	.35 (-.18)	.83 (.56)	.57 (-.19)
Lonely Child	.62	.48	.26	77	.45
Punit Parent	.61	.46	.30	.77	.53
Compliant Surrenderer	.66	.50	.37	.75	.46
Detached Protector	.52	.53	.28	.74	.46
Abandoned Child	.61	.46	.27	.76	.46
SMI Ext. modes	.47 (-.16)	.43 (-)	.46 (.19)	.64 (-.17)	.78 (.65)
Enraged Child	.22	.22	.30	.37	.71
Impulsive Child	.38	.34	.43	.49	.66
Bully & Attack	.29	.33	.42	.41	.69
Undisciplined Child	.49	.40	.39	.60	.64
SMI Overach. modes	.56 (-)	.47 (-)	.60 (.42)	.66 (.18)	.53 (-)
Self Aggrandizer	.34	.28	.64	.40	.48
Demanding Parent	.55	.41	.45	.65	.36
Overcontroller	.54	.52	.44	.62	.51
SMI Healthy modes	-.33 (-)	-.25 (-)	- (.13)	-.52 (-.11)	-.35 (-)
Happy Child	-.31	-.24	-.05	-.50	-.40
Healthy Adolescent	-.32	-.24	.03	-.48	-.27
YSR Int. behaviors	.62 (.51)	.44 (.10)	.29 (-)		
YSR Ext. behaviors	.26 (-.21)	.28 (-)	.32 (.24)		

Note. Correlations significant at the 0.001 level are displayed, whereas non-significant correlations are indicated by "–" (non-significant correlations ranged from -.07 to .09). Partial correlations are displayed in brackets. Partial correlations are not calculated for the separate modes of the SMI because the large amount of variables to be controlled for may lead to uninterpretable results. Displayed partial correlations of each scale/domain are controlled for other scales of the same instrument (e.g., surrendering coping controls for avoidant and overcompensatory coping). Int = internalizing; Ext. = externalizing.

Schema coping and schema modes. Overall, bivariate correlations showed positive relationships between dysfunctional coping styles and dysfunctional schema modes, and negative relationships between dysfunctional coping styles and healthy schema modes. Strongest relationships were found between Surrender and Internalizing modes, and between Overcompensation and Overachieving modes. Other statistically significant correlations were found between Overcompensation and Externalizing modes, and between Avoidance and Internalizing modes. The relevance of the partial correlations becomes clear when interpreting the other correlations between the SCI and SMI subscales. For example, although the bivariate correlation counterintuitively suggested a significant

positive relationship between Surrender and Externalizing modes (r = .47), the partial correlation showed that in fact, the unique variance of Surrender (controlled for Avoidance and Overcompensation) contributed negatively to the unique variance of Externalizing modes (controlled for Internalizing, Overachieving, and Healthy modes) (partial r = -.16). The same pattern occurred in the relationship between Overcompensation and Internalizing modes. For other relationships, the bivariate correlation coefficients suggested a significant relationship, whereas the partial correlation coefficient revealed none (e.g., between Surrender and Overachieving modes). On the contrary, the relationship between Overcompensation and Healthy modes unexpectedly turned statistically significant (yet weak) when controlling for the remaining coping styles and dysfunctional schema modes.

Schema coping and behavior problems. We found a relatively large correlation between Surrender and Internalizing behavior problems, even after controlling for the other scales of the SCI and YSR. Other positive associations were found between Overcompensation and Externalizing behavior, and between Avoidance and Internalizing behavior. Although again, based on the bivariate correlations, some other positive relationships appeared to exist between certain scales, partial correlations showed that there was no correlation between their unique variances (i.e., between Avoidance and Externalizing behavior) or this correlation was in fact negative (i.e., between Surrender and Externalizing behavior).

Schema modes and behavior problems. Bivariate correlations of individual schema modes from the Internalizing modes domain were generally larger with Internalizing behavior, than with Externalizing behavior. Similarly, a relatively large positive correlation was found between (the unique variances of) Internalizing modes and Internalizing behavior, whereas the unique variances of Internalizing modes and Externalizing behavior problems turned out to be negatively correlated. The reverse pattern was found for the relationships between Externalizing modes on the one hand, and Internalizing and Externalizing behavior problems on the other. The two modes loading on both the Internalizing and Externalizing modes scales (Detached Self-Soother and Angry Child) showed moderately positive bivariate correlations with both Internalizing and Externalizing behavior problems. There were also moderately positive bivariate correlations between modes belonging to the Overachieving modes scale, and Internalizing and Externalizing behavior problems, but when controlled for other scales only the correlation between Overachieving modes and Internalizing behavior, not Externalizing behavior, was significantly positive yet weak. Individual healthy schema modes correlated negatively with both Internalizing and Externalizing behavior problems, although overall, the unique variance of Healthy modes seemed to be weakly and negatively associated with the unique variance of Internalizing behavior, not Externalizing behavior.

DISCUSSION

This is the first study to provide evidence for the validity and reliability of the SCI and the 80-item version of the SMI in an adolescent population. We found support for the three-factor structure of the SCI in both a community and a clinical adolescent sample by replicating the three coping styles of Surrender, Avoidance, and Overcompensation, which have been previously found in adults. Also, the 16 schema modes of the SMI were replicated in our adolescent sample confirming adult findings. Although hypothesized higher-order models of schema modes were not found, we did find some evidence for an alternative higher-order model of Internalizing, Externalizing, Overachieving, and Healthy modes. With some exceptions, the SCI and SMI scales were able to distinguish between the community and the clinical adolescent samples, and meaningful relationships were found between coping styles, schema modes, and behavior problems. These findings provide initial support for the validity of these constructs and use of the questionnaires in adolescents.

Some caveats to this study should be discussed. For example, although the three coping styles Surrender, Avoidance, and Overcompensation were replicated in both the clinical and community sample, the hierarchical tests of measurement invariance were not unequivocally interpretable. The literature provides some guidance in how to determine whether the next model in the hierarchy should be valued as a good fit. For example, Gregorich (2006) has proposed the use of a Chi-square difference test, and others have suggested that the decrease in CFI should not exceed 0.01 (Wu, Li, & Zumbo, 2007). However, just like the Chi-square test, the Chi-square difference test is very sensitive to sample size (Wu et al., 2007), and the CFI criterion is arbitrary. Inspection of the fit statistics of each model separately suggests that there is at least some evidence for the hierarchical models up to the strong invariance model. These findings should be replicated in community and clinical samples that are more equal in sample size.

Internal reliabilities of the SCI scales were lower in our study than in the adult sample of Rijkeboer and Lobbestael (2016). When the internal reliabilities were calculated for the samples independently, we found larger reliabilities for the scales in the clinical sample than in the community sample. Post-hoc inspection of the inter-item correlations and variances in both samples revealed that the community sample generally showed less variance on the item scores than the clinical sample, which will suppress inter-item correlations and therefore Cronbach's alphas in the community sample.

Internal reliabilities of the SMI subscales were comparable to the ones found previously in adults and adolescents (Lobbestael et al., 2010; Roelofs et al., 2015). Although higher-order models of schema modes may have clinical utility, they have been rarely tested. The four-factor model as developed by Young is based on theoretical and clinical considerations, but it showed poor fit to our data. It should be noted, however, that the grouping of modes in the four sets in this model rather has a conceptual meaning than that it proposes high within-group and low between-group correlations. For example, there

is no theoretical necessity that Child modes should be highly correlated, and the same holds for Coping modes. Thus, the fact that there is a functional similarity between such modes in the ST model has a theoretical meaning, not necessarily implying high co-occurrence.

The alternative model of Internalizing, Externalizing, and Healthy modes also showed poor fit, but subsequent exploratory factor analysis suggested that, in our data, these factors could be supplemented with a fourth factor of Overachieving modes. Although the confirmatory factor analysis of this four-factor model produced a somewhat disappointing *RMSEA*-value, the other fit statistics were good and, moreover, this model makes conceptual and theoretical sense. It includes the distinction between internalizing and externalizing modes, which is consistent with the literature on psychopathology in adolescents. Also, we demonstrated that these higher-order factors were meaningfully related to coping styles and to internalizing and externalizing behavior problems. However, the unsatisfactory RMSEA-value, even after multiple modifications of the model, indicates that replication studies are necessary to investigate whether this four-factor structure can be retained, and whether these four factors (if replicated) are characteristic to adolescents only or are also generalizable to adults. Until then, the first order model is preferred for use in clinical practice.

The additional SMI scale of Overachieving modes included the Self-Aggrandizer, the Demanding Parent, and the Overcontroller modes. The overachieving component is self-evident in the Demanding Parent mode, which represents a state in which one is very high-demanding towards the self and always strives to do more (Bernstein, Arntz, & De Vos, 2007). The other two modes belonging to this scale also include an overachieving element. For the Self-Aggrandizer mode, the corresponding SMI items seem to represent both a (overachieving) state in which one desires to be superior or to achieve more (e.g., "It's important for me to be Number One (e.g., the most popular, most successful, most wealthy, most powerful)"; "I have to be the best in whatever I do"), and an externalizing state in which one gets angry when other people don't respect one's superiority ("I get irritated when other people don't do what I ask them to do"; "I manipulate to achieve my goals"). Adolescents may be more prone to score higher on the superiority items than adults, as these items are also associated with the important developmental task of identity formation in adolescence.

The third mode belonging to the Overachieving modes was the Overcontroller mode. The Overcontroller mode is known to represent one of two options: a Suspicious Overcontroller mode in which one is always on one's guard for hidden threat (Bernstein et al., 2007), or a Perfectionistic Overcontroller mode, in which order, repetition or ritual is used to avoid making mistakes (Arntz, 2010). In another version of the SMI (SMI-2), good evidence was found for this distinction (Bamelis, Renner, Heidkamp, & Arntz, 2010). In the 80-item version of the SMI that we used, inspection of the items of the Overcontroller mode suggests that only one item represents the Suspicious Overcontroller mode ("I look for ways to outsmart people so they won't take advantage of me or hurt me*")*. The

majority of the SMI items belonging to the Overcontroller mode seem to represent the Perfectionistic Overcontroller, as they predominantly relate to keeping control over oneself instead of over a perceived threat (e.g., "If I feel I don't have control over something, I panic"; "I find it difficult to let myself go"). In sum, all three modes belonging to the Overachieving modes are associated with a perfectionistic performance, but the equivocal nature of the Self-Aggrandizer and Overcontroller modes could be problematic. Future research should investigate whether (items of) these SMI scales may need revision, and whether this will lead to a better fit of a higher-order model.

In general, the scales of the SCI and SMI differentiated better between girls from the community and clinical sample, than between boys from these samples. This phenomenon has also been found in self-report instruments of emotional and behavioral problems in adolescents (Achenbach & Rescorla, 2001). For the SCI scales of Surrender and Avoidance, there were no differences at all between boys from the community and clinical sample. Perhaps these SCI scales are not sensitive to psychopathology in boys, although conceptually it would be expected that a sample of patients receiving treatment for externalizing behavior problems would display at least more overcompensatory coping. On the contrary, boys from the clinical population scored lower on Overcompensation than boys from the community population. It is possible that the adolescents from the clinical sample were more prone to respond to these items in a socially desirable way, as overcompensatory coping most probably has been labeled as problematic repeatedly during treatment. This social desirability bias has also been found in studies on forensic adult patients (Cima et al., 2003; Keulen-De Vos et al., 2011; Lobbestael, Arntz, Lobbes, & Cima, 2009) and has been labeled as "supernormality" by Cima and colleagues (2003). Another explanation could be that boys in our clinical sample felt that, whether or not due to treatment, they have already improved a lot with respect to their overcompensatory coping, and therefore score relatively low on this coping style. Nonetheless, these explanations are not consistent with the finding that boys from the clinical sample did report more (Externalizing) maladaptive schema modes than adolescents from the community sample. Inspection of the items belonging to the Overcompensation scale uncovers that one item ("I fantasize to become famous, rich, important, or successful") could be quite a normal phenomenon in adolescence. Also, correlation analysis showed that when other coping styles (and maladaptive mode scales) were partialled out, there actually was a weak positive correlation between Overcompensation and Healthy modes.

With respect to the concurrent validity of the SCI and SMI in adolescents, meaningful relations were found between schema coping, schema modes, and behavioral problems. This is in line with previous studies that have demonstrated concurrent validity of the SMI and SCI in adults (Lobbestael et al., 2010; Renner et al., 2013; Rijkeboer & Lobbestael, 2016), and of the SMI-A in adolescents (Roelofs et al., 2015).

There are several limitations to this study. First, relying solely on self-report instruments for the assessment of schema coping, schema modes, and behavior problems

could lead to validity problems. Nonetheless, now that we have provided initial validation for the constructs in adolescents as measured by self-report instruments, future directions include using observant-based measures to assess coping and modes, and to compare them to self-report measures. Second, although our clinical sample included multiple forms of psychopathology (e.g., externalizing pathology, personality pathology, and to a lesser extent internalizing pathology) it was homogeneous in that it comprised only adolescents who were residentially treated for behavioral problems. The question whether the results are generalizable to other clinical adolescent populations remains unanswered. Third, there was a limited variety of variables with which we could demonstrate concurrent validity of the SCI and SMI. It would be of great value to also include measures of personality pathology and quality of life. So although we provided initial evidence for the validity and reliability of the SCI and SMI in adolescents, additional research is necessary including test-retest reliability and predictive validity. There are also some strengths to this study, including the relatively large total sample size, the use of a mixed community and clinical sample, our focus on measurement invariance across the community and clinical sample for the SCI, and our attempt to cross-validate findings for the higher-order model of the SMI.

In conclusion, this study demonstrated that schema coping styles and schema modes can be distinguished in adolescents, and that the SCI and SMI generally seem reliable and valid instruments to assess these key constructs of Schema Therapy (ST) in this population. This contributes to the notion that ST is applicable to adolescents, and that the SCI and SMI could provide valuable information guiding ST interventions. They could also serve as measures of therapeutic change in adolescents, although more general measures of (personality) pathology should also be included as outcome measures. For example, future studies could investigate whether changes in ST constructs mediate the effect of treatment on general outcome measures. Finally, for a further understanding of the validity of these questionnaires in adolescents, future research should try and replicate our findings in both community and larger, more heterogeneous clinical samples, and should focus on measurement invariance across these samples.

CHAPTER 3

Theoretic framework of Schema Therapy in adolescents

Van Wijk-Herbrink, M. F., Bernstein, D. P., Broers, N. J., Roelofs, J., Rijkeboer, M. M., & Arntz, A. (2017). Internalizing and externalizing behaviors share a common predictor: The effects of Early Maladaptive Schemas are mediated by coping responses and schema modes. *Journal of Abnormal Child Psychology*. Accepted for publication.

ABSTRACT

We investigated the relationships of adolescents' internalizing and externalizing behaviors with their early maladaptive schemas (EMS), coping responses, and schema modes. We focused on EMS related to experiences of disconnection and rejection that comprise vulnerable emotions, such as shame, mistrust, deprivation, abandonment, and isolation/alienation. This cross-sectional study included a total of 699 adolescents (combined clinical and non-referred sample) who were 11 to 18 years old (M = 14.6; SD = 1.6), and of which 45% was male. All participants completed self-report questionnaires on EMS, coping responses, schema modes, and behavior problems. We aimed to clarify the relationships between these variables by testing mediation, moderation, and moderated mediation models. In general, coping responses functioned as mediators rather than moderators in the relationship between EMS and schema modes. Furthermore, EMS regarding experiences of disconnection and rejection were related to both internalizing and externalizing behavior problems, and coping responses and schema modes mediated these effects. In conclusion, although adolescent internalizing and externalizing behavior problems manifest quite differently, they seem related to the same EMS.

Keywords: early maladaptive schemas, coping, schema modes, adolescents, internalizing behavior problems, externalizing behavior problems

BACKGROUND

There is a growing body of literature demonstrating relationships between Young's (1994) early maladaptive schemas (EMS) and later emotional and behavioral problems in adolescents (e.g., Calvete & Orue, 2012; Muris, 2006; Van Vlierberghe & Braet, 2007; Van Vlierberghe, Braet, Bosmans, Rosseel, & Bögels, 2010). EMS are repeating, self-defeating patterns, consisting of cognitions, affects, memories, and physiological reactions (Young, 1994). They develop in early childhood through the interaction of adverse childhood experiences and the child's innate temperament. EMS bias processing of social information, evoking negative emotions and dysfunctional thoughts, which may ultimately result in internalizing and externalizing behavior problems.

Nevertheless, a number of critical questions about these relationships remain unanswered. First, are there relationships between specific EMS and specific kinds of behavior problems, such as internalizing versus externalizing behaviors? Or, is it possible that the same EMS can result in different behavior problems, depending on other factors, such as coping responses (i.e., moderating models)? Further, what are the theoretically indicated intervening variables between EMS and internalizing versus externalizing behavior problems (i.e., mediating models)?

EMS and Internalizing versus Externalizing Behavior Problems

Several cross-sectional studies have tried to clarify the relationships between EMS and internalizing versus externalizing behavior problems in adolescence. Van Vlierberghe and Braet (2007) found that 45% of the variance in internalizing problems was explained by the EMS Social isolation (the expectation that one will never fit in) and Vulnerability to harm/illness (the expectation that a catastrophe can happen any time and that there is nothing one can do about it). They also found that 19% of the variance in externalizing problems was explained by the EMS Entitlement/grandiosity (the perception that one is superior to others and entitled to special rights) and Dependence/incompetence (the belief that one is unable to handle everyday responsibilities without help). Other studies (Muris, 2006; Van Vlierberghe et al., 2010) found sets of schemas that uniquely contributed to certain types of problems, such as depressive symptoms, anxiety symptoms, and disruptive behaviors (explained variance ranging from .38 to .52). However, these sets of schemas did not converge across the studies.

Thus, the existing literature is inconsistent regarding the nature of these relationships, which may in part be due to differences in study populations, measures, and other methodological differences. Nevertheless, all studies reported some evidence that EMS related to experiences of disconnection and rejection are predictive of both internalizing and externalizing problems. Such EMS include Abandonment (i.e., expecting to be abandoned in close relationships), Mistrust/Abuse (i.e., expecting to be mistreated by others), Emotional deprivation (i.e., expecting that others will not meet one's needs), Social isolation (i.e., feeling different from others; expecting to never fit in), and

Defectiveness/Shame (i.e., perceiving the self as inferior, unwanted, or unlovable). EMS concerning experiences of disconnection and rejection are related to attachment difficulties arising in the early years, and evoke emotions of shame, mistrust, deprivation, abandonment, and isolation/alienation. It may be that more complex models, for example moderating or mediating models, are necessary to clarify the relationships between EMS regarding experiences of disconnection and rejection, and internalizing versus externalizing behaviors.

Schema Theory: An Explanatory Model of Behavior

Schema theory (Young, Klosko, & Weishaar, 2003) provides a model for the relationship between EMS and behavior. Young and colleagues theorized that EMS, when triggered in different situations, evoke intense emotions (e.g., shame, sadness, fear, or anger) as well as attempts at coping. Coping responses (surrender, avoidance, and overcompensation) to activated EMS are theorized to result in schema modes, which are transient emotional-cognitive-behavioral states. Whereas EMS are trait-like entities, schema modes are the state variants of EMS. For example, a Defectiveness schema (i.e., perceiving the self as inferior, unwanted, or unlovable), combined with a surrendering coping response, could produce an emotional-cognitive-behavioral state involving giving in to painful feelings of inferiority and sadness, known as Vulnerable Child mode. In contrast, the same Defectiveness schema, coupled with an Overcompensating coping response, could produce a state of arrogance and superiority, known as Self-Aggrandizer mode (see Table 1).

Rijkeboer and Lobbestael (2012) tested the schema theory with a cross-sectional design in a large sample of adult patients ($N = 1602$). They found clear evidence for the mediating role of coping responses in the relationship between specific EMS and schema modes for almost every combination that they tested. They split their sample in half to cross-validate their findings. In both samples, they found significant indirect effects of specific EMS on specific schema modes through coping (explained variance ranged from 0.34 to 0.74). Their findings suggest that EMS can result in different types of emotional states, when mediated by different coping responses. Nevertheless, they did not examine these relationships in adolescence, when behavior problems often first appear, nor did they investigate the relationships between the schema theory constructs and internalizing versus externalizing behavior problems. A recent study in adolescents showed that surrendering coping, internalizing modes (e.g., Vulnerable Child mode), and internalizing behavior problems were all related to each other, and that overcompensatory coping, externalizing modes (e.g., Angry Child mode), and externalizing behavior problems were also related to each other (Van Wijk-Herbrink, Roelofs, et al., 2017). This study also showed that avoidant coping was not, or only weakly, related to such schema modes and behaviors.

Table 1. Theorized relationships between EMS, schema coping, and schema modes

EMS	*Surrender* as coping response	*Schema modes*
Abandonment	Choosing friends 'out of one's league'	*Abandoned or abused Child mode (Vulnerable Child mode)*: Feeling as a vulnerable, lost child; feeling anxious, sad, helpless, and lonely; being in desperate need of a caring adult
Mistrust/abuse	Staying in abusive relationship	
Emotional depr.	Not asking for support	
Social isolation	Concentrating on differences instead of similarities with other people	
Defectiveness	Choosing critical friends	
Defectiveness	Being self-critical	*Punitive Parent mode*: Internalized voice of a parent or other significant person; criticizing or punishing the self for having normal emotional needs; being overly harsh and critical towards the self;
EMS	*Avoidance* as coping response	*Schema modes*
Abandonment	Not engaging in close relationships	*Detached Protector mode:* Feeling cut off from needs and emotions; feeling disconnected; keeping others at a distance; rejecting support; robot-like behavior
Mistrust/abuse	Not trusting anyone	
Emotional depr.	Avoiding relationships; day dreaming	
Social isolation	Avoiding social groups and relationships	
Defectiveness	Being emotionally inhibited	
Abandonment	Caring excessively for significant others	*Compliant Surrender mode:* Acting in a submissive or approval-seeking way to avoid conflict; being passive and compliant
Mistrust/abuse	Being mindful of not evoking anger in others	
EMS	*Overcompensation* as coping response	*Schema modes*
Abandonment	Shouting when one expects (even slight) separation	*Angry Child mode:* Feeling angry because of unmet core needs, ventilating anger by screaming, shouting, or damaging objects; the anger is in direct relation with core EMS; rebelling against unfair treatment
Mistrust/abuse	Reacting with anger outbursts to perceived injustice	
Emotional depr.	Being emotionally demanding	
Social isolation	Not accepting legitimate exclusion	
Defectiveness	Being critical of others	
Mistrust/abuse	Abusing or attacking others	*Bully and Attack mode:* Threatening, intimidating, or attacking others to get one's own way, or to protect oneself from real or perceived danger
Defectiveness	Displaying excessive self-confidence	*Self-Aggrandizer mode:* Acting superior; being derogatory; feeling special or powerful; expecting to be admired

Present Study

In the present study, we aimed to test relationships between the schema theory constructs and behavior problems in adolescents. Adolescence is a period when internalizing and externalizing behavior problems often become manifest, and where early intervention may prevent the development of more severe or chronic problems. Studying these issues in adolescents would not only contribute to the development of more adequate theoretical models of these phenomena, but might also point the way to more effective interventions.

We used a combined sample of clinical and non-referred adolescents in order to benefit from the large sample size and to increase variance. Combining the samples is in line with theory and research, suggesting that the schema theory constructs are consistent dimensions occurring in both clinical and healthy samples (e.g., Rijkeboer & Lobbestael, 2016; Rijkeboer & van den Bergh, 2006; Roelofs, Muris, & Lobbestael, 2015; Van Vlierberghe et al., 2010; Van Wijk-Herbrink, Roelofs, et al., 2017). Consistent with the idea of dimensionality, these studies show differences in severity of these constructs between clinical and non-clinical samples. Nonetheless, the relationships between these constructs are thought to be the same for both groups: When EMS are triggered, certain coping responses may be adopted, resulting in certain schema modes.

We tested three possible models for the relationships between EMS, coping responses, and schema modes, and consequently tested models for the relationships between schema theory constructs and behavior problems. We used the schema theory combinations found by Rijkeboer and Lobbestael (2012), thereby focusing on the five EMS regarding experiences of disconnection and rejection. All combinations are illustrated in Table 1.

Mediation. In an attempt to replicate the findings of Rijkeboer and Lobbestael (2012), we first tested whether coping is the mechanism through which EMS exert their effect on schema modes. From schema theory, we would expect EMS to have an effect on schema coping, and schema coping to have an effect on schema modes. We hypothesized that, for all combinations in Table 1, coping would mediate the relationship between EMS and schema modes (e.g., relationship between EMS Abandonment and Vulnerable Child mode goes through surrendering coping).

Moderation. From schema theory, it could also be that the effect of EMS on schema modes is dependent on schema coping: When EMS are triggered, the activation of schema modes may rely on the level of specific coping styles that are adopted. Thus, we hypothesized that, for all combinations in Table 1, coping would moderate the relationship between EMS and schema modes (e.g., relationship between EMS Abandonment and Vulnerable Child mode exists only (or is stronger) if surrendering coping is high).

Moderated mediation. As a third step, we tested whether schema coping is both a mediating and moderating variable at the same time. It may be that EMS activate schema modes through coping, but only when a certain level of dysfunctional coping is achieved. Thus, for all combinations in Table 1, we hypothesized that coping both mediates and moderates the relationships between EMS and schema modes (e.g., relationship between EMS Abandonment and Vulnerable Child mode goes through surrendering coping, but only (or more strongly) if surrendering coping is high).

Models for Schema Theory Constructs and Internalizing versus Externalizing Problems. As a final step of the present study, we examined the nature of the relationships between EMS, schema coping, schema modes, and internalizing versus externalizing behavior problems. We hypothesized that EMS would predict behavior problems through schema coping (and/or dependent on schema coping) and through schema modes (see Figure 1). We included only the schema coping styles surrender and overcompensation, not avoidance, because previous research showed that avoidance was not or only weakly correlated with internalizing or externalizing behavior problems after correcting for other coping responses (Van Wijk-Herbrink, Roelofs, et al., 2017).

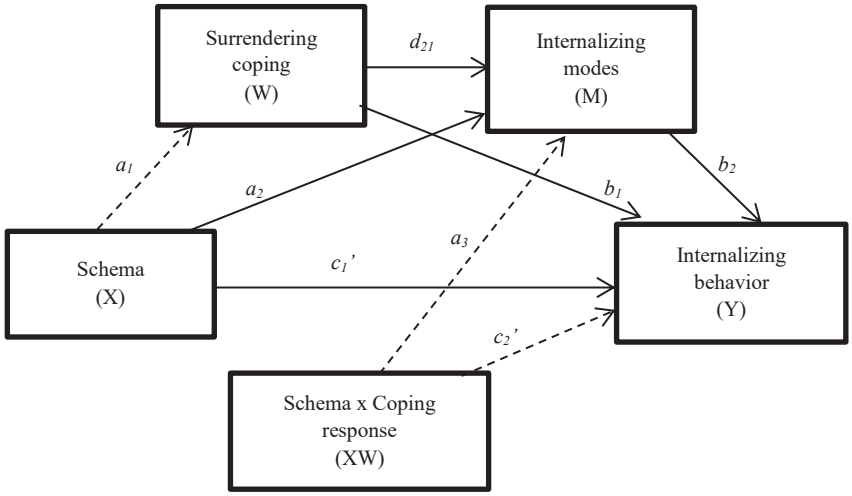
METHOD

Participants and Procedure

This study was based on the same dataset (N = 699) as our previous study on the validation of schema coping and schema modes in adolescents (Van Wijk-Herbrink, Roelofs, et al., 2017), to which we refer for more details about the sample, procedure, and instruments used. Participants from the non-referred sample were recruited from a secondary school in the Netherlands. All 1,600 pupils of this school were approached for participation, and 36% of them (and their parents) gave informed consent, resulting in a non-referred sample of 577 adolescents. This sample included 242 males and 335 females between 11 and 18 years old (M = 14.4, SD = 1.7), of which 98% was of Dutch origin.

The clinical sample was recruited from two residential treatment centers with open and secure treatment groups for adolescent patients with severe behavior problems. The questionnaires used in this study were administered as a standard clinical procedure, and were retrieved from the dossiers of all patients who were in treatment at the time of recruiting the non-referred sample. Sixty-nine percent of the dossiers contained completed questionnaires. Consent for the anonymous use of these data for research purposes was included in the written consent for clinical treatment, which was given by both patients and their parents. The Ethical Committee of Maastricht University in the Netherlands approved this procedure, as well as all other procedures of this study. The clinical sample included 70 males and 52 females between 12 and 18 years old (M = 15.5, SD = 1.2), of which 84% was of Dutch origin. Although these patients are usually admitted for their externalizing behavior problems, they also show high rates of internalizing behavior problems (Nijhof, Veerman, Engels, & Scholte, 2011). Most prevalent DSM-IV (American Psychiatric Association, 2000) chart diagnoses of the patients included Disruptive Behavior Disorders (67%), emerging Personality Disorders or Personality Disorder traits (58%), Substance Abuse Disorder (31%), Attention Deficit and Hyperactivity Disorder (26%), Autism Spectrum Disorder (19%), Post-Traumatic Stress Disorder (17%), Reactive Attachment Disorder (17%), and Mood Disorders (14%).

1a.



1b.

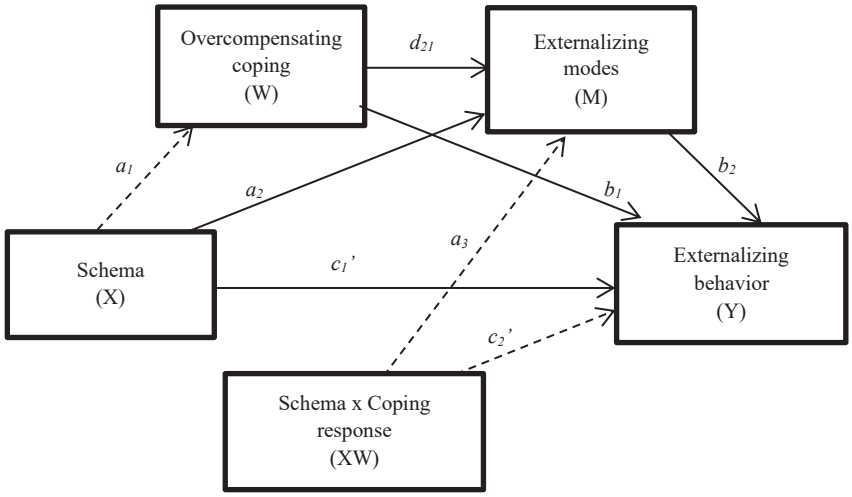


Figure 1. Hypothesized models on the (conditional) indirect and direct effects of disconnection and rejection schemas on internalizing behavior problems (1*a*) versus externalizing behavior problems (1*b*). Depending on the results of Steps 1 to 3, paths a_1, or a_3 and c_2' (striped arrows) may be removed. If path a_1 is removed, this will result in a conditional process model hypothesizing surrendering and overcompensatory coping as moderators of the indirect (through internalizing vs. externalizing modes) and direct effects of schemas on internalizing versus externalizing behavior problems. If paths a_3 and c_2' are removed, this will result in a multiple serial mediation model in which surrendering versus overcompensatory coping is treated as a first mediator, and internalizing versus externalizing modes as a second mediator of the effect of schemas on internalizing versus externalizing behavior problems.

Instruments

EMS. The Young Schema Questionnaire for Adolescents (YSQ-A; Van Vlierberghe, Rijkeboer, Hamers, & Braet, 2004) reflects 15 EMS as defined by Young (1994). Each EMS is represented by five items to be rated on a 6-point Likert scale (1 = *not at all true* through 6 = *totally true*). In our study, we administered only the items from the EMS Abandonment (e.g., "I am concerned that the people I care about will abandon me"), Mistrust/Abuse (e.g., "I think that people will take advantage of me"), Emotional deprivation (e.g., "I have never received love and attention"), Social isolation (e.g., "I don't fit in"), and Defectiveness/Shame (e.g., "No boy or girl I like could love me once he or she gets to know my flaws"), which have consistently been shown to load on a higher-order factor called the Disconnection and Rejection domain in both adults (Lee, Taylor, & Dunn, 1999; Schmidt, Joiner, Young, & Telch, 1995;) and adolescents (Muris, 2006; Van Vlierberghe et al., 2010). Studies have shown that the internal consistency of the Disconnection and Rejection scales is good in adults (.91 to .96, M = .93; Rijkeboer & van den Bergh, 2006; Schmidt et al., 1995; Welburn, Coristine, Dagg, Pontefract, & Jordan, 2002) and acceptable in adolescents (.70 to .86, M = .77; Muris, 2006; Van Vlierberghe et al., 2010). In the current sample, internal consistency ranged from .83 to .90 (M = .86) for the EMS scales of the Disconnection and Rejection domain, and the total internal consistency for the domain was .94. Test-retest reliabilities are available only for adults and range from .67 to .82 (M = .75) over a 3-week period (Schmidt et al., 1995).

In both adults and adolescents, YSQ scales have been shown to discriminate between clinical and non-clinical populations (Rijkeboer & van den Bergh, 2006; Rijkeboer, van den Bergh, & van den Bout, 2005; Van Vlierberghe et al., 2010). Furthermore, regression analyses supported the construct validity of the YSQ by revealing that EMS account for 50 to 63% of the variance in depression symptoms and for 34 to 50% of the variance in anxiety symptoms (Glaser, Campbell, Calhoun, Bates, & Petrocelli, 2002; Schmidt et al., 1995; Van Vlierberghe et al., 2010), and, specifically in adolescents, for 44% of the variance in disruptive behavior (Van Vlierberghe et al., 2010).

Schema modes. We used an 80-item version of the Schema Mode Inventory (SMI; Lobbestael, van Vreeswijk, Spinhoven, Schouten, & Arntz, 2010) to measure schema modes. For this 80-item version of the Schema Mode Inventory, the five items with highest loadings on each schema mode were selected from the SMI, which originally constitutes 118 items (see Keulen-de Vos et al., 2015) to be rated on a 6-point Likert scale (1 = *never or hardly ever* through 6 = *always*). In the present study, we used mean scores on schema mode scales that have been shown to load on higher-order factors of Internalizing modes (Abandoned Child, Lonely Child, Punitive Parent, Compliant Surrenderer, and Detached Protector) and Externalizing modes (Angry Child, Enraged Child, Impulsive Child, Undisciplined Child, and Bully and Attack mode) in both adults (Keulen-De Vos et al., 2015) and adolescents (Roelofs et al., 2015; Van Wijk-Herbrink, Roelofs, et al., 2017).

Additionally, we used mean scores on the Self-Aggrandizer mode (which loaded on the externalizing factor in the Keulen-De Vos study, but on a separate factor called Overachieving modes in the Van Wijk-Herbrink study) and mean scores on the Internalizing and Externalizing factors. The internalizing and externalizing factors have shown good internal consistency, with alpha values of .88 for both factors in adults (Keulen-De Vos et al., 2015) and values of .95 (internalizing) and .92 (externalizing) in the current sample (Van Wijk-Herbrink, Roelofs, et al., 2017). Internal consistencies for the individual schema modes used in the present study are comparable in adolescents and adults, ranging from .70 to .96, $M = .86$ (Lobbestael et al., 2010; Reiss et al., 2011; Roelofs et al., 2015; Van Wijk-Herbrink, Roelofs, et al., 2017). Four-week test-retest reliabilities ranged from .65 to .92, $M = .83$, in adults (Lobbestael et al., 2010).

Compared to healthy controls, both adult and adolescent patients have been shown to score higher on dysfunctional schema modes as used in the present study (Lobbestael et al., 2010; Reiss et al., 2011; Van Wijk-Herbrink, Roelofs, et al., 2017). Furthermore, studies showed that schema modes explain 56% of the variance in psychopathology and 35% of the variance in quality of life (Roelofs et al., 2015), and that they explain additional variance in Axis II disorders above Axis I disorders (R^2 *change* ranging from 2.4 to 12.2, $M = 9.2\%$; Lobbestael et al., 2010). Another study supporting the construct validity of schema modes (Van Wijk-Herbrink, Roelofs, et al., 2017) showed that Internalizing modes were positively associated with internalizing behaviors ($r = .56$) and negatively associated with externalizing behaviors ($r = -.19$), whereas externalizing modes were positively associated with externalizing behaviors ($r = .65$) and negatively associated with internalizing behaviors ($r = -.19$).

Schema coping. The Schema Coping Inventory (SCI; Rijkeboer, Lobbestael, Arntz, & van Genderen, 2010) consists of 12 items to be rated on a 7-point Likert-scale (1 = *totally disagree* through 7 = *totally agree*). In the present study, we used mean scores on the three coping scales: Surrender (e.g., "In case of difficulty, I tend to give up"), Avoidance (e.g., "It is best to switch off your feelings as much as possible"), and Overcompensation (e.g., "I tend to overrule and control others"). Rijkeboer and Lobbestael (2016) randomly split their total sample of 1602 adult patients in two, creating an exploration sample ($n = 801$) in which a model-generating procedure was followed (Jöreskog & Sörbom, 1996), and a validation sample ($n = 801$) in which the found factor structure was cross-validated, using a strict confirmatory procedure. Using structural equation modeling, they found that all fit indices of the established three-factor model showed a good fit to the data in both samples (CFI > .97, NNFI > .96, SRMR < .044, and GFI > .95), and internal consistency values ranged from .75 to .86, $M = .80$. The three-factor structure was replicated in the adolescent clinical and non-referred samples that constitute the current sample of the present study, and high levels of measurement invariance between the subsamples were established (Van Wijk-Herbrink, Roelofs, et al., 2017). For the current sample, internal consistency values

were considerably higher for the clinical adolescent sample (.71 – .78, *M* = .75) than for the non-referred adolescent sample (.61 – .67, *M* = .64; Van Wijk-Herbrink, Roelofs, et al., 2017).

In adults, regression analyses revealed that the coping scales were uniquely related to personality disorder traits. Positive associations (*p*'s < .001) were found for Surrender with dependent and depressive traits (γ's > .28), for Avoidance with avoidant personality traits (γ = .49), and for Overcompensation with paranoid, narcissistic, passive-aggressive, and obsessive-compulsive traits (γ's > .25; Rijkeboer & Lobbestael, 2016). In adolescents, strong positive associations (*p*'s < .001) were found for Surrender with internalizing schema modes (*r* = .37 for Surrender) and internalizing behavior problems (*r* = .51), and for Overcompensation with externalizing modes (*r* = .19) and externalizing behaviors (*r* = .24). Somewhat weaker, but significant associations (*p*'s < .001) were found for Avoidance with internalizing schema modes (*r* = .16) and internalizing behavior problems (*r* = .10).

Behavior problems. Participants filled out the Youth Self-Report (YSR; Achenbach & Rescorla, 2001), rating items from the Internalizing and Externalizing problems scales as 0 (*not true*), 1 (*somewhat or sometimes true*), or 2 (*very true or often true*). Each scale was represented by 32 items, and scale scores were the sum of these items. The YSR has shown good psychometric properties in many different languages. The Internalizing and Externalizing scales of the Dutch version have high internal consistency (.91 – .95) and test-retest reliability, and stability coefficients are .59 (Internalizing) and .60 (Externalizing) for a 2-year interval and .45 (Internalizing) and .46 (Externalizing) for a 4-year interval (Verhulst & Van der Ende, 2013). In the current sample, the internal consistency was .93 for the Internalizing problems scale and .92 for the Externalizing problems scale. The Internalizing and Externalizing scales distinguish well between referred and non-referred youth (Verhulst & Van der Ende, 2013). Achenbach and Rescorla (2001) showed that the Internalizing problems scale correlated with depressive disorders (*r* = .45 – .59), and that the Externalizing problems scale correlated with conduct disorder (*r* = .30 – .62).

Statistical Analyses

Most participants completed the questionnaires through a secure web page that does not allow missing values. Only those few participants, who did not have access to internet (usually patients in high secure treatment units), filled out pen-and-paper questionnaires. Therefore, missing data occurred only occasionally, and were replaced by the mean of the other items belonging to the same scale (so that the missing data would not influence the scale scores).

We followed four steps to clarify the relationships between the constructs of schema theory and adolescent's internalizing versus externalizing behavior problems. In Step 1, we conducted mediation analyses to replicate the findings of Rijkeboer and Lobbestael (2012) in our adolescent sample. In Step 2, we investigated the same relationships between EMS

and schema modes, but this time we used moderation models rather than mediation models for the role of coping. If there was evidence for both models, we proceeded with Step 3 and tested an integrated model of moderated mediation (Hayes, 2013), implicating that schema coping can act as a mediator and a moderator at the same time. In Step 4, we used only higher-order variables of EMS and schema modes, and added internalizing versus externalizing behavior problems to the models (See Figure 1). Based on the results of Step 1-3, we decided whether to treat surrendering coping as a mediator, as a moderator, or both.

We hypothesized that the relationships between EMS, schema coping, and schema modes would be the same for adolescents from the clinical and non-referred samples. We tested this by adding group as a moderator to the analyses described in Step 1 and 2. In Step 1, we tested statistical significance of indexes of moderated mediation (which, for dichotomous moderators, test group differences in indirect effects; Hayes, 2013). In Step 2, we tested statistical significance of 3-way interaction effects (which test group differences in the interaction between EMS and coping). If these indexes of moderated mediation and interaction effects were not statistically significant, we conducted the analyses of Step 1 to 4 on the combined sample of clinical and non-referred adolescents to benefit from the large sample size.

We tested all models in the four steps using the PROCESS macro (Hayes, 2013) for SPSS (version 22), which is based on OLS regression analysis. The moderation analyses (not mediation analyses because of the bootstrapping technique) assume normal distribution of estimation errors of the dependent variables. Because the variables in our study (as in many other psychological studies) are not normally distributed, the estimation errors probably are also not normally distributed. Fortunately, violations of this assumption have been shown to have little effect on linear regression analysis (e.g. Edgell & Noon, 1984; Havlicek & Peterson, 1977). Other assumptions for OLS regression analyses, such as linearity, homoscedasticity, and independent errors were generally met. For all analyses, we reported model coefficients and direct, indirect, and interaction effects in unstandardized form in order to facilitate comparison with future studies using the same instruments. As a measure of the effect size of the mediated effect, we reported the kappa-squared index (κ^2; Preacher & Kelley, 2011) of the indirect effects. This κ^2 is not interpreted relative to zero, but relative to how large the indirect effect could possibly be given the variances and correlations between the variables observed. For the interaction effects, we reported changes in the proportion of explained variance (ΔR^2) as a measure of the effect size of the moderated effect. For the complex moderated mediation models, no effect sizes are available yet (Hayes, 2013). For multiple mediation models, we used the completely standardized indirect effect (CSE) as a measure of the effect size, because the kappa-squared (κ^2) is not available for these models.

To test for statistical significance of indirect effects, we used bias-corrected bootstrap confidence intervals (based on 50,000 bootstrap samples) as calculated by PROCESS (Hayes, 2013). If multiple mediators were used in the fourth step, we tested the

significance of the differences between the indirect effects. Although the mediating variables were not measured on the same scale, the indirect effects through these variables can be meaningfully compared. After all, an indirect effect is defined as the amount by which two cases differing by one unit on X are estimated to differ on Y through the mediating variable, independent of other mediating variables (Hayes, 2013). Therefore, the scaling of the mediating variables plays no role in the interpretation of the indirect effects.

Because in total, we planned to conduct 42 to 62 analyses[3], we applied a correction to the significance level based on the experimentwise error (Maxwell, 1992). To achieve a conventional Type I error of 5% for each analysis, the experiment-wise error rate should be approximately .001 (i.e., .0009 for 62 analyses and .0012 for 42 analyses). Although this is a stringent significance level, the sample size is large enough to use this significance level in order to minimize chance findings, and still have enough power to detect small effects. A power analysis using G*Power (version 3.1.9.2; Faul, Erdfelder, Buchner, & Lang, 2009) showed that with a sample size of 699 and a significance level of .001, we have 80% power to find an interaction effect with an effect size (f^2) of 0.02 or larger in the moderation analyses. For the mediation analyses, we used the bias-corrected bootstrap method to detect indirect effects. Because conducting a power analysis for this method is rather complex, we used the MedPower program (Kenny, 2017) which determines the power of the test of joint significance of paths a and b (MacKinnon, Lockwood, Hoffman, West, & Sheets, 2002). As the bootstrapping method has been demonstrated to have more power than the joint significance test to detect indirect effects (e.g., Fritz & MacKinnon, 2007), the result of the MedPower analysis can be seen as a lower limit of the power of our mediation analyses. The MedPower analysis showed that a sample size of 499 is sufficient to achieve 80% power of detecting a significant effect at the .001 level, even if the regression coefficients of paths a and b are as low as .20. Our sample size of 699 is therefore unlikely to give power issues in the mediation analyses.

RESULTS

Results of Step 1 to 3 involving the relationships between specific EMS, coping, and schema modes are displayed in Table 2. Results of these steps involving the models with higher-order factors of EMS (Disconnection and Rejection EMS) and schema modes (Internalizing and Externalizing modes) are displayed in Table 3. All results are based on the combined sample of clinical and non-referred adolescents, because adding group as a

[3]The exact amount of analyses was dependent on whether or not moderated mediation analyses would logically follow from the results of the simple mediation and simple moderation analyses

moderator to the mediation and moderation analyses revealed no group differences[4]. Thus, as hypothesized, the relationships between schemas, coping, and schema modes were consistent across the clinical and non-referred samples.

Role of Coping in the Relationship between EMS and Schema Modes

***Step 1: Simple mediation analyses*.** For all hypothesized relations between EMS and schema modes, we found significant indirect effects through coping responses. Thus, consistent with the findings in an adult population, schema coping mediated the relationship between EMS and schema modes in our adolescent sample. Effect sizes were largest in analyses with Surrender as a mediating variable, and smallest in analyses with Overcompensation as a mediating variable. In all mediation models, the effects of EMS on coping (path *a*) were statistically significant (ranging from 0.54 to 0.78, $M = 0.66$), as well as the effects of coping on schema modes (path *b*; ranging from 0.16 to 0.46, $M = 0.26$). Besides the indirect effects of EMS on schema modes through coping, we found evidence for direct effects, suggesting that EMS influenced schema modes also independent of schema coping. We also found significant indirect and direct effects for the models with higher-order variables. Path coefficients of these mediation models are depicted in Figure 2.

***Step 2: Simple moderation analyses*.** We found a moderation role for Surrender and Avoidance, but not Overcompensation, in some relationships between EMS and specific schema modes. More specifically, higher levels of surrendering coping led to a larger effect of all EMS on the Abandoned Child mode, and higher levels of avoidant coping led to a larger effect of all EMS on the Detached Protector mode. Although these interaction effects were statistically significant, the increase in R^2 was very small (varying from .01 to .03). Note that in the model with higher-order EMS and schema mode variables, moderation failed to reach significance at the .001 level.

[4] One exception was found with respect to the interaction effect of Abandonment x overcompensation on the Angry Child mode. This significant group difference was rather meaningless, though, because the interaction effect was not significant in either group.

Table 2. Effects of mediation, moderation, and moderated mediation analyses investigating the role of schema coping responses in the relationship between specific EMS and schema modes

		Step 1: Mediation					Step 2: Moderation			Step 3: MM
		Direct effect		Indirect effect			Interaction effect			
X	R^2	*Effect*	*SE*	*Effect*	*SE*	κ^2	*Effect*	*SE*	ΔR^2	*Index*
M=S, Y=AbC										
AB	.47	0.36*	0.03	0.22*	0.03	0.23	0.12*	0.02	.03	0.08*
MI	.48	0.38*	0.03	0.22*	0.03	0.23	0.13*	0.02	.03	0.08*
EM	.54	0.44*	0.03	0.18*	0.02	0.21	0.12*	0.02	.02	0.06*
SO	.54	0.53*	0.03	0.20*	0.03	0.21	0.12*	0.02	.02	0.09*
DE	.57	0.62*	0.03	0.22*	0.03	0.21	0.07*	0.02	.01	0.05*
M=A, Y=DP										
AB	.38	0.33*	0.03	0.14*	0.02	0.15	0.12*	0.02	.02	0.05*
MI	.43	0.45*	0.03	0.15*	0.02	0.16	0.11*	0.02	.02	0.06*
EM	.52	0.55*	0.03	0.12*	0.02	0.15	0.07*	0.02	.01	0.04
SO	.44	0.50*	0.03	0.16*	0.02	0.16	0.13*	0.02	.02	0.08*
DE	.44	0.56*	0.04	0.18*	0.03	0.16	0.10*	0.03	.01	0.07*
M=O, Y=AnC										
AB	.28	0.44*	0.04	0.08*	0.02	0.08	0.08	0.03	.01	-
MI	.37	0.58*	0.04	0.07*	0.02	0.08	0.03	0.03	<.01	-
EM	.46	0.63*	0.03	0.06*	0.01	0.07	0.04	0.02	<.01	-
SO	.29	0.49*	0.04	0.08*	0.02	0.08	<0.01	0.03	<.01	-
DE	.31	0.58*	0.04	0.08*	0.02	0.07	0.04	0.04	<.01	-
M=A, Y=CS										
AB	.45	0.43*	0.03	0.10*	0.02	0.13	0.03	0.02	<.01	-
MI	.42	0.43*	0.03	0.12*	0.02	0.14	0.01	0.02	<.01	-
M=O, Y=BA										
MI	.28	0.27*	0.03	0.08*	0.01	0.11	0.02	0.02	<.01	-
M=S, Y=PP										
DE	.57	0.61*	0.03	0.21*	0.03	0.21	0.04	0.02	<.01	-
M=O, Y=SA										
DE	.44	0.20*	0.03	0.16*	0.03	0.14	0.04	0.03	<.01	-

Note. X = independent variable (EMS); R^2 = proportion of explained variance in the model with schema and coping response as predictors; *SE* = standard error; ΔR^2 = increase in R^2 due to the interaction; κ^2 = effect size of the indirect effect; MM = moderated mediation; *M* = mediating / moderating variable (schema coping); *Y* = dependent variable (schema mode); AB = Abandonment; MI = Mistrust/Abuse; EM = Emotional deprivation; SO = Social isolation; DE = Defectiveness;S = Surrender, A = Avoidance, O= Overcompensation; AbC = Abandoned child, DP = Detached protector, AnC = Angry child, CS = Compliant Surrenderer, BA = Bully and attack, PP = Punitive parent, SA = Self-aggrandizer

* significant at the 0.001 level: 99.9% confidence intervals (direct effects and interaction effects) or 99.9% bias-corrected bootstrap confidence intervals (indirect effects and index of moderated mediation) did not straddle zero.

Table 3. Effects of mediation and moderation analyses investigating the role of schema coping responses in the relationship between Disconnection and Rejection EMS and Internalizing versus Externalizing modes

		Step 1: Mediation					Step 2: Moderation		
		Direct effect		Indirect effect			Interaction effect		
X	R^2	*Effect*	*SE*	*Effect*	*SE*	κ^2	*Effect*	*SE*	ΔR^2
M = S, Y = IM									
DR	0.72	0.79*	0.03	0.17*	0.03	0.20	0.05	0.02	<0.01
M = O,Y = EM									
DR	0.48	0.73*	0.04	0.12*	0.02	0.12	0.06	0.03	<0.01

Note. R^2 = proportion of explained variance in the model with schema and coping response as predictors; ΔR^2 = increase in R^2 due to the interaction. κ^2 = effect size of the indirect effect. DR = EMS from the domain of Disconnection and Rejection; S = Surrender; O = Overcompensation; IM = Internalizing modes, EM = Externalizing modes.
* significant at the 0.001 level: 99.9% confidence intervals (direct effects and interaction effects) or 99.9% bias-corrected bootstrap confidence intervals (indirect effects) did not straddle zero.

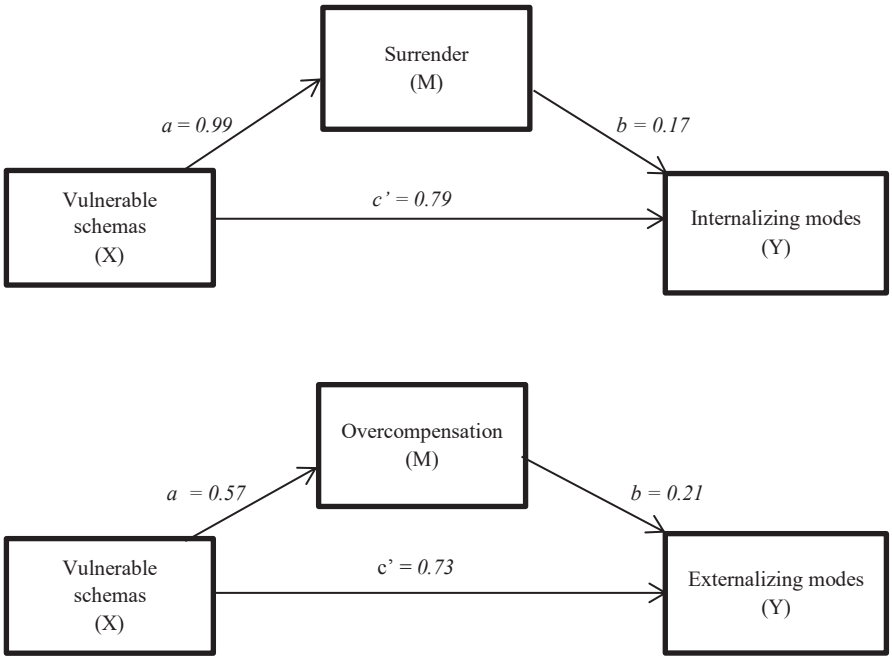


Fig. 2 Simple mediation models estimating the direct and indirect (through coping) effects of Disconnection and Rejection EMS on Internalizing modes and on Externalizing modes. All path coefficients were significant at the 0.001 significance level

Step 3: Moderated mediation. For those relationships between EMS and schema modes for which evidence of both a mediation and moderation role of coping was found, we tested moderated mediation models. In all but one hypothesized relationship, we found evidence for this more complex role of coping responses, as the index of moderated mediation was significantly different from zero (i.e., the corresponding 99.9% bias-corrected bootstrap confidence intervals did not straddle zero). Note that we did not investigate moderated mediation models for the higher-order variables of EMS and schema modes, because moderation analyses with these variables failed to reach significance.

Role of Coping and Schema Modes in the Effect of EMS on Behavior Problems

Step 4: Multiple mediation analyses. In Step 4, we added internalizing and externalizing behavior problems to the models involving higher-order EMS and schema mode variables. Because we found evidence only for a mediating, not a moderating role of schema coping in the higher-order analyses, we treated the coping variables in Step 4 as mediators and not moderators. Thus, the effect of Disconnection and Rejection EMS on behavior problems was hypothesized to be mediated by coping and/or schema modes.

Internalizing behavior problems. From a serial multiple mediation analysis, EMS indirectly influenced Internalizing behavior problems through its effects on surrendering coping and Internalizing modes. As can be seen in Table 4 and Figure 3a, EMS influenced surrendering coping (a_1), surrendering coping influenced Internalizing modes (d_{21}), and Internalizing modes influenced Internalizing behavior problems (b_2). A 99.9% bias-corrected bootstrap confidence interval (BCI) based on 50,000 bootstrap samples for this indirect effect was entirely above zero, $a_1d_{21}b_2$ = 1.34, 99.9% BCI [0.71, 2.13]. The completely standardized indirect effect (CSE) for $a_1d_{21}b_2$ was 0.09. The results also showed that the two mediators, after controlling for each other, independently mediated the effect of EMS on Internalizing behavior problems. The bias-corrected bootstrap confidence interval for the indirect effect of EMS on Internalizing behavior problems through surrendering coping, independent on Internalizing modes, was entirely above zero, a_1b_1 = 0.95, CSE = 0.07, 99.9% BCI [0.07, 1.90]. The same was true for the confidence interval for the indirect effect a_2b_2 through Internalizing modes, independent of surrendering coping, a_2b_2 = 6.43, CSE = 0.45, 99.9% BCI [4.74, 8.44]. There were differences between the indirect effects a_1b_1, *a2b2,* and *a1d21b2*: The indirect effect through surrendering coping (a_1b_1) was smaller than the indirect effect through both surrendering coping and Internalizing modes ($a_1d_{21}b_2$), 99.9% BCI [-7.88, -3.27]), which in turn was smaller than the indirect effect through Internalizing modes (a_2b_2), 99.9% BCI [-7.36, -3.21]. Besides the indirect effects, we found evidence that EMS had a direct effect on Internalizing behavior problems independent of surrendering coping and Internalizing modes, c' = 1.82, 99.9% BCI [0.05, 3.58].

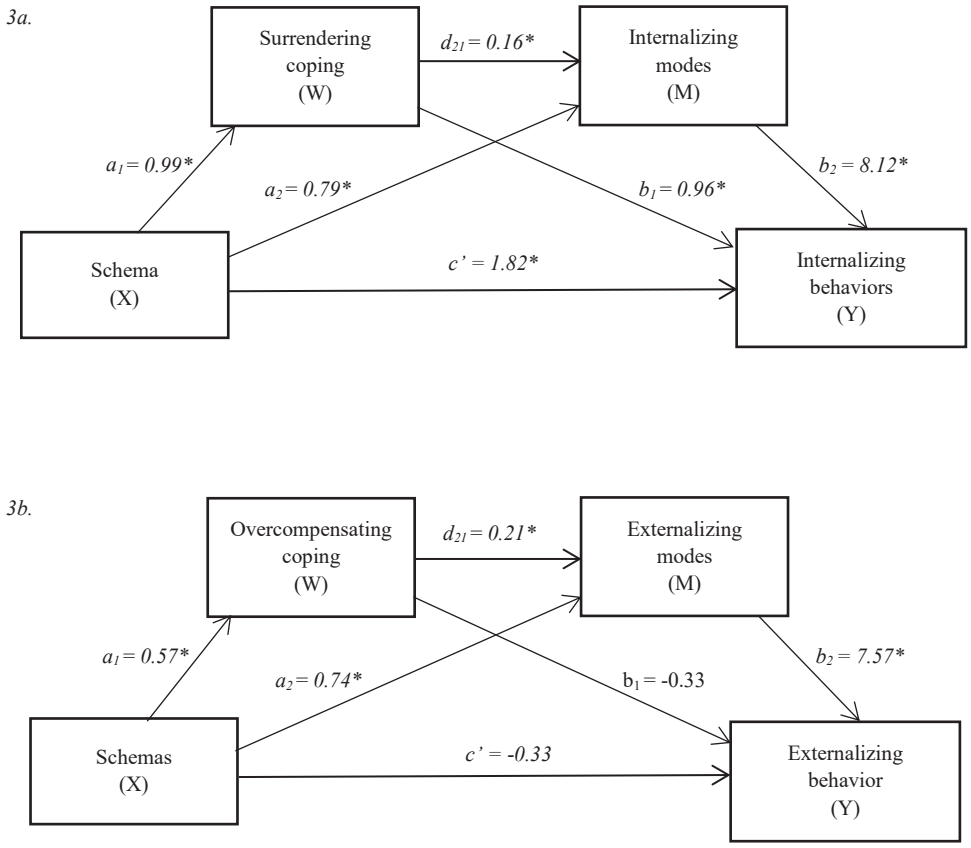


Fig. 3 Multiple serial mediation models estimating the direct and indirect effects of Disconnection and Rejection EMS on Internalizing behavior problems (3a) and on Externalizing behavior problems (3b) through coping and schema modes. Statistically significant (<0.001) path coefficients are indicated with an asterisk (*)

Externalizing behavior problems. For externalizing behavior problems, the results of the serial multiple mediation analysis are displayed in Table 4 and Figure 3b. Disconnection and rejection EMS indirectly influenced Externalizing behavior problems through both overcompensatory coping and Externalizing modes. As shown in Figure 3b, EMS showed an effect on Overcompensatory coping (a_1), Overcompensatory coping affected Externalizing modes (d_{21}), and Externalizing modes affected Externalizing behavior problems (b_2). This indirect effect was significantly different from zero, $a_1d_{21}b_2 = 0.92$, CSE = 0.08, 99.9% BCI [0.49, 1.57]. After controlling for Externalizing modes, we found no evidence for an indirect effect of EMS on Externalizing behavior problems through overcompensatory coping, $a_1b_1 = -0.19$, 99.9% BCI [-0.66, 0.21]. On the contrary, we found a significant indirect effect through Externalizing modes after controlling for

overcompensatory coping, a_2b_2 = 5.57, CSE = 0.45, BCI [4.15, 7.28]. The indirect effect through both overcompensatory coping and Externalizing modes ($a_1d_{21}b_2$) was smaller than the one through externalizing modes alone (a_2b_2), 99.9% BCI [-6.41, -3.08]. There was no evidence of a direct effect of schemas on Externalizing behavior problems independent on overcompensatory coping and externalizing modes, c' = -0.33, 99.9% BCI [-1.58, 0.92].

Table 4. Results from the multiple mediation models investigating the direct and indirect effects of EMS on internalizing versus externalizing behavior problems

Internalizing behavior problems

		Consequent							
		M1 (S)			M2 (IM)			Y (IB)	
Antecedent		*Coeff.*	*SE*		*Coeff.*	*SE*		*Coeff.*	*SE*
X (DR)	a_1	0.99*	0.05	a_2	0.79*	0.03	c'	1.82*	0.53
M1 (S)				d_{21}	0.16*	0.02	b_1	0.96*	0.25
M2 (IM)							b_2	8.12*	0.48
Constant		0.77*	0.10		-0.10	0.05		-9.25*	0.63
	R^2 = 0.40			R^2 = 0.72			R^2 = 0.71		
	$F(1, 693)$ = 452.87**			$F(2, 692)$ = 890.48**			$F(3, 691)$ = 560.69**		

Externalizing behavior problems

		Consequent							
		M1 (O)			M2 (EM)			Y (EB)	
Antecedent		*Coeff.*	*SE*		*Coeff.*	*SE*		*Coeff.*	*SE*
X (DR)	a_1	0.57*	0.06	a_2	0.74*	0.04	c'	-0.33	0.45
M1 (O)				d_{21}	0.21*	0.02	b_1	-0.33	0.20
M2 (EM)							b_2	7.57*	0.30
Constant		2.34*	0.12		0.24	0.09		-7.16*	0.74
	R^2 = 0.12			R^2 = 0.48			R^2 = 0.62		
	$F(1, 692)$ = 92.08**			$F(2, 692)$ = 315.47**			$F(3, 691)$ = 369.94**		

Note. DR = Disconnection and rejection EMS; S = surrendering coping; IM = internalizing modes; EM = Externalizing modes; IB = internalizing behavior problems; EB = externalizing behavior problems.
* $p < 0.001$

DISCUSSION

This study investigated various models to explore the relationships between EMS regarding experiences of disconnection and rejection, coping responses, schema modes, and internalizing and externalizing behavior problems. We found clear evidence for a mediating role of schema coping in the relationships between EMS and schema modes, whereas the evidence for a moderating role of schema coping was much less convincing. The relationships between EMS, schema coping, and schema modes were consistent across the non-referred and clinical samples. Furthermore, this study demonstrated that EMS regarding experiences of disconnection and rejection predicted both internalizing and

externalizing behavior problems in adolescents, and that schema coping and schema modes mediated these relationships.

Mediation

With our single mediation analyses of specific EMS, coping, and schema modes, we replicated the findings of Rijkeboer and Lobbestael (2012). This evidence for mediation suggests that coping responses are the mechanisms through which EMS influence schema modes. Rijkeboer and Lobbestael (2012) have kindly provided us with the unstandardized regression coefficients and proportions of explained variance for each specific combination in their adult sample, so that we were able to directly compare these to the unstandardized regression coefficients in our adolescent sample. Overall, it seems that the mediation analyses involving overcompensatory coping as a mediator resulted in comparable proportions of explained variance and indirect effects in the adult (ab = 0.06 – 0.10) and adolescent samples (ab = 0.06 – 0.16). The mediation analyses involving avoidant coping seem to have resulted in comparable proportions of explained variance, but the indirect effects seem somewhat larger in the adolescent sample (ab = 0.12 – 0.18) compared to the adult sample (ab = 0.06 – 0.15). Finally, the mediation analyses involving surrendering coping seem to have produced larger proportions of explained variance in the adult sample than in the adolescent sample, whereas the indirect effects seem larger in the adolescent sample (ab = 0.18 – 0.22) compared to the adult sample (ab = 0.05 – 0.18). Note that these comparisons are observational; We did not statistically test for differences between the adult and adolescent samples. Thus, we do not know whether there are true differences in explained variance and effect sizes between these adolescent and adult samples, let alone if these differences are generalizable to the adolescent and adult population. More research is needed to clarify these issues, and to explore the implications of possible differences.

Moderation and moderated mediation

We found only weak (increases in $R^2 \leq .03$) and inconsistent evidence that relationships between EMS and schema modes are dependent on the degree of various coping responses. In all but one of the models that showed evidence for moderation, we also found evidence for a more complex model of moderated mediation. This suggests that although the mediating mechanism of schema coping is most evident, some hypothesized relationships between EMS and schema modes are also dependent on the level of schema coping styles.

Models for Schema Theory Constructs and Internalizing versus Externalizing Problems

Multiple mediation models showed that EMS predict both internalizing and externalizing behavior problems through mechanisms of schema coping and schema modes. This suggests that when such EMS are activated in adolescents, different coping responses and schema modes lead to different behavioral outcomes. As predicted, in the pathways to

internalizing behavior problems, the EMS were associated with surrendering coping, leading to internalizing modes, which in turn were associated with internalizing behavior problems. In the pathways to externalizing behavior problems, the EMS were associated with overcompensatory coping, leading to externalizing modes, which in turn were associated with externalizing behavior problems.

Indirect effects of EMS on behavior problems were stronger via schema modes than via coping responses. This suggests that schema modes are more important than coping responses in explaining the effects of EMS on behavior problems. However, the differences in indirect effects via coping responses and via schema modes may also be due to the nature of these constructs. Schema modes consist of emotions, cognitions, and behaviors, and therefore partially overlap with the construct of coping responses. Hence, after controlling for the aspects of coping responses in schema modes, little unique variance may remain for modelling the indirect effect via coping responses.

The prominent mediating role of schema modes in the relationship between EMS and behavior problems underlines the importance of the schema mode construct in schema theory. Originally, schema theory included only EMS and coping. Schema modes were introduced because some patients with complex personality disorders (e.g., Borderline Personality Disorder) displayed extensive combinations of EMS and coping responses (Young et al., 2003). This study confirms that fixed combinations of EMS and coping responses result in specific schema modes, and that schema modes are important in explaining how EMS lead to adolescents' behavior problems.

Clinical Implications

The finding that the same EMS statistically predict both internalizing and externalizing behaviors supports the idea that externalizing behaviors are just as much a manifestation of EMS arising from experiences of disconnection and rejection, as are internalizing behaviors. Hence, a focus on EMS, coping, and schema modes (as in Schema Therapy; Young et al., 2003) may be a good choice of treatment for internalizing and externalizing behavior problems. Nonetheless, whether or not the current Schema Therapy techniques are effective in an adolescent population is another question, which deserves careful empirical tests. Several studies have found Schema Therapy to be effective for patients with personality disorders (Farrel, Shaw, & Webber, 2009; Giesen-Bloo et al., 2006; Nadort et al., 2009), both in samples including patients with internalizing behaviors (Bamelis, Evers, Spinhoven, & Arntz, 2014) and externalizing behaviors (Bernstein et al., 2017). Effect sizes were medium to large with respect to changes in EMS/schema modes and symptoms. Recent studies have provided preliminary evidence for the effectiveness of Schema Therapy in adolescent patients with personality disorder traits and internalizing, mood problems (Roelofs et al., 2016) and externalizing, disruptive behaviors (Van Wijk-Herbrink, Broers, et al., 2017). We are currently conducting a randomized controlled trial on adolescents in residential treatment for externalizing behavior problems. This and other

studies will shed light on whether Schema Therapy is indeed an effective treatment for internalizing and externalizing behavior problems in adolescents.

Strengths, Limitations, and Future Research

Strengths of the present study are the relatively large sample size and the use of a mixed non-referred and clinical sample. Of course, this study also has some limitations, such as its cross-sectional design. Therefore, all relationships in the models were susceptible to confounding and epiphenomenal associations. Furthermore, although schema theory clearly guided the causal order of the schema-related constructs that we modelled, methodologically we cannot rule out other order effects. We cannot make inferences about the causality of the relationships. Subsequently, we cannot conclude that intervening to change EMS, coping, and schema modes, for example with Schema Therapy, will change adolescents' behavior problems. Treatment studies investigating mechanisms of change (see Kazdin & Nock, 2003) should focus on this. Another limitation is that we relied solely on self-report questionnaires, which are limited by methodological factors such as response biases. Nevertheless, self-report measures also have an important role to play, because they tell us about the subjective experience of schema theory constructs and behavior problems. Most evidence for the psychometric properties of the questionnaires are from adult samples, although quite good evidence also exist for the use of the YSQ and SMI in adolescents. We know less about the psychometric properties of the SCI due to its fairly recent development, which is a limitation of this study. If the reliability and validity of this measure would be weak, it could potentially attenuate relationships. So, if anything, this would make it harder to detect significant relationships, whereas in our study most hypotheses were confirmed.

Although the response rate in the clinical sample was rather good considering the oppositional tendencies of this population, there was a relatively low response rate in the non-referred sample. We do not know the reasons for not participating in this study (non-referred sample) or not completing the questionnaires (clinical sample), and have no way of comparing the participants to the non-participants, which is a limitation of this study. It may be that non-responders from the clinical sample refused to fill out the questionnaires (although it could also be that staff simply forgot to administer them), and that this relates to their severity of oppositional behaviors. We can only speculate, but if this were true, then we cannot know for sure whether the mechanisms found in this study will also hold up for patients with most severe oppositional behaviors. Although severity of behavior problems did not seem to affect the mechanisms (according to the non-significant differences between the clinical and non-referred sample) and theoretically, we have no reason to assume that this would be any different for extreme oppositional adolescents, we cannot entirely rule out this possibility. Finally, as we have a research program investigating schema theory constructs, we are of course subject to possible biases in favor of our own hypotheses. Therefore, we took precautions to try and mitigate any self-serving

biases, for example by having very specific hypotheses and by setting a stringent significance level for model testing.

Nonetheless, our findings need to be replicated in other (independent) studies. Future research should aim to replicate our results in longitudinal research designs, using a combination of self-report, other-report, and observational measures. Also, it would be interesting to investigate whether the constructs of EMS and schema modes have measurement invariance in clinical and non-referred samples, as was demonstrated for schema coping (Van Wijk-Herbrink, Roelofs, et al., 2017).

Conclusion

In conclusion, this study confirms theorized associations between schema theory constructs of EMS, coping responses, and schema modes, and clarifies important aspects of the nature of these relationships. It suggests that adolescents both with internalizing behaviors and with externalizing behaviors could possibly benefit from Schema Therapy targeting EMS related to experiences of disconnection and rejection. The effectiveness of Schema Therapy with adolescents, therefore, deserves further study.

CHAPTER 4

Early maladaptive schemas and aggression

Van Wijk-Herbrink, M. F., Lobbestael, J., Bernstein, D. P., Broers, N. J., Roelofs, J., & Arntz, A. R. (2017). The influence of early maladaptive schemas on the causal links between perceived injustice, negative affect, and aggression. Manuscript submitted for publication.

ABSTRACT

We used an experimental design to test whether early maladaptive schemas influence the causal links between perceived injustice, negative affect (anger or vulnerable feelings related to abandonment and abuse), and aggression in adolescent boys with severe behavior problems. A total of 37 boys, ranging from 13 to 18 years old, were randomly assigned to either the control condition or experimental condition. We assessed self-reported maladaptive schemas prior to the experiment, and measured negative affect both before and after our experimental manipulation. We induced a feeling of unfairness in the experimental condition by interviewing participants about a recent experience of perceived injustice. In the control condition, participants were interviewed about a recent, neutral experience. Results showed that perceived injustice significantly increased both anger and vulnerable feelings in our participants, and that these effects were moderated by specific schemas, most specifically the Abandonment schema. Furthermore, the effects of perceived injustice on anger and subsequent aggression were conditional on levels of Abandonment and Entitlement schemas. These results suggest that even vulnerable schemas may underlie aggression, and that aggression treatment should not only target behavioral change, but should also focus on underlying maladaptive schemas.

Key words: aggression; anger; maladaptive schemas; perceived injustice; adolescents; disruptive behaviors

INTRODUCTION

Berkowitz' (1990, 2012) theory of anger and aggression has been widely adopted. It states that aversive situations produce negative affect (e.g., anger), increasing the likelihood of aggressive behavior. Also, it holds that certain attributions or beliefs about the aversive situation may influence the occurrence of anger and aggression. For example, the belief that an aversive situation is caused by another person with hostile intentions may intensify the anger experience and aggressive inclinations. With the present study, we aimed to test the causal links between aversive situations, anger or other negative affect, and aggression in a clinical youth population. Moreover, we investigated the influence of certain beliefs or schemas on these causal links.

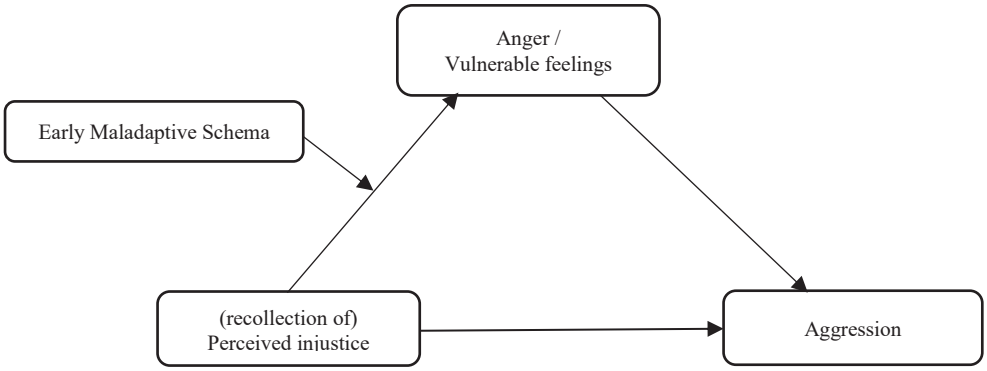
Illegitimacy or unfairness is the most frequently reported element of an aversive situation eliciting feelings of anger (Shaver, Schwartz, Kirson, & O'Connor, 1987). Researchers have demonstrated the relationship between perceived injustice and anger or other negative affect (Pascoe & Richman, 2009; Schmitt, Branscombe, Postmes, & Garcia, 2014). The appraisal of a situation as unfair may be influenced by the presence of deeply entrenched, dysfunctional beliefs or maladaptive schemas. Schemas are generalized knowledge representations of the self, others, and the world, and are used for screening, coding, and evaluating information (Beck, 1976; Young, 1994). When maladaptive schemas bias information processing in aversive situations, they may activate or intensify the pathways to negative affect and aggression. Indeed, several studies have demonstrated associations between schemas of Mistrust (i.e., the expectation that others will take advantage or will have bad intentions), Entitlement (i.e., the perception that one is superior to others or has special rights), and Insufficient Self-control (i.e., the inability to demonstrate adequate self-control or toleration of frustration) with both anger (Tremblay & Dozois, 2009) and aggression (Calvete et al., 2005; Tremblay & Dozois, 2009). Whereas the schema Mistrust may activate anger because of an anticipated threat, the schemas Insufficient Self-control and Entitlement may provoke anger through feelings of frustration (due to low frustration tolerance or the belief that one only has to do what one wants to do).

Although it may seem paradoxical, more vulnerable schemas may also underly anger and aggression. For example, the schema Abandonment (i.e., the belief that others will abandon you when you start to attach to them) may activate feelings of anger when abandonment is perceived as unfair or as betrayal. Indeed, one study showed that adolescents' externalizing behavior problems, including anger and aggression, were associated with schemas related to disconnection and rejection experiences, comprising emotions of abandonment, shame, deprivation, and isolation (van Wijk-Herbrink, Roelofs, et al., 2017). In line with Schema Theory (Young, Klosko, & Weishaar, 2003), this study also demonstrated that the same schemas (i.e., schemas related to disconnection and rejection) can underly both internalizing and externalizing behavior problems, and that these relationships are mediated by coping. Schemas related to disconnection and rejection can be coped with by surrender (i.e., giving in to the schema), which subsequently leads to

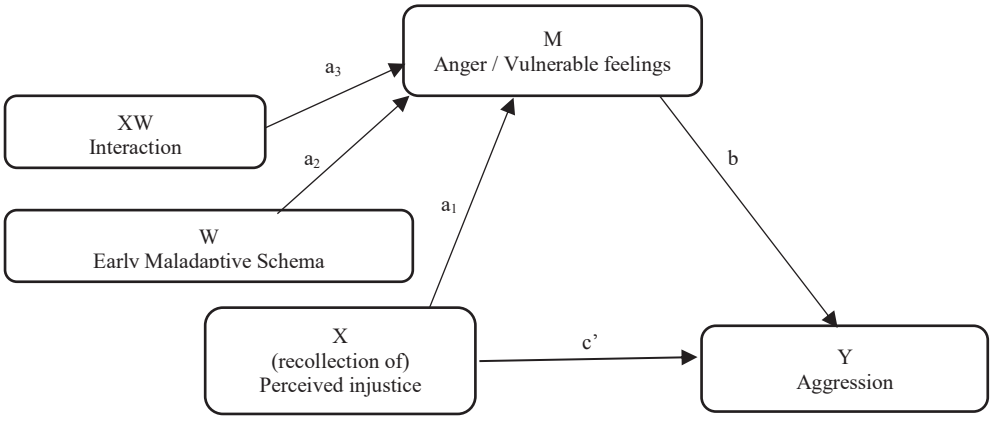
internalizing behaviors. They can also be coped with by overcompensation (i.e., doing the opposite of what the schema tells you), which in turn leads to externalizing behaviors (van Wijk-Herbrink, Roelofs, et al., 2017). This implies that it is important to not only treat the behavior problems, but to also pay attention to underlying schemas and corresponding coping responses.

The present study investigated whether specific schemas influence the occurrence of anger or vulnerable feelings in situations perceived as unfair, and whether such feelings subsequently would lead to aggression. Research has shown that not only anger, but also other negative affect or emotional vulnerability is related to aggression (Caprara, Barbaranelli, Pastorelli, Cermak, & Rosza, 2001; Roberton, Daffern, & Bucks, 2012). Using an experimental design in adolescent boys with externalizing behavior problems, we aimed to induce feelings of unfairness through a vivid recollection of a recent situation of perceived injustice. We hypothesized that our manipulation would increase anger, and that this effect would be moderated by schemas of Abandonment, Mistrust, Entitlement, and Insufficient Self-control. For example, the increase in anger would be larger for boys who have a basic expectation that others have bad intentions (schema Mistrust). We also hypothesized that our manipulation would increase vulnerable feelings related to abandonment and abuse (e.g., feeling abandoned, maltreated, powerless, helpless, lonely, and humiliated), and that this effect would be moderated by schemas of Abandonment and Mistrust. For example, the increase in vulnerable feelings would be larger for boys who have a basic expectation that significant others will always abandon them (schema Abandonment). Because patients with antisocial or disruptive behaviors may underreport vulnerable feelings on an explicit level (Lobbestael & Arntz, 2010), we also implicitly measured the extent to which participants associated themselves with abuse before and after the experimental manipulation. We hypothesized that the experimental manipulation would increase the association of the self with abuse, and again that this increase would be moderated by schemas of Abandonment and Mistrust.

Next, we aimed to test several hypothetical models explaining the relationship between perceived injustice and aggression. The hypothetical models are based on Berkowitz' theory, and are illustrated in Figure 1. If evidence would be found for an increase of particular emotions (anger and/or vulnerable feelings related to abandonment and abuse), we hypothesized that the effect of perceived injustice on aggression would go through such emotions (i.e., mediation). Thus, increase in anger and/or vulnerable feelings would explain the occurrence of aggression in situations perceived as unfair. Furthermore, we expected the mediation to be moderated by specific schemas (i.e., moderated mediation). In other words, maladaptive schemas would influence the presence or strength of the effects of perceived injustice on aggression through anger and vulnerable feelings. For example, situations of injustice may particularly lead to anger and subsequent aggression when the adolescent boy has a basic expectation that others have bad intentions (schema Mistrust).



a. Conceptual model



b. Statistical model

Figure 1. Conceptual and statistical model of moderation mediation. Direct effect = c'; Indirect effect = b(a_1 + a_3W).

In the literature, a distinction is often made between reactive and proactive aggression (Dodge, 1991). Because in the present study we aimed to induce feelings of unfairness, it could be argued that any aggression occurring in this study is reactive (i.e., it occurs in reaction to the feeling of unfairness). Thus, rather than distinguishing between reactive and proactive aggression, we dinstinguished between unprovoked aggression (i.e., aggression after induction of unfairness, no further provocation) and provoked aggression (i.e., further provocation through sound blasts). We hypothesized that the largest effects of

our original manipulation, the induction of unfairness in the experimental condition, would be found on unprovoked aggression (i.e., effects would only be attributed to the induction of unfairness, and subsequent feelings of anger and abandonment/abuse, in the experimental condition). We expected these effects to be smaller on provoked aggression, because all adolescent boys (regardless of whether they were allocated to the experimental or control condition) were being provoked with sound blasts after the initial measure of unprovoked aggression. As provocation is known to trigger aggression (Barlett, Witkower, Mancini, & Saleem, 2016; Chermack, Berman, & Taylor, 1997), its application to all participants may weaken the effects of the unfairness induction.

METHOD

Participants

This study was performed in a secure residential treatment center, to which adolescents with severe behavior problems are involuntarily admitted under Dutch civil law. At the time of this study, 62 male patients were residing in this treatment center. Seven of them were excluded because of insufficient command of the Dutch language (four patients) or because of an IQ lower than 75 (three patients). All other patients and their parents were asked informed consent to participate in this study. Thirteen patients or their parents refused to sign informed consent. The other 42 patients and their parents gave informed consent to participate in this study, of which one patient was arrested and transferred to a youth prison before we conducted the experiment. The experiment was thus conducted with 41 boys, of which four were removed from the final database. One participant was removed because he refused to complete a questionnaire measuring maladaptive schemas prior to the experiment. Another participant recollected a negative situation in the interview phase whilst being in the control condition. Despite the research assistant's efforts to stimulate him to recollect a neutral situation, the negative situation repeatedly returned in his story, possibly biasing his results. Two other participants were removed from the database because their trials of the implicit measure of abandoned/abuse contained more than 10% of latencies lower than 300 ms (see scoring algorithm for this measure in Instruments section), which could indicate random responses. The final sample for statistical analyses consisted of 37 participants, of which 19 were in the experimental condition and 18 in the control condition.

The age of the participants ranged from 13 to 18 years old (M = 16.0, SD = 1.2). The majority was Dutch (81%), and other participants were Moroccan (11%), African (3%), or of other origin (5%). Total IQ scores ranged from 87 to 133 (M = 92.7, SD = 12.9). Most prevalent DSM-IV (American Psychiatric Association, 2000) chart diagnoses were Disruptive Behavior Disorders (70%; 38% oppositional defiant disorder and 32% conduct disorder), Substance Abuse Disorders (51%), and ADHD (46%). Personality pathology or emerging personality disorders were specified in 35% of the charts. Other

chart diagnoses included Autism Spectrum Disorders (32%), Post-Traumatic Stress Disorder (24%), Reactive Attachment Disorder (16%), and Mood Disorders (16%).

Procedure

After receiving informed consent of both patients and their parent(s), we used block randomization to allocate the participants to either the control or experimental condition. The research assistant met with each participant individually to conduct the experiment. Two weeks prior to this meeting, participants completed a questionnaire about their schemas (Young Schema Questionnaire, see Instruments) by pen and paper. The duration of the meeting with the research assistant was approximately 45 minutes. A web application was created to conduct the experiment, and all tasks from the experiment were completed using a laptop. After a short introduction of the experiment, the participant was asked to fill out some personal details that were used for the implicit measure of abandonment/abuse feelings (see Instruments). These personal details were directed to the task measuring implicit abandonment/abuse by the web application; they were not saved and could not be retrieved from the web application. Next, the participant practiced how to complete the trials of the Taylor Aggression Paradigm (TAP; see Instruments). We reasoned that practicing this task before any manipulation was done would save time and effort when the actual task was administered, preventing attention to be driven away from induced experience of unfairness.

The actual experiment was divided into three phases (similar to the experiment conducted by Lobbestael & Arntz, 2010). First, in the neutral phase, participants watched a 5-minute fragment of a film about nature (used as a baseline). We subsequently administered a task to measure implicit vulnerable feelings related to abuse, followed by a short self-report questionnaire measuring explicit anger and vulnerable feelings related to abandonment and abuse. The second phase was the manipulation phase, in which 5-minute interviews were held with the participants. The participants were asked about a recent situation in which they were treated unfairly (experimental condition), or about a recent situation in which they felt neutral (control condition). The research assistant was trained to help the participants recollect the situation as vividly as possible. She asked the participants to describe the situation as if it were a film clip, and helped them focus on the details by asking questions (e.g., Where were you?; What did you see when you looked around?; Who were with you?; What did you hear?; What went through your mind?). She asked the participant to focus on his feelings (e.g., What made you feel treated unfairly?; How did that make you feel?; What made you feel most [emotion reported by participant]?), and on any bodily sensations (e.g., Where did you feel these feelings in your body?; Can you feel the same feeling in your body now we're talking about it?; What does that feel like?). Such an interview has been demonstrated to be one of the most effective anger induction methods (Lobbestael, Arntz, & Wiers, 2008). After the interview, the participants repeated the tasks measuring implicit abandonment/abuse feelings and explicit

anger and abandonment/abuse feelings, and subsequently completed the task measuring aggression. The last phase was the positive induction phase, in which participants watched a 5-minute fragment of a hilarious Dutch TV show. This phase was included to minimize lasting impact of any negative feelings induced by the experiment, and was not included in any of the analyses. After completion of the experiment, participants received a gift voucher worth €7.50 to thank them for their participation. After all participants had completed the experiment, the particiants and their parents were debriefed.

Measures

Early maladaptive schemas. We used the Young Schema Questionnaire for Adolescents (YSQ-A; Van Vlierberghe, Rijkeboer, Hamers, & Braet, 2004) to measure maladaptive schemas two weeks prior to the experiment. The YSQ-A was based on the short-form Young Schema Questionnaire (YSQ-sf; Young, 1998), which has demonstrated adequate psychometric properties (Baranoff, Oei, Kwon, & Ho-Cho, 2006; Bates et al., 2002; Welburn, Coristine, Dagg, Pontefract, & Jordan, 2002). For the Dutch YSQ-A, corresponding items of the YSQ-sf were extracted from the Dutch long-form YSQ (Sterk & Rijkeboer, 1997), which has also shown adequate psychometric properties (Rijkeboer & van den Bergh, 2006; Rijkeboer, van den Bergh, & van den Bout, 2005). Van Vlierberghe and colleagues (2004) adapted the items to make them more comprehensible for adolescents, and these adaptations were approved by the original author (Young). Factor analysis (Van Vlierberghe, Braet, Bosmans, Rosseel, & Bögels, 2010) has shown that the YSQ-A measures the 15 early maladaptive schemas originally proposed by Young (1994). Schema scores represent the mean of five items that had to be rated on a 6-point Likert scale (1 = *not at all true* to 6 = *totally true*). Research has shown that the YSQ-A distinguishes between clinical and non-clinical adolescent samples, and that the YSQ-A scales (i.e., schemas) are related to adolescent psychopathology (Muris, 2006; Van Vlierberghe et al., 2010). The current sample showed adequate internal consistencies for the schemas used in this study: Cronbach's alphas were 0.91 for Abandonment, 0.80 for Mistrust, 0.76 for Entitlement, and 0.72 for Insufficient self-control.

Implicit measure of self-abuse association. The Single Target Implicit Association Task (ST-IAT; Wigboldus, Holland, & van Knippenberg, 2004; Karpinski & Steinman, 2006) was used as an implicit measure of the extent to which participants associated the self with abuse. Several studies have found evidence for the reliability and validity of the ST-IAT (Bar-Anan & Nosek, 2014; Bluemke & Friese, 2008; Karpinski & Steinman, 2006). In this reaction time task, participants had to press the left or right response key to classify words belonging to a target category or one of the two attribute categories. We used the same words and the same target and attribute categories as were used in a study by Lobbestael and Arntz (2010). The target category included individualized self-related words that were entered as personal information by the participant at the start of the experiment (i.e., first

name, last name, date of birth, and their street name, city, and school prior to admittance to the treatment facility). The two attribute categories were 'abuse' (maltreated, abandoned, powerless, helpless, lonely, and humiliated) and 'love' (loved, safe, wanted, hold, protected, and secure). We made sure that participants understood these words by showing them the words prior to the experiment, and explaining the meaning if needed (which only rarely happened). The ST-IAT included a practice block and two test blocks of 48 trials each. In each block, the label 'love' was shown in one upper corner of the screen, and the label 'abuse' was shown in the other upper corner of the screen. Consequently, words related to 'love' and 'abuse' were shown in the middle of the screen, and participants had to assign these words to one of these labels (attribute categories) by pushing the corresponding response keys (either on the left or on the right of the keyboard). In the practice block, 'love' words had to be assigned to one response key and 'abuse' words to the other response key. In one test block, the label 'self' was added to 'abuse', so that 'self' and 'abuse' words had to be assigned to the same response key, and 'love' words to the other response key. In the other test block, the label 'self' was added to 'love', meaning that 'abuse' words were assigned to one response key, and 'self' and 'love' words to the other response key. The order of presentation of the attribute category was randomized. Participants are expected to respond faster when their association of the self with an attribute category is larger, so by measuring latencies we could compute the extent of the association of self with abuse versus the association of self with love. This score was used as a measure of implicit feelings of abandonment/abuse, and was computed by the scoring algorithm as developed by Greenwald and colleagues (Greenwald, Nosek, & Banaji, 2003): (1) we eliminated trials with latencies above 10,000 ms and below 400 ms, and subjects for whom more than 10% of trials had latency less than 300 ms were excluded from further analysis; (2) we computed the mean of latencies for each block (no latency corrections were done to error trials, because the STIAT was set up so that participants had to correct their erroneous responses); (3) we computed a pooled *SD* for all trials in block 2 and 3; (4) we computed the difference between mean latencies for associations of self with "love", and associations of self with "abuse"; (5) we computed a final *D* score by dividing the difference between mean latencies by its pooled sd. A positive D score means that the participant associated himself more with abuse than with love, whereas a negative D score means that the participant associated himself more with love than with abuse. The more negative the D score, the less association of self with abuse.

Anger and vulnerable feelings related to abandonment and abuse. We administered items from the Schema Mode Inventory (SMI; Young et al., 2007) to explicitly measure anger and feelings related to abandonment and abuse. Schema modes are transient states comprising emotions, cognitions, and coping behaviors, and for this study we were mainly interested in emotions. To measure state anger, we selected items that reflect the affective component of the Angry Child and Enraged Child modes (e.g., "I feel furious at someone").

To measure state feelings related to abandonment and abuse, we selected items that reflect the affective component of the Abandoned and Abused Child mode (e.g., "I feel helpless"). We asked the participants to rate to what extent (on a 6-point measurement scale; *1* = not at all, to *6* = very much so) they experienced these emotions at that moment. Studies have shown adequate psychometric properties of the SMI in both adults and adolescents (Young et al., 2007; Roelofs et al., 2015; van Wijk-Herbrink, Roelofs, et al., 2017). In the current sample, internal consistencies for anger and feelings related to abandonment and abuse were good: Cronbach's alphas for anger were 0.82 at T_0 and 0.91 at T_1, and Cronbach's alphas for feelings related to abandonment and abuse were 0.93 at T_0 and 0.94 at T_1.

Measure of aggression. We used the Taylor Aggression Paradigm (TAP; Taylor, 1976) to measure aggression. This task constitutes of 30 trials in which participants had to click on a button on the screen as soon as possible after it turned red. Usually, participants doing this task are being told that they are playing against an opponent, and a lot of effort is put in strengthening this cover story. Because we were dealing with a vulnerable population of boys that were thought to be triggered highly by injustice and deception, we did not want to do anything to mislead them. We therefore decided to tell them that they were not playing against an actual opponent. Instead, we asked them to imagine that they were playing against a self-picked person they did not like. When questioned after the experiment, the majority of our participants (82%) said that they managed to keep this person in mind during the task. Thus, playing against this imagined, unliked person, the participant was told that he could win a trial by clicking on the red button as soon as possible. When winning a trial, he could administer a loud noise to this imagined opponent. When losing a trial, he would hear the noise the opponent administered to him through his headphones. Before each trial, the participant was asked to choose the volume and duration of this noise by moving two sliders between 0 and 10. For volume, 0 represented no noise at all, and 10 represented a noise of 97 dB (equal to the sound of a jackhammer). For duration, 0 stood for zero seconds, and 10 for five seconds. Volume and duration were used as two separate measures of aggression, as recommended by Elson and colleagues (Elson, Mohseni, Breuer, Scharkow, & Quandt, 2014). We used the same settings for the TAP as in a study by Brugman and colleagues (2015), except for some small adaptations to ensure that the 'opponent' would react more aggressively after losing a trial ("payback time"). These adaptations only concerned a switch of volume and duration between a few trials. As in the TAP of Brugman and colleagues (2015), the 'opponent' did not administer any sound blasts to the participant (i.e., both volume and duration sliders were set at 0) during the first 6 trials. From the seventh trial on, the 'opponent' was preprogrammed to administer sound blasts of different volume and duration (see Table 1). Factor analyses have shown that the trials before the first sound administered by the opponent may be used as a measure of unprovoked aggression, whereas the subsequent trials may be used as a measure of provoked aggression (Brugman et al., 2015). Thus, we used four measures of aggression in

the current sample: unprovoked aggression measured by volume (Cronbach's alpha = 0.93), unprovoked aggression measured by duration (Cronbach's alpha = 0.96), provoked aggression measured by volume (Cronbach's alpha = 0.97), and provoked aggression measured by duration (Cronbach's alpha = 0.97).

Statistical Analyses

In order to minimize the number of statistical tests to be performed, we used several steps before testing the final conditional process models. First, we checked whether our manipulation led to a higher increase in anger and vulnerable feelings in the experimental condition compared to the control condition (interaction effects of condition by time). To test these interaction effects, we computed difference scores ($T_1 - T_0$) on anger and vulnerable feelings to include as dependent variables in independent samples t-tests (with condition as independent variable). Although we could also have used Repeated Measures ANOVAs with condition and time as independent variables (which would have generated the same results), we preferred t-tests on difference scores because we were interested only in the interaction effects (not in the main effects of condition and time), and, moreover, because t-tests can generate one-tailed p-values. We wanted to report one-tailed p-values because our hypotheses were specific about the direction of the deviations in means: We expected larger increases in anger and abandonment/abuse feelings in the experimental than in the control condition. With paired samples t-tests, we further inspected changes in anger and abandonment/abuse feelings in each condition separately. We expected no significant changes in the control condition (two-tailed testing), and expected increases (one-tailed testing) in these feelings in the experimental condition. Second, we used moderation models to investigate whether change in anger or vulnerable emotions (states) was conditional on specific schemas (traits). With simple regression analyses, we further inspected the relationship between schemas and change in anger or vulnerable emotions in each condition. When the moderation models resulted in significant interaction effects at the 0.05 significance level, we included the associated schemas and feelings in the conditional process models (see Figure 1). In the third and final step, we tested these conditional process models to investigate whether the effect of condition on various forms of aggression was mediated by change in anger or vulnerable emotions (state), and whether these indirect effects were moderated by specific schemas (trait).

Although we conducted multiple tests, we did not apply any correction to the significance levels because we conducted planned comparisons that were theory driven. By not adjusting the significance level, the analyses retained more power to detect weak, but possibly important, effects. For inference of the interaction effects (time x condition) on anger and vulnerable emotions, a power analysis with G*Power (version 3.1.9.2; Faul, Erdfelder, Buchner, & Lang, 2009) for Repeated Measures ANOVA indicated that with a significance level of 0.10 (equivalent to a one-tailed 5% significance level) and an expected correlation of 0.5 between the repeated measures, a total sample size of 28 is required to

achieve a power of 80% to detect a medium ($f = 0.25$) interaction effect. The actual test of the interaction effect was done with t-tests on the difference scores, as these allow for one-tailed testing (but have the same power). For inference of the change in anger and vulnerable emotions within each condition, a power analysis for a paired samples t-tests using a significance level of 0.05 (two-tailed) revealed that 34 participants are required to achieve 80% power to detect a medium ($d = 0.50$) effect size.

All analyses were conducted with SPSS version 24. We used the PROCESS macros (Hayes, 2013) for SPSS to test moderation models and conditional process (moderated mediation) models. The PROCESS macro is based on OLS regression analysis, and offers quantification and inference of (conditional) direct and indirect effects. In the moderation models, we examined the statistical significance of the interaction effect, and also examined the significance regions of the effect of condition on induction of feelings as defined by values of the moderator (i.e., the schemas). We used the Johnson-Neyman technique (Hayes, 2013; Johnson & Neyman, 1936) to identify the moderator values that demarcate the regions of significance (set at 0.05). General assumptions (e.g., linearity, homoscedasticity) for these analyses were sufficiently met. A power analysis with G*Power (version 3.1.9.2; Faul, Erdfelder, Buchner, & Lang, 2009) indicated that a total sample size of 55 is required to detect a medium interaction effect ($f^2 = 0.15$). This may suggest that our study is underpowered to detect small to medium interaction effects. Nonetheless, a sensitivity analysis with G*Power showed that we have 80% power to detect (medium to large) effect sizes (f^2) of 0.22 and higher. In the conditional process models, we used a large number (50,000) of bootstrap samples to calculate 95% bias-corrected confidence intervals (BCI) of conditional indirect effects ($(a_1 + a_3W)*b$) and indexes of moderated mediation (a_3*b). Such a large number of bootstrap samples will minimize the errors in estimation of the confidence intervals (Koehle, Brown, & Haneuse, 2009). BCIs for conditional indirect effects were calculated given values of the moderator (W) at the 10th (very low), 25th (low), 50th (moderate), 75th (high), and 90th (very high) percentile. PROCESS can perform a formal test of moderated mediation to test for the differences between these conditional indirect effects. When the BCI for the index of moderated mediation does not straddle zero, then any two conditional indirect effects are significantly different from each other (Hayes, 2013).

We reported interaction, direct, and indirect effects in unstandardized form for all analyses in order to facilitate comparison with future studies using the same instruments. For the interaction models, we reported changes in the proportion of explained variance (ΔR^2) as a measure of the effect size of the moderated effect. For the conditional process models, no effect sizes are available yet given the complexity of the models (Hayes, 2013).

RESULTS

Table 1 displays the means and standard deviations of all variables. We conducted independent samples t-tests to check whether baseline scores differed significantly between the experimental and control condition. There were no significant differences between the conditions on any of the maladaptive schemas, i.e. Abandonment, $t(35) = -1.01$, $p = .322$; Mistrust, $t(35) = 0.70$, $p = .950$; Entitlement, $t(35) = 1.17$, $p = .25$; and Insufficient self-control, $t(35) = .66$, $p = .52$. Neither were there differences in baseline scores of anger, $t(35) = -1.11$, $p = .274$; explicit vulnerable feelings related to abandonment and abuse, $t(35) = -1.16$, $p = 0.255$; or implicit vulnerable feelings (self-abuse associations), $t(35) = -1.50$, $p = .143$.

To investigate the effects of our manipulation on anger and vulnerable feelings (interaction effects of condition by time), we conducted independent samples t-tests with condition as independent variable and difference scores (T1 – T0) on anger and vulnerable feelings as dependent variables. Results are displayed in Table 1. Increases in state anger and explicit abandonment/abuse were larger in the experimental condition than in the control condition. For increase in explicit abandonment/abuse, Levene's test indicated unequal variances ($F = 26.68$, $p < 0.001$), so degrees of freedom were adjusted from 35 to 20. There were no significant differences between the experimental and control condition in increase in implicit self-abuse associations. To investigate changes in anger and vulnerable feelings in each condition separately, we conducted paired samples (T_0 and T_1 scores) t-tests in each condition (see Table 1 for results). In line with our hypothesis, there was a significant increase in anger in the experimental condition. Interestingly, we also found a significant change in anger in the control condition: Participants reported less anger after they were interviewed about a recent, neutral situation they experienced. Changes in explicit abandonment/abuse feelings over time were not significant in the control condition, and the increase in such feelings just failed to reach significance in the experimental condition. Thus, although we found an overall interaction effect of condition by time on abandonment/abuse feelings, changes in such feelings were not significant in each condition separately. We should note, however, that the increase in explicit abandonment/abuse feelings in the experimental condition was very close to significance (one-tailed $p = 0.051$). Changes in implicit self-abuse associations were not significant in either condition.

Table 1. Results of t-tests comparing means of maladaptive schemas, negative affect, and aggression between conditions and within conditions (if applicable).

Measure	Value	Condition		
		control	experimental	*t(df)* [a]
Schemas				
Abandonment	*M (SD)*	1.92 (1.01)	2.22 (1.18)	-0.83(35)
Mistrust	*M (SD)*	2.27 (0.94)	2.18 (0.99)	0.28(35)
Entitlement	*M (SD)*	2.57 (1.08)	2.17 (0.76)	1.30(35)
Insuff. self-control	*M (SD)*	2.83 (0.95)	2.62 (0.95)	0.68(35)
Negative affect				
Anger	*M (SD)* T_0	1.96 (0.89)	2.33 (1.12)	-1.11(35)
	M (SD) T_1	1.57 (0.73)	2.73 (1.48)	
	t(df) [b]	2.85(17)**	-2.70(18)**	
	M (SD) T_1-T_0	-0.39 (0.58)	0.40 (0.65)	-3.90(35)**
Expl. Aband/abuse	*M (SD)* T_0	1.40 (0.63)	1.67 (0.80)	-1.16(35)
	M (SD) T_1	1.37 (0.65)	1.93 (1.17)	
	t(df) [b]	1.14(17)	-1.72(18)	
	M (SD) T_1-T_0	-0.03 (0.12)	0.25 (0.64)	-1.86(20)*
Impl. Aband/abuse[c]	*M (SD)* T_0	-0.20 (0.29)	-0.07 (0.24)	-1.50(35)
	M (SD) T_1	-0.11 (0.25)	-0.04 (0.23)	
	t(df) [b]	-1.85(17)	-0.45(18)	
	M (SD) T_1-T_0	0.09 (0.20)	0.03 (0.32)	0.62(35)
Aggression				
Unprovoked_volume	*M (SD)*	6.94 (2.51)	7.57 (1.88)	-0.86(35)
Unprovoked_duration	*M (SD)*	6.66 (2.77)	5.99 (3.32)	0.66(35)
Provoked_volume	*M (SD)*	6.54 (2.54)	7.45 (1.88)	-1.25(35)
Provoked_duration	*M (SD)*	5.99 (2.55)	7.02 (2.59)	-1.22(35)

*$p < 0.05$; **$p < 0.01$ (One-tailed p-values for comparison of difference scores T_1-T_0 between conditions, and for comparison of T_0 an T_1 scores within the experimental condition because of hypotheses of specific direction. For other comparisons we looked at two-tailed p-values)

[a]independent samples t-test to compare mean scores between the control and experimental condition

[b]paired samples t-test to compare T_0 and T_1 scores in each condition seperately

[c]a negative score means that the participants were more likely to associate self with "love" than with "abuse". The more negative the score is, the less association of self with abuse.

Next, we investigated whether changes in state anger and vulnerable feelings were dependent on trait maladaptive schemas (moderation). As can be seen in Table 2, the effect of condition on anger change (state) was moderated by the (trait) schemas Abandonment and Entitlement, not by Mistrust and Insufficient self-control. The effect of condition on change in explicit abandonment/abuse (state) was moderated by the (trait) schema Abandonment, but not Mistrust. Neither Abandonment nor Mistrust (trait) moderated the effect of condition on change in implicit self-abuse associations (state). Thus, including these schemas as a moderator did not add to the finding of the previous t-tests: our experimental manipulation did not result in larger increases in self-abuse associations in the experimental condition than in the control condition. In Figure 2, we plotted the significant

interaction effects of condition by schema on anger and explicit abandonment/abuse. It shows that with higher scores on the Abandonment and Entitlement schemas (trait), the difference in change in anger (state) between the two conditions increased. Thus, stronger schemas of Abandonment (scores 1.49 and higher) and Entitlement (scores 1.78 and higher) led to higher increases in anger in the experimental compared to the control condition. The same pattern was shown for the change in explicit vulnerable feelings related to abandonment and abuse: A stronger Abandonment schema (scores 2.15 and higher) led to higher increase in state Abandonment/abuse feelings in the experimental condition compared to the control condition. When zooming in on the effects of these schemas on change in feelings within each condition, we found that a higher Abandonment schema led to a significantly larger increase in state anger in the experimental condition, $F(1,18) = 17.07$, $p = 0.001$, whereas it led to a significantly larger decrease in state anger in the control condition, $F(1,17) = 5.42$, $p = 0.033$. A higher Abandonment schema also led to a significantly larger increase in state abandonment/abuse feelings in the experimental condition, $F(1,18) = 10.94$, $p = 0.004$, but it did not affect the change in state abandonment/abuse feelings in the control condition, $F(1,17) = 0.45$, $p = 0.511$. A higher Entitlement schema did not lead to significantly larger increases in state anger in the experimental condition, $F(1,18) = 2.46$, $p = 0.135$, but it did lead to significantly larger decreases in state anger in the control condition, $F(1,17) = 5.57$, $p = 0031$.

Table 2. Results of moderation analyses: Interaction effects, standard errors, and increases in explained variance due to interaction

	R^2	*Effect* (a_3)	*SE*	$\Delta R^{2\,a}$	Region of significance for values of moderator
Y = change in anger					
Cond x Abandonment	0.58	0.68	0.15	0.25**	Abandonment > 1.49 (62%)
Cond x Mistrust	0.32	0.13	0.22	0.01	
Cond x Entitlement	0.57	0.57	0.22	0.12*	Entitlement > 1.78 (65%)
Cond x Insufficient SC	0.32	0.21	0.23	0.02	
Y = change in vulnerable feelings related to abandonment and abuse					
Cond x Abandonment	0.44	0.32	0.12	0.13*	Abandonment > 2.15 (43%)
Cond x Mistrust	0.10	0.02	0.17	<0.01	
Y = change in implicit abuse					
Cond x Abandonment	0.21	0.05	0.09	0.01	
Cond x Mistrust	0.06	-0.01	0.10	<0.01	

*$p < .05$, **$p < .001$

[a] R^2 increase due to interaction

Finally, we tested the conditional process models investigating moderated mediation of the effects of condition on various measures of aggression. Direct effects and indexes of moderated mediation for these models are displayed in Table 3. For inference of the direct

effects and moderated indirect effects, we calculated 95% bias-corrected confidence intervals (BCI) based on 50,000 bootstrap samples. We found that the effect of condition on unprovoked aggression was mediated by change in anger (state), and that this indirect effect was moderated by schemas of Abandonment and Entitlement (trait). This was true for both measures of unprovoked aggression, whereas no direct or indirect effects were found on provoked aggression. Furthermore, these indirect effects on unprovoked aggression were found only through change in state anger, not through change in state abandonment/abuse. Thus, although feelings of explicit abandonment/abuse conditionally (i.e., dependent on Abandonment schema) increased after the recollection of injustice, they did not subsequently lead to aggression. Coefficients for the conditional process models that had a significant moderated mediation index are displayed in Figure 2.

Table 3. Direct effects and indexes of moderation mediation of conditional process models

X = condition, M = change in anger

			W = schema Abandonment			*W* = schema Entitlement		
	Direct effect		Moderated mediation			Moderated mediation		
Y	*c'*	*se*	a_3b	*se (boot)*	Region of significance	a_3b	*se (boot)*	Region of significance
Unprovoked volume	-0.03	0.86	0.56*	0.32	≥50th pct	0.48*	0.29	50th & 90th pct
Unprovoked duration	-1.99	1.15	1.13*	0.42	≥50th pct	0.96*	0.44	≥50th pct
Provoked volume	0.33	0.87	0.43	0.37	none	0.43	0.37	none
Provoked duration	0.39	1.01	0.55	0.41	none	0.46	0.39	none

X = condition, M = change in vulnerable feelings relates to abandonment and abuse

			W = schema Abandonment		
	Direct effect		Moderated mediation		
Y	*c'*	*se*	a_3b	*se (boot)*	Region of significance
Unprovoked volume	0.64	0.77	-0.01	0.30	none
Unprovoked duration	-1.03	1.05	0.41	0.44	none
Provoked volume	0.61	0.76	0.34	0.24	none
Provoked duration	0.85	0.89	0.20	0.35	none

*95% bias-corrected bootstrap intervals did not straddle zero.

Zooming in on these statistically significant moderated mediation models, we generally found indirect effects on unprovoked aggression through change in state anger only for participants who scored moderate (50th percentile), high (75th percentile), or very high (90th percentile) on the Abandonment and Entitlement schemas. One exception was that the indirect effect on unprovoked aggression as measured by volume just failed to

reach significance for those scoring high (75th percentile) on Entitlement (BCI = >-0.01 – 2.03). No indirect effects were found for participants scoring low (25th percentile) or very low (10th percentile) on the Abandonment and Entitlement schemas. Direct effects in all models were not statistically significant. Thus, in the models for which significant indirect effects were found, anger increase (conditional on the extent to which Abandonment and Entitlement schemas were present) fully explained the relationship between recollection of injustice and unprovoked aggression.

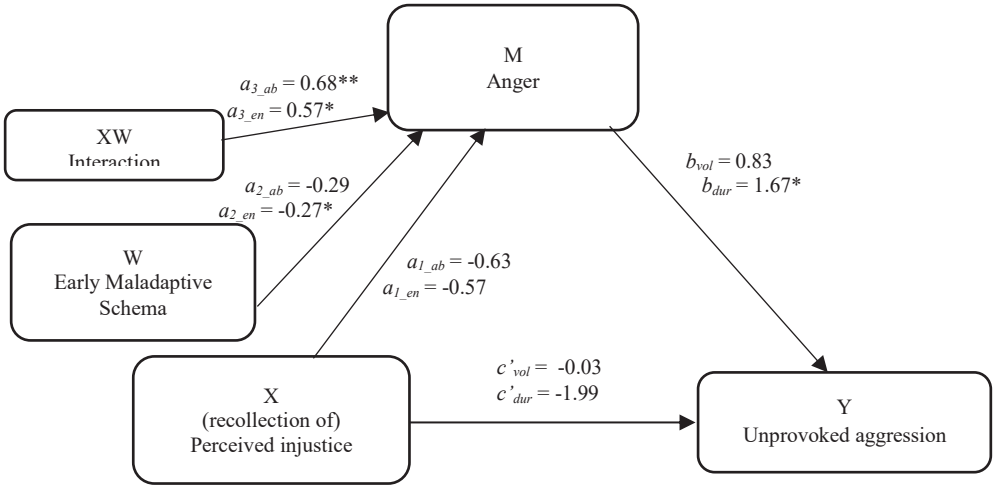


Figure 2. Coefficients of mediated moderation models that had a significant mediated moderation index. ab = Abandonment schema; en = Entitlement schema; vol = volume; dur = duration. *p < 0.05; **p < 0.001.

DISCUSSION

We investigated whether early maladaptive schemas influence the causal links between perceived injustice, negative affect (anger or vulnerable feelings related to abandonment and abuse), and aggression in adolescent boys with severe behavior problems. Although perceived injustice did not predict aggression directly, we found that higher levels of specific schemas (Abandonment and Entitlement) strengthened the effects of perceived injustice on anger, subsequently leading to unprovoked aggression. In other words, specific schemas might underlie aggression, but aggression is shown only after the occurrence of perceived injustice and when anger (not vulnerable feelings related to abandonment and abuse) is triggered.

Consistent with Berkowitz' theory (1990, 2012), our findings suggest that specific schemas play a critical role in the occurrence of anger and aggression when encountering perceived injustice: Participants with higher levels of Abandonment and Entitlement were likely to display more anger and aggression than participants with lower levels of such

schemas. The effect was most profound for the schema Abandonment, a schema that is usually associated with internalizing emotions such as loss and sadness. Nevertheless, our finding that the Abandonment schema underlies anger and aggression is consistent with previous research demonstrating that externalizing behaviors may just as well be a manifestation of vulnerable schemas related to disconnection and rejection experiences (e.g., Abandonment) as internalizing behaviors (van Wijk-Herbrink, Bernstein, et al., 2017).

A noteworthy result of our study was that the schemas Abandonment and Entitlement not only led to higher increases in anger in the experimental condition, but that they also affected anger in the control condition: Participants with higher levels of Abandonment and Entitlement schemas reported larger decreases in state anger after they were interviewed about a neutral situation, whereas we expected no changes to occur. One could argue that participating in the experiment was an uncertain situation: They were not fully informed about the specific tasks and goals of the study, but they were informed that it included measures of injustice, loneliness, and aggression. Adolescents with a distorted view on the availability and stability of significant others (Abandonment schema) or with the belief that they shouldn't have to do anything they don't want to do (Entitlement schema) may experience such uncertain situations as more stressful or threatening, which may increase baseline levels of anger. Indeed, ad hoc correlation analyses showed significant positive relations between baseline anger and both the Abandonment schema ($r = 0.52$, $p = 0.001$) and the Entitlement schema ($r = 0.39$, $p = 0.016$). Reduction of anger could have been established because the participant encountered an empathic interviewer showing interest in an aspect of his life, or because the participant felt relieved by the relative ease of the tasks.

In contrast to feelings of anger, vulnerable feelings did not decrease after the neutral interview, regardless of the level of the schema Abandonment. Whereas anger can easily be appeased by strangers, abandonment presupposes a relationship with a degree of closeness or intimacy. Reduction of such feelings is unlikely in a 5 minute interview with someone who was met for the first time.

The effects of perceived injustice – in combination with high levels of Abandonment and Entitlement – on anger and subsequent aggression disappeared after all participants were provoked with sound blasts. Thus, the sound blasts provocation eliminated the effects of our experimental manipulation. Provoking all participants with sound blasts thwarted their personal well-being, which may have elicited anger on its' own (Batson et al., 2007), superseding the initial effects of perceived injustice on anger and subsequent aggression.

Although in situations of perceived injustice, higher levels of specific schemas led to higher increases of both anger and vulnerable feelings, subsequent aggression occurred only through anger and not through vulnerable feelings. Although it is commonly assumed that emotions directly influence behavior, research has also suggested that behavior is

guided by the anticipation of emotion (DeWall, Baumeister, Chester, & Bushman, 2016). Anticipation of emotion is likely biased by dysfunctional beliefs or maladaptive schemas (e.g., if I don't aggress now, I will be a victim, and I will feel miserable afterwards). In this light, it could be that aggression rather is a means of preventing vulnerable feelings of abandonment and abuse, than that it occurs as a result of such emotions. On the other hand, it could also be that vulnerable feelings do in fact mediate the effect of perceived injustice on aggression, but not on a conscious level. Unconscious, affective emotional responses are thought to have a different, more direct effect on behavior (Baumeister, Vohs, DeWall, & Zhang, 2007).

In our study, we attempted to assess such unconscious emotions by measuring implicit self-abuse associations. Nonetheless, we did not include this measure in our predictive models of aggression, because our experimental manipulation did not increase the self-abuse association, regardless of the level of specific schemas. Despite the implicit nature of the measurement, participants' responses may have been obscured because our ST-IAT explicitly contained the word 'abuse' (whereas the explicit measure did not). Relating the self to abuse requires that the adolescent is capable of conceptualizing maltreatment experiences as belonging to the category of abuse, as well as recognizing that their experiences deviate from social standards (Wekerle et al., 2001). This may not have been the case, particularly given the frame of reference of our participants who are highly likely to stem from unstable and hazardous families and environments (Van Dam, Nijhof, Scholte, & Veerman, 2010).

More research is needed to disentangle the influence of current emotions versus anticipated emotions on aggression in case of perceived injustice, for example by using a mood-freezing procedure (see Manucia, Baumann, & Cialdini, 1984). This procedure was designed to persuade participants that their emotional states are frozen and temporarily cannot be changed. Bushman, Baumeister, and Philips (2001) used mood-freezing to demonstrate that people engage in aggression in order to improve their emotional states: People who had been induced to believe that aggression would make them feel better responded more aggressively to criticism, but this aggression was eliminated when they had been given a (bogus) pill to temporarily freeze their mood. Furthermore, future research should incorporate valid implicit instruments measuring unconscious, automatic affective responses to perceived injustice in order to investigate whether they can cause aggression. Of course, replication studies are needed to validate our findings. For example, we have no reasonable explanation for the unexpected finding that the Mistrust and Insufficient Self-control schemas did not affect the occurrence of specific emotions in situations perceived as unfair.

One of the strengths of this study is its experimental design, allowing us to draw conclusions about causality of effects. Furthermore, we used a behavioral measure of aggression instead of self-report. Although we consider this a strength, of course we should bear in mind that laboratory aggression may differ from aggression occurring in natural

settings. Nonetheless, research has strongly supported the external validity of laboratory studies using this measure of aggression (Anderson & Bushman, 1997). In natural settings, other variables (e.g, drug and alcohol use, peer pressure) may play a moderating role in the effect of perceived injustice on anger and aggression. Furthermore, because we conducted this experiment in a closed treatment setting in which aggressive behavior is usually followed by negative consequences (e.g., less privileges), participants may have felt restrained in displaying aggressive behavior during the experiment. Another limitation of our study is the relatively small sample size. The response rate, however, was rather good considering the challenging population of oppositional and offensive adolescents. A final limitation is that we conducted this study in adolescent boys only, so we do not know whether the results are generalizable to adolescent girls or to adults.

The finding that, in situations perceived as unfair, certain maladaptive schemas cause anger and subsequent aggression has important implications for clinical practice. Dealing with anger and aggression in treatment settings is challenging, and in an attempt to prevent escalation the focus is usually on the problematic behavior itself: the schematic activation is easily overlooked. Interventions for aggression, such as Aggression Regulation Therapy, usually only target (coping) behaviors. The findings of this study emphasize the need for interventions targeting maladaptive schemas, such as Schema Therapy (Young, Klosko, & Weishaar), when treating aggression in adolescent boys with severe behavior problems. Schema Therapy is an integrative psychotherapy that has been shown effective for adult patients with personality disorders (Bamelis, Evers, Spinhoven, & Arntz, 2014; Farrel, Shaw, & Webber, 2009; Giesen-Bloo et al., 2006; Nadort et al., 2009), including forensic patients with severe antisocial behaviors (Bernstein et al., 2017). The literature on Schema Therapy in adolescents is still scarce, but the present study is in line with the preliminary finding that Schema Therapy may ameliorate behavior problems in adolescents with disruptive behavior disorders (Van Wijk-Herbrink, Broers, et al., 2017).

In conclusion, this study contributed to our understanding of aggression in response to perceived injustice in adolescent boys with severe behavior problems. We found that certain maladaptive schemas predict aggression in these patients, but only in situations perceived as unfair and when anger is triggered. Importantly, even a vulnerable schema such as Abandonment, which is usually associated with internalizing problems, was shown to underlie anger and aggression. Interventions targeting maladaptive schemas may aid the prevention and treatment of aggression in this population.

Part II

Effectiveness and Clinical Application of ST for Adolescents with Externalizing Behavior Problems

CHAPTER 5

Multiple case study

Van Wijk-Herbrink, M. F., Broers, N. J., Roelofs, J., & Bernstein, D. P. (2017). Schema Therapy in adolescents with disruptive behavior disorders. *International Journal of Forensic Mental Health, 16* (3), 261–279. doi: 10.1080/14999013.2017.1352053

ABSTRACT

This multiple case study examined the feasibility and effectiveness of an innovative residential treatment, based on Schema Therapy (ST), for adolescents with disruptive behaviors and Personality Disorder (PD) traits. We reported case narratives as well as quantitative changes in behavior problems, early maladaptive schemas, and schema modes of four patients. In terms of feasibility, the therapist was able to use the full range of ST techniques (working in the here and now, experiential techniques, and cognitive-behavioral techniques) with all four patients. We trained and coached treatment teams in ST theory and practice, and were partially successful in involving patients' parents in the ST treatment. Qualitative and quantitative findings showed that patients improved in their behavior problems, early maladaptive schemas, and schema modes. These results support the feasibility of ST for adolescents with disruptive behaviors and PD traits in residential treatment, and provide preliminary evidence of its effectiveness.

Key words: schema therapy, adolescents, disruptive behaviors, personality disorder traits, residential treatment

BACKGROUND

Disruptive behaviors in adolescence (e.g., oppositional, rule-breaking, and aggressive behaviors) cause substantial harm to the adolescents, their families, and the community, underscoring the need for treatment. Adolescents with disruptive behaviors are at high risk for a variety of negative outcomes, such as delinquency (Broidy et al., 2003) and the development of personality disorders (PDs) (Gelhorn, Sakai, Price, Crowley, 2007; Helgeland, Kjelsberg, & Torgersen, 2005). They incur high societal costs, for example for juvenile justice, outpatient or inpatient settings, and special education. It has been estimated that $3.2 to $5.8 million could be saved each time an adolescent with disruptive and criminal behaviors is successfully treated (Cohen & Piquero, 2009). We developed an innovative residential treatment program for adolescents with disruptive behaviors and PD traits, and used a multiple case design to investigate its feasibility and effectiveness.

Multicomponent treatment programs have been identified as best practice for adolescents with disruptive behaviors (Eyberg, Nelson, & Boggs, 2008; Masi et al., 2011). Such programs include Multidimensional Treatment Foster Care (MTFC; Chamberlain & Smith, 2003) and Multisystemic Therapy (MST; Henggeler & Lee, 2003), both community-based programs designed to prevent residential placement of these adolescents. MST and MTFC involve problem-focused strategies targeted at current problem behaviors of the adolescent, including problematic interactions between the adolescent and significant others (e.g., parents, peers, teachers). They aim to improve the parenting skills of caregivers, ameliorating ineffective parenting practices (e.g., harsh punishment, lack of support, coercive or conflictual parenting) that strongly predict disruptive behaviors (Grusec, 2011; Odgers et al., 2008; Scaramella & Leve, 2004). Although these multicomponent treatment programs are evidence-based, their dropout rates are high, and effect sizes are only small to moderate (Dekovi & Stoltz, 2015). These programs may not be adequate when disruptive behaviors are severe (Masi et al., 2013), or when they are accompanied by other complex pathology, such as maladaptive personality traits (Manders, Dekovic, Asscher, van der Laan, & Prins, 2013; Masi et al., 2013; Winiarski et al., 2016). Although community-based treatment is desirable, admission to a residential treatment facility may be indicated when adolescent behavior becomes unmanageable.

Personality disorders (PDs) or PD traits are highly prevalent among adolescent residential patients (Grilo et al., 1998; Van Wijk-Herbrink et al, 2017). Although the classification of PDs under the age of 18 years has been the subject of debate, the Diagnostic and Statistical Manual of Mental Disorders allows for a diagnosis of all PDs, except Antisocial PD, in adolescents when the personality traits have been present for at least one year (American Psychiatric Association, 2013). There is considerable evidence that comorbid PDs are associated with higher dropout rates and poorer treatment response in adult patients (Reich, 2003; Brorson, Arnevik, Rand-Hendriksen, & Duckert, 2013). Thus, a treatment focusing on PDs may have potential to help otherwise treatment refractory adolescents with severe disruptive behaviors. Moreover, because adolescent PDs

may result in chronic patterns of antisocial behavior (Johnson et al., 2000), early intervention could be an effective means of secondary prevention (Chanen, 2015).

Schema Therapy (ST; Young, Klosko & Weishaar, 2003) is an integrative, evidence-based psychotherapy for patients with PDs and other complex psychopathology. It focuses on modifying early maladaptive schemas (EMSs), coping responses and schema modes. EMSs are repetitive, self-defeating themes or patterns that develop early in life from adverse experiences and innate temperament, and are elaborated throughout one's lifetime. EMSs (e.g., abandonment, mistrust, defectiveness, emotional deprivation) involve cognitive biases that distort perceptions of one's self and other people. When EMSs are activated, they evoke strong emotions, such as sadness, fear, anger, or guilt and shame, which, in turn, induce unhealthy or maladaptive efforts to cope with this schematic activation. Schema modes (see Table 1 for an overview) are the transitory emotional states that occur when EMSs are triggered. They combine both schematic activation and (behavioral) coping responses, producing emotional states that can change from moment to moment. For example, when in an adolescent the EMS Abandonment (i.e., the expectation of abandonment) is triggered, it evokes strong emotions, such as sadness, loss, and desperate longing. Nonetheless, when avoidance is used to cope with this EMS, the result is a state of emotional detachment or numbing, known as the Detached Protector mode. Thus, when EMS are triggered, the resulting emotional state (i.e., schema mode) depends on how the person copes with schematic activation. Dysfunctional schema modes also have implications for the therapeutic relationship, which predicts responsiveness of youths' behavior problems to treatment (Kazdin & Durbin, 2012). For example, youth who are habitually hostile or emotionally detached may be harder to engage in treatment.

In randomized clinical trials (RCTs) and implementation studies, ST has proven to be a clinically effective and cost-effective treatment for adult outpatients with Borderline PD (Asselt et al., 2008; Farrell, Shaw, & Webber, 2009; Giesen-Bloo et al., 2006; Nadort et al., 2009) and Cluster C, Narcissistic, and Paranoid PDs (Bamelis, Evers, Spinhoven, & Arntz, 2014). Recently, ST has been adapted for adult forensic patients with severe disruptive behaviors and externalizing PDs, such as Antisocial, Narcissistic, Borderline and Paranoid PDs (Bernstein, Arntz, & de Vos, 2007). The adaptations include the addition of four forensic schema modes, i.e., Angry Protector mode, Conning and Manipulative mode, Predator mode, and Paranoid Overcontroller mode (see Table 1). In a 3-year, multicenter RCT of forensic PD inpatients in the Netherlands, ST patients showed greater improvements in PD symptoms, risk and protector factors for (violent) recidivism, and early maladaptive schemas and schema modes, compared to patients receiving treatment-as-usual (TAU) in the same high-security facilities (Bernstein et al., 2017). ST patients also moved through the rehabilitation process, involving reintegration in the community, more quickly than TAU patients, suggesting that ST may be more cost-effective than standard forensic treatment. This evidence of effectiveness in adults with antisocial behaviors raises

the possibility that ST could also prove effective in ameliorating severe disruptive behaviors in youth with PD traits.

Table 1. Schema Mode Descriptions Based on the Mode Observer Scale (Bernstein et al., 2009)

Schema mode	Description
Vulnerable Child	Feels overwhelmed by painful emotions, e.g., anxiety, sadness, grief, or shame/humiliation
Angry Child	Feels and ventilates uncontrolled anger or rage in response to unmet basic needs; acts like a child throwing a temper tantrum
Impulsive, Undisciplined Child	Acts as a spoiled child that cannot tolerate the frustration of limits
Lonely Child	Feels lonely, feels that no one can understand, sooth or comfort one
Happy, Playful Child	Feels loved and connected, expresses joyful feelings, and acts in a playful and spontaneous manner
Detached Protector	Uses emotional detachment to protect one from painful emotions, feels "nothing", avoids being close to others
Detached Self-soother / Self-stimulator	Uses addictive or compulsive behaviors, or self-stimulating behaviors to calm and sooth oneself
Compliant Surrenderer	Surrenders to the real or perceived expectations or demands of others in an attempt to avoid pain or get one's needs met
Angry Protector*	Uses controlled anger to protect oneself from others who are perceived as threatening or to keep others at a distance
Complaining Protector	Complains, whines, and demands in a victimized manner that masks one's real feelings and needs
Punitive, Critical Parent	Is harshly criticizing towards the self and induces feelings of shame or guilt
Demanding Parent	Is extremely high-demanding towards the self and is never satisfied with oneself; always strives to do or achieve more.
Self-Aggrandizer	Feels superior, special or powerful; brags about oneself or acts in a self-important manner.
Bully and Attack	Acts threatening, intimidating, aggressive or coercive to get what one wants or to assert one's dominant position; experiences sadistic pleasure in attacking others
Conning and Manipulative*	Cons, lies or manipulates to achieve a certain goal, including getting what one wants, victimizing others, or escaping punishment
Predator*	Is cold, ruthless and calculating in one's focus on eliminating a threat or enemy
Paranoid* / Obsessive-compulsive Overcontroller	Exercises extreme control in an attempt to protect oneself from a real or perceived threat. The paranoid type attempts to locate and uncover a hidden, perceived threat and the obsessive-compulsive type uses order, repetition, or ritual
Healthy Adolescent	Is able to adequately reflect on oneself; is aware of one's needs and emotions; is able to get one's needs met in an appropriate manner

*Forensic modes

Recent studies support the validity and reliability of ST constructs in adolescents, including EMSs (Muris, 2006; Roelofs, Lee, Ruijten, & Lobbestael, 2011; van Vlierberghe,

Braet, Bosmans, Rosseel, & Bögels, 2010), schema coping (Van Wijk-Herbrink et al., 2017), and schema modes (Roelofs, Muris, & Lobbestael, 2015; Van Wijk-Herbrink et al., 2017). Nonetheless, research is lacking regarding ST's effectiveness in adolescent PD populations. The only study of ST's effectiveness in adolescents was a naturalistic multiple case study (Roelofs et al., 2016). Four adolescent outpatients with mood disorders and PD not otherwise specified (PDNOS) were given weekly group ST sessions, plus weekly or twice-weekly individual sessions. Parents were involved in the treatment through separate parent-group sessions. All four patients showed positive changes in maladaptive schemas and schema modes, and some patients also showed improvements in quality of life and symptoms of psychopathology. To our knowledge, no other treatment studies have tested the effectiveness of ST for adolescents, and no studies have used ST to treat adolescent PD patients with disruptive behaviors.

As a first attempt to fill in this gap, we developed and tested a treatment protocol (see Method section) using ST with adolescents in residential care for disruptive behaviors and comorbid PD traits. We used a multiple case study design to investigate the feasibility and effectiveness of this treatment protocol in four patients who were admitted to a medium secure residential treatment facility. In terms of feasibility, we hypothesized that all elements of the treatment protocol can be carried out in an adolescent residential setting, and that the full range of ST techniques (as described in the Method section and Table 3) can be employed. In terms of effectiveness, we hypothesized that for each patient during treatment: (a) healthy schema modes will increase, and unhealthy schema modes will decrease, (b) EMSs will decrease, and (c) behavior problems will decrease.

METHOD

Participants

We included four patients (two boys and two girls) who were admitted to a medium secure unit of a compulsory residential youth care (CRYC) facility. Although patients in CRYC are admitted under Dutch civil law, not criminal law, they show many similarities to adolescent forensic inpatients, and 70% of the CRYC patients have had police contacts (Nijhof, Van Dam, Veerman, Engels, & Scholte, 2010).

After an assessment period of eight to twelve weeks for each patient, the results of psychological tests, self-report questionnaires, hetero-anamnesis, psychiatric evaluation, and clinical observations were gathered. Based on these results, the treatment coordinator (a qualified psychologist) decided on DSM-IV-TR classifications (American Psychiatric Association, 2000) and eligibility for ST. Eligibility was based on a number of criteria. First, patients had to be 14 years or older, because that was the minimum age required to stay at the treatment unit. Second, the expected duration of CRYC treatment had to be at least six months, so that a reasonable dosage of ST sessions could be achieved. In the adult literature, effectiveness of Schema Therapy is positively related to treatment length or

session dosage (Jacob & Arntz, 2013). Third, patients had to suffer from at least five traits of PDs. Five PD traits can be clinically significant (Verheul, Bartak, & Widiger, 2007), and, furthermore, we did not expect all patients to already meet sufficient criteria for a full PD diagnosis considering the developmental stage of PDs in this age group. Finally, patients were found not eligible for ST when they had an IQ level below 80, acute psychotic symptoms, or a severe autism spectrum disorder (Bernstein et al., 2007). At time of inclusion, the age of the patients ranged from 15 to 17 years. Further details, such as diagnoses, treatment history, and behavior problems, of each patient are provided in Table 2.

Table 2. Characteristics of the four patients

Charact.	Billy	Mary	Toby	Jenny
Diagnoses[a]	DBD NOS; Traits of BPD, NPD, and STPD	BPD	RAD, CD, SD; Traits of NPD, psychopathic traits	ODD, DD; BPD
Contextual factors	Parents separated at young age, no contact with father, repeating conflicts with mother, limited social network	Parents separated at young age, irregular contact with father, lived with grandparent, use of Cannabis with peers	Homeless parents, raised by grandparent, mother absent during childhood, member of criminal gang	Parental fights during divorce , expelled from schools for aggression, lack of friends, father deceased
Childhood adversities	Continuous physical abuse and emotional neglect by both parents	Frequent incidents of physical violence between family members	Physical abuse by father, father engaged in criminal activities	Bullied by peers, incident of sexual abuse (rape)
Treatment history	Residential care, Multimodal therapy	Play therapy; Residential care	CRYC; Foster care; Residential care	Residential care
EMSs[b]	AB, MA, ED, DS, SI; ET, IS; US	AB, MA, ED, DS, SI, IS	AB, MA, ED, ET, IS	AB, MA, ED, DS, SI, ET, IS
Schema modes[c]	VC, AC, IC, DP, CP, SA, PP	VC, IC, DP, DS, CS, PP	VC, AC, DP, DS, SA, BA, CM, PR	VC, AC, DP, AP, BA, PP
Behavior problems	Angry outbursts, blaming others, resentment, truancy	Not complying with rules, angry outbursts, self-harm	Cannabis and MDMA use, truancy, aggression	Not complying with rules, aggression, resentment
Police contacts	Suspicion of prostitution	Running away from home, shoplifting	Convictions for drug-dealing and physical assault	Conviction for physical assault

[a]DBD NOS = Disruptive Behavior Disorder Not Otherwise Specified; RAD = Reactive Attachment Disorder; SD = Substance Dependence; ODD = Oppositional Defiant Disorder, DD = Dysthymic Disorder; BPD = Borderline PD; NPD = Narcissistic PD; STPD = Schizotypal PD

[b]AB = Abandonment; MA = Mistrust/abuse; ED = Emotional deprivation; DS = Defectiveness/shame; SI = Social isolation; EM = Enmeshment; ET = Entitlement; IS = Insufficient self-control; EI = Emotional inhibition; US = Unrelenting standards

[c]VC = Vulnerable Child; AC = Angry Child; IC = Impulsive Child; DP = Detached Protector; DS = Detached Self-soother; AP = Angry Protector; CS = Compliant Surrenderer; CP = Complaining Protector; SA = Self-Aggrandizer; BA = Bully and Attack; CM = Conning and Manipulative; PR = Predator; PP = Punitive Parent

Procedure

The participants of this study were the first four patients referred to ST after an initial, six-month implementation period of ST, in which staff was trained in ST principles and techniques. Staff included group care workers (sociotherapists), treatment coordinators, and treatment managers. During the implementation period, staff received four days of training in ST theory and practice (with a focus on practicing ST skills in role-playing exercises). Training may be insufficient when it is not backed up by other implementation strategies, and it has been highly recommended to make use of the expertise of schema therapists when implementing ST in treatment teams (Kersten & van de Vis, 2008). Therefore, the group care workers received regular supervision by a schema therapist (certified by the Dutch Society of Schema Therapy), who was also available for consultation in case of incidents, such as acts of aggression, self-harm, or drug use. After the initial implementation period of six months, regular supervision and consultation of group care workers were continued. Additionally, every six months they received one or two days of training in ST theory and practice by the schema therapist. This schema therapist was the same person providing the individual ST sessions to all four patients in this study. She was a ST trained psychologist (ST course of 58 hours) with six years of experience in treating adolescents in CRYC, and one year of experience with ST. She received fortnightly supervision by a senior schema therapist (certified by the International Society of Schema Therapy).

The current study used a naturalistic multiple case study design. After the patients completed treatment, we extracted the data needed for this study from their clinical files. Data consisted of demographics, diagnostic information, treatment characteristics, and scores on instruments measuring schema modes, EMSs, and emotional and behavior problems (see 'Measures'). The use of these data for research purposes was part of the informed consent for clinical treatment. To preserve the confidentiality of patients, we used pseudonyms, and when presenting background information we avoided specific details that could be used to identify patients. This procedure was approved by the Ethical Committee of Maastricht University in the Netherlands.

Intervention

The ST treatment protocol includes individual ST sessions for adolescent patients in a 24-hour Schema Therapy treatment milieu, and is complemented by three family sessions. As recommended for complex psychopathology (Young et al., 2003), our ST treatment targets schema modes (schema mode work) rather than EMSs. We believe that schema mode work is more comprehensible for adolescents, because it focuses on more easily accessible states (schema modes) rather than underlying traits (EMSs). Even though the focus is on schema modes, clinical trials have demonstrated schema mode work to also affect underlying EMSs (e.g., Giesen-Bloo et al., 2006; Bernstein et al., 2017).

During the current study, the average stay in the CRYC facility was nine to twelve months. Based on this average, we aimed to provide the patients with at least 40 individual ST sessions. The ST treatment was prolonged when patients stayed for a longer period of time. Considering the expected length of stay in CRYC, the therapist and patient jointly decided on the frequency of individual ST sessions. The ST sessions initially occurred once- or twice-weekly (excluding school holidays), and the frequency usually decreased to fortnightly sessions during the last phase of treatment, working towards discharge from CRYC.

The ST treatment incorporates various psychotherapy techniques that are described in Table 3. *Limited Reparenting* (Young et al., 2003) is the basic stance adopted by all treatment staff in order to establish and maintain a safe therapeutic relationship. Limited Reparenting is used throughout ST treatment, which includes several phases: a diagnostic phase, a phase of (schema mode) change, and a generalization phase. The diagnostic phase comprises approximately 10 individual ST sessions, in which (a) the therapist and group care workers try to establish a therapeutic relationship with the patient, and (b) the patient and therapist create a schema mode model with all the relevant schema modes and their origins. From clinical experience, we know that many patients with severe behavior problems display strong coping modes, such as the Detached Protector and Angry Protector modes. They should be dealt with in the here and now, for example using *Empathic Confrontation* or *Limit Setting,* because they prevent the development of a therapeutic relationship. Experiential techniques, such as *Imagery* and the *Multiple Chair Technique,* can be used to induce emotions (Holmes & Matthew, 2005; Young et al., 2003).

The diagnostic phase is followed by a phase of change in relevant schema modes. This phase includes approximately 20 sessions, or more sessions in case of prolonged stay in CRYC. Working in the here and now and experiential techniques, including *Imagery Rescripting* (Arntz & Weertman, 1999; Young et al., 2003) are frequently used. Furthermore, cognitive-behavioral interventions may be used to detect and modify maladaptive cognitions and behaviors associated with EMSs and schema modes.

Finally, the phase of schema mode change gradually turns into the generalization phase. In this phase, changes in schema modes are maintained and generalized to situations outside of the CRYC facility. Treatment staff places more emphasis on skills training and behavioral experiments that are aimed at enhancing the Healthy Adolescent mode, preparing the patient for reintegration in the community.

The ST treatment includes three to five family therapy sessions provided by the schema therapist. Research has shown that involving parents in treatment is more efficacious than an adolescent-only treatment (Eyberg et al., 2008; Masi et al., 2011). More specifically, from an ST point of view, we believe that current interactions between patient and parents may perpetuate and reinforce EMSs and schema modes that have developed in (early) childhood. Within the family sessions, the therapist and family members explore patients' schema modes and their origin. The therapist stimulates patients to express their

emotional needs to their parents, and coaches parents to respond to the patient in an adaptive manner.

Table 3. Techniques used in ST treatment

Techniques	Description
	Used by both schema therapist and group care workers
Working in the here and now	
Limited Reparenting	The active and supportive effort to fulfill the patients' core needs, such as safety, reciprocity, joy, autonomy, and adequate limits, within the boundaries of the professional relationship.
Empathic Confrontation	Showing empathy for a coping mode, validating its' function, but at the same time confronting the patient with the needs of another mode, usually the Vulnerable Child mode.
Limit Setting	Setting firm, but fair limits to a coping mode associated with problematic behaviors, whilst showing care for the needs of child modes.
Cognitive-behavioral techniques	
Behavioral Experiments	Creating learning experiences by testing EMS or dysfunctional thoughts in real life
Coping Skills Training	Learning and practicing adaptive coping skills to deal with anger and other negative affect
Use of Flashcards	Counteracting EMS or schema modes by writing down things that contradict associated emotions and cognitions, reminding and encouraging the patient to use healthy coping responses
	Used by schema therapist
Experiential techniques	
Multiple Chair Technique	The therapist asks the patient to sit on different chairs, and to express the needs, emotions, and cognitions of a specific mode on each chair. Both patient and therapist may represent the modes on each chair, initiating dialogues between the various (healthy and unhealthy) modes. With this technique, pros and cons of each (coping) mode may be analyzed, the usefulness of (coping) modes may be challenged, vulnerability may be induced when the patient is seated on the chair representing the Vulnerable Child mode, and self-devaluating thoughts of (parent) modes may be counteracted.
Diagnostic Imagery	The patient imagines a childhood experience, re-experiencing the needs and emotions of the child they used to be. Diagnostic imagery may help to explain why certain EMS or schema modes have developed.
Imagery Rescripting	An imagined childhood experience is rescripted by having a healthy adult (e.g., the therapist) or the current self (in Healthy Adolescent mode) to come into the image and help the child in the image to deal with the situation. Harmful situations are either stopped or prevented from happening in the image, and the child may be protected, comforted, and cheered up.
Safe Place Imagery	The patient imagines a place (real or fantasy) in which he/she feels safe, calm, and content. This technique helps to cope with overwhelming negative emotions, and is often used as a start- and/or endpoint of Imagery Rescripting.

Measures

Feasibility of ST treatment. Treatment characteristics, such as amount of sessions, session frequency, and techniques used in individual ST, were extracted from the patients' clinical files. Although we did not include specific measures of ST implementation at the treatment unit, the schema therapist observed the use of ST techniques by group care workers through supervision sessions and through visits at the treatment unit, where she was able to directly observe the interactions between patients and staff.

Schema modes. Immediately after each therapy session, the schema therapist rated the Mode Observer Scale (MOS; Bernstein, de Vos, & van den Broek, 2009) to measure the patient's schema modes that were present within the therapy session. The MOS comprises 18 schema modes, including forensic modes, which are to be rated on a 5-point Likert scale (1 = absent, 5 = extremely intense). To allow for statistical analyses that require continuous variables, we created composite scores of Unhealthy modes (i.e., the sum of scores on Vulnerable Child, Angry Child, Impulsive Child, Lonely Child, Detached Protector, Detached Self-Soother, Compliant Surrenderer, Angry Protector, Complaining Protector, Punitive Parent, Demanding Parent, Self-Aggrandizer, Bully and Attack, Conning and Manipulative, Predator, and Overcontroller modes) and Healthy modes (i.e., sum of scores on Happy Child and Healthy Adolescent modes). The MOS has shown good inter-rater reliabilities when videotapes of therapy sessions were rated: Intra-class coefficients for the agreement between two student ratings ranged from .65 to .86 (median = .76), and intra-class coefficients for the agreement between a student and an expert rating ranged from .74 to .91 (median = .80) (van den Broek, Keulen-de Vos, & Bernstein, 2011).

Early Maladaptive Schemas (EMSs). Pre- and post-treatment, each patient filled out the Young Schema Questionnaire for Adolescents (YSQ-A; van Vlierberghe, Rijkeboer, Hamers, & Braet, 2004). The YSQ-A is a 75-item self-report questionnaire that contains 15 EMSs as defined by Young and colleagues (2003). Each EMS is represented by the sum of five items. Each item rating ranged from 1 (*not at all true*) to 6 (*totally true*). Studies (Roelofs et al, 2011; van Vlierberghe et al., 2010) have supported the psychometric properties of the YSQ-A, and have demonstrated the YSQ-A to include five domains of EMSs, i.e., Disconnection and rejection (including the EMSs: mistrust/abuse, emotional deprivation, defectiveness/shame, social isolation, and abandonment/instability), Impaired autonomy (EMSs: dependency/incompetence, vulnerability to harm/illness, enmeshment/undeveloped self, and failure to achieve), Impaired limits (EMSs: entitlement/grandiosity and insufficient self-control/discipline), Other-directedness (EMSs: subjugation and self-sacrifice), and Overvigilance (EMSs: emotional inhibition and unrelenting standards). Domain scores were the sum of scores on the EMSs associated with each domain.

Emotional and behavior problems. Achenbach and Rescorla (2001) have developed several questionnaires that assess emotional and behavior problems as reported by various informants. Pre- and post-treatment, each patient filled out the Youth Self Report (YSR), and his or her CRYC mentor (i.e., one of the group care workers who was assigned to be the contact person for both the patient and his/her social network) filled out the Child Behavior Checklist (CBCL). Patients and mentors also filled out the YSR and CBCL at some point during treatment. These time points varied due to the naturalistic nature of this study: The questionnaires were filled out at session 24 (4.3 months) for Billy, at session 14 (day 4.5 months) for Mary, at session 29 (7 months) for Toby, and at session 29 (4.3 months) for Jenny. The CBCL and YSR both include 119 items about behavior problems and/or emotional problems that can be rated as 0 (*not true*), 1 (*somewhat or sometimes true*), or 2 (*very true or often true*). We used the Total problems scale as outcome variable. This scale gives a total score for emotional and behavior problems, and is the sum of all item ratings. The Total problems scale has shown good internal consistency ($\alpha = .97$ for the CBCL and $\alpha = .95$ for the YSR; Achenbach & Rescorla, 2001).

Statistical Analyses

To examine changes in schema modes, we fitted autoregressive time series models on the composite scales of Unhealthy and Healthy modes for each patient. In order to establish the reliability of these two composite scales, we calculated Cronbach's alpha values per scale for each of the four patients separately. Although these values were calculated on the basis of repeated measurements in a single subject, the absence of statistical evidence for serial correlations in the conducted time series analyses (see Results) suggests that these Alpha values can be meaningfully interpreted. We used a first-order autoregressive model to model the serial correlation, expecting a positive linear trend for the Healthy modes, and a negative linear trend for the Unhealthy modes in each patient.

We also investigated whether individual changes in self-reported EMSs and in emotional and behavior problems were statistically significant and/or clinically relevant. Statistical significance was determined by calculating Reliable Change Indexes (RCI; Jacobson, Folette, & Revenstorf, 1984). The RCI is the difference score (post-pre) divided by the standard error of the measurement, resulting in a *Z*-score with a cut-off value of 1.96 for significant change (two-sided 5% significance level; Jacobson et al., 1984). Because our hypothesis concerned a specific direction of change (we expected a decrease in both EMS, and emotional and behavioral problems), we used a one-sided 5% significance level for which the critical *Z*-value is 1.645. Thus, RCI values below -1.645 were considered indicative of significant change within a patient. Clinical relevance was determined by comparing pre-treatment and post-treatment scores to norm scores or findings from previous research.

The computation of RCIs for the EMS domains required estimates of the population variances of the scales representing EMS domains as well as estimates of the test-retest

reliabilities for these scales. Because no variances and reliability estimates of EMS domains have been reported in the literature, we made use of a clinical sample of 82 adolescents provided to us by Roelofs and colleagues (Roelofs, Onckels, & Muris, 2013). Test-retest reliabilities were not available for this sample, so instead we used Cronbach's alpha reliabilities to compute RCIs for the EMS domains (see Evans, Margison, & Barkham, 1998).

To determine clinical relevance of changes in EMS domains, we made use of percentile scores calculated from a community sample of 560 adolescents (Roelofs, 2014), because no normative data on the YSQ-A is available in the literature. We considered scores exceeding the 75th percentile to be elevated. Following Roelofs and colleagues (2016), clinically relevant change was defined as a change of at least 20 percent (e.g., a change from percentile 80 to 60).

For the computation of RCI values regarding emotional and behavior problems, the literature provides estimates of the variance for adolescents referred to mental health care (Achenbach & Rescorla, 2001). We also had at our disposal estimates of the variance for our target population based on a sample of 1031 adolescent patients in CRYC (van Wijk-Herbrink, 2015). A normal approximation of the chi-square test for a single variance (stratified by gender, with a critical absolute *Z*-value of 1.96 at a two-sided 5% significance level) showed that all but one of the variances in this sample were significantly smaller than the corresponding variances in the general clinical sample (*Z*-statistics for the CBCL were -5.18 for boys and -6.94 for girls; Z-statistics for the YSR were -3.28 for boys and -1.45 for girls). We therefore decided to base the standard errors of measurement of the difference on the variances in our CRYC sample, rather than on the variances reported for a more general clinical population. Because no test-retest reliability estimates were available for our CRYC population (nor for the general clinical population on a relevant test-retest interval), we used Cronbach's alpha coefficients (Evans et al., 1998).

We examined clinically relevant change in emotional and behavioral problems by converting raw scores to norm-referenced *T*-scores ($M = 50$, $SD = 10$) as provided by Achenbach and Rescorla (2001). They have determined elevated *T*-scores between 60 and 63 to fall within the borderline clinical range, and elevations above 63 within the clinical range.

RESULTS

The treatment characteristics of each patient, such as amount of sessions provided, session frequency, and techniques used, are displayed in Table 4.

Table 4. Treatment characteristics of the four patients

Characteristics	Billy	Mary	Toby	Jenny
		ST treatment		
Duration (months)	12.5	7	8.5	12.5
Individual sessions	52	27	34	42
	8	12	8	11
Family sessions	0	0	3	1
Session frequency[a]	S1-10 once a week; S11-39 twice a week; S39-44 once a week; S45-52 fortnightly	S1-14 once a week; S15-24 twice a week; S25-27 fortnightly	S1-10 once a week; S11-29 twice a week; S30-34 once a week	S1-29 twice a week; S30-38 once a week; S39-42 fortnightly
Techniques (as described in Table 3) used by Schema Therapist				
Working in the here and now	All techniques	Limited Reparenting & Empathic Confrontation	All techniques	All techniques
Experiential techniques	All techniques	Multiple Chair Technique, Imagery Rescripting, Safe Place Imagery	All techniques	All techniques
Cognitive-behavioral techniques	All techniques	All techniques	Behavioral Experiments & Coping Skills Training	All techniques
		Other treatment		
Arts therapy sessions	20	0	0	0
Family home visits	5	2	0	0

[a]S = Session

Case Narratives

Billy.

Treatment goal 1: engaging in therapy. The first goal of treatment was to break through Billy's patterns of complaining about treatment staff and fellow patients (Complaining Protector mode) and denying his problematic behaviors or the need for treatment (Detached Protector mode). The therapist increased the session frequency from once- to twice-weekly sessions in order to enhance the therapeutic relationship. She used Empathic Confrontation, explaining that his complaining and denying sides had a function: They prevented him from talking about negative emotions, and therefore from feeling emotionally overwhelmed. On the other hand, his avoidance also had a disadvantage: He felt lonely because he could not share his feelings with anyone. Group care workers repeatedly used the same Empathic Confrontation technique whenever he would show avoidance at the treatment unit. Over time, Billy was increasingly able to initiate

conversations with group care workers about his feelings and thoughts, and to ask for their help. He also disclosed negative childhood memories and expressed emotional vulnerability during individual therapy sessions. This was likely facilitated by the use of Imagery Rescripting.

Using Imagery Rescripting, the therapist asked Billy to close his eyes and imagine himself as a little child in a difficult situation. He often saw an image of his mother physically abusing him. The therapist rescripted the image by entering the image and telling his mother to stop the abuse. The therapist made sure Billy felt safe, for example by letting him imagine that she was standing between him and his mother. When he would still feel anxious, the therapist told him to imagine a glass wall between him and his mother, so that she could not hurt him anymore. The therapist then confronted his mother with her abusive behaviors and their devastating effects on Billy. She asked Billy about his mother's reactions to what she was saying, and continued to confront his mother until Billy said she got the message. The therapist also asked Billy how he felt in the rescripted image, and he reported feeling relieved that someone noticed his pain and dared to confront his mother with her harmful behaviors. The Imagery Rescripting continued with the therapist asking Billy what else he needed to feel better, and Billy often wanted to go somewhere with the therapist where he could play and enjoy himself (e.g., the playground or the zoo). The therapist asked him to imagine them going there, which led him to feel better before the therapist ended the Imagery Rescripting exercise.

Treatment goal 2: developing a positive but realistic self-image. Billy showed a tendency to either overcompensate his low self-esteem by acting superior (Self-Aggrandizer mode) or to be overly self-critical (Punitive Parent mode). The therapist used the Multiple Chair Technique to deal with these tendencies. For example, she asked Billy to sit on a chair and play the role of his self-aggrandizing side. First, the therapist asked him questions about the origin and advantages of this side. Then, the therapist asked him to sit on another chair and play the role of his healthy side, exploring the disadvantages of his self-aggrandizer side. At the treatment unit, group care workers used Empathic Confrontation: They pointed out to Billy that his tendency to put himself above other people drove them away, leaving him feeling alone. Although Billy sometimes still acted superior, he was increasingly responsive to feedback from others on his self-aggrandizing behaviors. With regard to his self-criticism, the therapist and group care workers consistently pointed out his tendency to criticize himself and how this left him feeling bad. They helped him to identify his strengths and to formulate helpful thoughts, which served as an antidote for his self-critical side. Over time, his self-criticism lessened, and he began to feel better about himself.

Treatment goal 3: reducing conflicts with treatment staff, teachers, and his mother. Billy's tendency to react to negative feedback or limits with angry outbursts (Impulsive and Angry Child modes) led to conflicts with others. Using Imagery, the therapist asked Billy to

imagine a recent conflict and to experience his feelings of anger in that situation. She asked him to focus on these angry feelings, and then instructed him to let go of the image and, instead, to imagine a situation from his (early) childhood in which he experienced the same anger. It became clear that his anger was linked to early experiences of emotional neglect and unfair treatment. Using Imagery Rescripting, the therapist entered the image and confronted the people (most often one of his parents, occasionally a teacher or peer) who neglected or mistreated Billy. She subsequently helped him to feel better in the image by asking him what he would like to do next in the image or by using the Safe Place Imagery technique (see Table 3). After such exercises, the therapist explained that his current reactions to feedback and limits were caused by these early experiences of neglect and unfair treatment, and that he may therefore misinterpret other people's intentions. At the treatment unit, group care workers reminded Billy to check their intentions whenever he felt neglected or treated unfairly, and helped him practice healthy reactions to negative feedback and limits. Over time, the frequency and duration of conflicts with treatment staff and school teachers decreased.

Family sessions were planned to work on the reduction of conflicts between Billy and his mother, but his mother repeatedly failed to show up. A non-ST family counselor with an outreach service provided five family sessions at his mother's home. In these sessions, the family counselor helped Billy to tell his mother how he felt when she mistreated him, and how this affected him when growing up. His mother told Billy about her own struggles in life, and how her own feelings of powerlessness and fury resulted in extreme punitive behaviors towards him. Some mutual understanding was built. Although the relationship with his mother still involved repeating conflicts, they restored their contact more quickly.

Mary.

Treatment goal 1: establishing a therapeutic relationship with treatment staff. Mary initially refused to talk to anyone about her past experiences or current thoughts and feelings (Detached Protector mode). Her therapist and group care workers used Empathic Confrontation, explaining that there is a side of her that was keeping other people at a distance. Although she probably had good reasons for doing that, it must also have left her feeling lonely. Treatment staff accepted her reluctance to talk to them, but also consistently told her that they were willing to listen to her and to help her at any time. The therapist increased the session frequency from once to twice a week, showing her that she was available whenever Mary would choose to talk about anything. During the therapy sessions, Mary occasionally agreed to do a Multiple Chair exercise. Her therapist asked Mary to sit on a chair and play the role of her Detached Protector mode. Her therapist asked questions about the need for this protective side of her, and Mary told her that she would not be able to control her emotions once she would start talking about them. She was afraid that she would feel so bad that it would lead to severe self-harm and maybe even

a suicide attempt. Mary was able to discuss these concerns with her therapist and with group care workers, and arrangements were made to help her feel more secure in expressing her feelings (e.g., the second part of individual therapy sessions was spent by having a walk together, or going to the animal farm that was situated on the CRYC grounds; after a therapy session a group care worker was always available for her if she wanted to talk or play a game). Although she would not initiate conversations with treatment staff, over time she was able to respond to their invitations to talk about her feelings.

Treatment goal 2: diminishing self-harm. Mary's self-harming behaviors occurred two to three times a week. Contrary to her fear, their frequency or severity did not increase when she showed more vulnerability to treatment staff. Her self-harm had the function of soothing emotional pain (Detached Self-Soother mode), but was also a means of punishing herself for not being good enough (Punitive Parent mode). Her therapist and group care workers used Empathic Confrontation, pointing out to her that her self-soothing side wanted to get relief from emotional pain. Although effective for a short period of time, her self-harming behaviors were damaging to her and kept her from dealing with emotional pain in a helpful way. Group care workers supported her to practice helpful coping behaviors, such as distracting herself with social activities.

Treatment staff explained that her self-punitive side was criticizing her so much that she felt the need to punish herself. They also pointed out to Mary that her self-criticism was neither realistic nor helpful. They encouraged Mary to battle her self-punitive side, and they helped her to formulate helpful thoughts that could serve as an antidote for her self-criticism. Mary wrote these helpful thoughts down on a Flashcard she carried with her all the time, and treatment staff reminded Mary to use this flashcard whenever they detected her self-punitive side. Although her self-harming behaviors still occurred, they were less severe and would sometimes be absent for weeks in a row.

Treatment goal 3: diminishing Mary's drug use and problem behaviors. Because Mary used drugs and showed oppositional behaviors prior to, but not during her treatment at the CRYC facility, treatment staff developed a stepwise reintegration plan to help her stay abstinent and diminish behavior problems in the community. First, treatment staff prepared Mary and her mother for weekend leaves at home. Because Mary's mother was not able to attend family sessions at the CRYC facility due to long travel distance, the therapist arranged a telephone meeting in which she explained the different sides of Mary to her mother. This helped her mother to understand Mary's reasons for drug use and oppositional behaviors. A non-ST family counselor provided two sessions at her mother's home, and helped Mary and her mother to agree on house rules during the weekends Mary would spend at home. The family counselor also stimulated them to discuss their expectations of each other, and what to do when Mary would not comply with the rules or when her mother would not meet Mary's expectations. The stepwise reintegration plan was

not further executed, because the court discharged Mary from CRYC prematurely. The court considered that treatment in a secured setting was no longer necessary, because Mary had not been showing any problem behaviors during her stay. During her weekend leaves at home prior to her discharge, Mary did not use drugs and complied with the rules that she and her mother agreed upon.

Toby.

Treatment goal 1: engaging in therapy. Although Toby showed many problematic and criminal behaviors before his latest admission to CRYC, such behaviors were less visible at the treatment unit. He sometimes showed aggressive behaviors towards fellow patients, but he generally complied with the rules and requests from treatment staff. He was polite and respectful to them and to his teachers at school. He said that he had changed, and that he did not experience any negative feelings anymore. He agreed to individual therapy because the court wanted him to, but he did not know what he should learn from it. He failed to show up to seven therapy sessions during the first months of treatment, claiming to have forgotten the appointments. The therapist and group care workers used Empathic Confrontation, explaining that there is a side of him that thinks he doesn't need therapy; a side that is cut off from his emotions (Detached Protector mode). They wondered, however, what happened to the little Toby who had a difficult time growing up (Vulnerable Child mode). They asked him what it was like for him to grow up in an unstable and criminal environment. Toby occasionally acknowledged some vulnerability, but refused to discuss it any further or to do experiential exercises in therapy sessions. The therapist used Limit Setting to confront Toby with the persistence of his detached side, which was refusing to engage in therapy. She told him that they could not continue therapy unless he was willing to help the therapist reach his vulnerable side. She explained that his detached side did not have to disappear completely, but it should give some room to his vulnerability in order to continue the therapy. Toby agreed, and some rules were set for the therapy sessions (e.g., he would come to every therapy session, and would agree to do an experiential exercise at least once every two weeks).

Using Imagery, the therapist asked Toby to look at a mental image of himself as a little boy. She asked him to picture himself in a difficult situation during his childhood, and in these exercises he re-experienced the troubles and fears he used to have as a child. He often saw an image of his father beating him whenever he cried or showed anxiety. The therapist used Imagery Rescripting: She told Toby to imagine her entering the image, preventing his father from beating him. The therapist asked Toby what would make him feel safe. He wanted to picture his father behind bars. He then felt safe enough to listen to the therapist confronting his father with his abusive behaviors. The therapist told his father that Toby needed him to be supportive and understanding whenever he was feeling sad and anxious. She explained that the abuse increased Toby's emotional pain and fears, and that he learned to suppress these feelings because his father did not allow him to show any

vulnerability (origin of Detached Protector mode). The therapist told Toby that, just like any other child, he had the right to express his feelings. In the Imagery Rescripting exercises, she encouraged Toby to tell her how he felt, and she made sure that she listened to him and helped him. Over time, Toby gradually disclosed his emotions and thoughts to the therapist, and group care workers also noticed him to be more open about his feelings.

Treatment goal 2: diminishing use of cannabis. Now that Toby was engaged more actively in the treatment, he disclosed to the therapist that he was secretly using cannabis on a daily basis. The therapist used the Multiple Chair Technique to explore which side of him was using cannabis. She asked him to sit on a chair and play the side of him that used drugs every day. Talking about the reasons for his drug use, they concluded that this side had a self-soothing function (Detached Self-Soother mode): He used cannabis in order to feel relaxed and refrain from aggressive behaviors. Under the influence of cannabis he would stay calm in situations he perceived as unfair, rather than reacting with aggression. His urge to self-soothe was high, as he was concerned that showing anger or aggression would result in a prolonged stay in CRYC. After he learned to adequately deal with his anger and aggressive urges (see next treatment goal), his cannabis use decreased. The treatment team created a behavioral reward system so that Toby could earn privileges (e.g., going on leave) when abstaining from drugs. Although he never achieved full abstinence during his stay in CRYC, his cannabis use decreased to an average of twice per week.

Treatment goal 3: learning to cope with anger and aggressive urges. Toby was reluctant to share any angry thoughts or feelings with the therapist, until the therapist agreed to sign a contract stating that she would not share information about such thoughts and feelings with the rest of the treatment team (of course, this agreement was valid only as long as the information did not entail a potential danger to himself or other people). This agreement enabled Toby to talk about his anger within the therapy sessions.

The therapist used the Multiple Chair Technique to explore his angry thoughts and feelings. She asked Toby to sit on a chair and play one of his angry sides (Angry Child, Bully and Attack, or Predator mode). She found that perceived injustice and desire for power were important triggers for his anger and aggressive behaviors. Next, the therapist asked Toby to sit on the chair next to her, creating room for a side of him that experiences more vulnerable feelings. She linked his feelings of injustice and desire for power to his childhood, in which he had to deal with unsafe situations and physical abuse. The therapist explained that he learned to intimidate others so that he would never feel unsafe again. Because Toby was out on the streets a lot, his angry and aggressive sides were very helpful to survive. The therapist explained that his aggressive behaviors, however, also caused problems, such as his convictions and admissions to CRYC. Finally, she asked Toby to sit on a third chair and play the role of his Healthy Adolescent mode. She stimulated him to think about helpful ways of dealing with perceived injustice and anger. His therapist would

then create a dialogue between one of his angry sides and his healthy side: She asked Toby to talk about healthy ways of coping with perceived injustice when sitting on one chair (e.g., "talk to the person who has treated you unfairly") and to respond to these ideas with his aggressive thoughts from another chair (e.g., "talking is for softies, you should attack so that the other person knows he cannot mess with you"). His therapist asked Toby to go back and forth between the chairs, and helped him to think of helpful thoughts and coping strategies whenever his angry side was dominating the dialogue. Over time, Toby developed helpful coping skills, such as checking other people's intentions and releasing tension through physical exercises.

Treatment goal 4: improving the relationship with his mother. Toby expressed anger and resentment towards his mother. He felt abandoned by her, as she had been absent during the larger part of his childhood. Family therapy sessions were set up so that his therapist could help Toby express his feelings of abandonment, anger, and resentment. His mother responded with remorse. She told him about her poor mental health at the time, and emphasized how much she had missed him. The therapist helped his mother and stepfather to attend to Toby's needs: He needed his mother to consistently be there for him, to tolerate his anger for being abandoned by her in the past, but also to set limits whenever his anger would turn into aggressive behaviors. Over time, Toby reported to have gained more trust in his mother's availability, and to feel closer to her.

Treatment goal 5: reducing the risks of criminal behaviors. Around Session 29, the court announced that Toby would be discharged from CRYC within three months. From that moment, Toby again repeatedly failed to show up on therapy sessions. He wanted to decrease the therapy sessions to once a week, but due to his frequent no-shows they occurred rather fortnightly. He again was reluctant to talk about vulnerable feelings, although this time he acknowledged such feelings to exist. However, he explained that talking about his feelings would not help him anymore. He was preparing to move back to his home town where, in his own words, "vulnerability was equivalent to weakness". Although physical exercises would still help him to cope with angry and vulnerable feelings, he admitted that he would probably also relapse into aggressive and criminal behaviors as a coping strategy. Treatment staff tried to stimulate him to think about this future and make responsible choices. Using Empathic Confrontation, they explained that there was a side of him that felt attracted to the idea of going back to his home town. This side of him strived to make money 'the quick and dirty way', and desired to feel powerful again. On the other hand, they also reminded him that the choices of this side will not be congruent with his desire to once have a family and a straight life.

Jenny.

Treatment goal 1: establishing a therapeutic relationship with treatment staff, and learning to adequately cope with anger. At the treatment unit, Jenny usually spent time alone. Whenever fellow patients or group care workers approached her, she responded with anger. Although she attended the therapy sessions, she rejected attempts of the therapist to start a conversation. Whenever the therapist suggested to end a therapy session because Jenny was not willing to talk, she became furious (Angry Child mode). She blamed the therapist for not trying hard enough to connect with her, and accused the therapist and group care workers of disliking her. The therapist and group care workers encouraged her to ventilate her anger. Instead of defending themselves, they asked her questions about her anger (e.g., "What else are you angry about?"). Only after she had had the chance to fully release her anger, they explained that her anger was triggered by vulnerable feelings: She felt that nobody was really there for her, or that nobody thought she was important enough to keep trying to connect with her. Then, staff used Empathic Confrontation, explaining that she has experienced rejection many times during her childhood. In order to protect herself from being rejected again, she learned to scare people away through expressions of anger (Angry Protector mode). This angry side of her was rather good at this, causing other people to give up on approaching her. She then felt confirmed in her idea that nobody cared for her. This caused her to feel sad and alone (Vulnerable Child mode), and it also triggered angry feelings again (Angry Child mode).

Jenny recognized this pattern, and the therapist used the Multiple Chair Technique to modify her angry side. The therapist asked Jenny to sit on a chair and play the role of her Angry Protector mode. Her therapist asked questions to explore her angry side, and found that this mode originated in her early school years. Jenny had been bullied by peers for many years, and she felt that nobody had listened to her or had helped her stop the bullying. Therefore, she had learned to mistrust people who say they like her or want to be there for her. By rejecting them, they would have no chance of rejecting or harming her. After summarizing this pattern, the therapist asked Jenny to sit on another chair, which was positioned next to the therapist. Asking Jenny to listen to her, the therapist started talking to the empty chair of the Angry Protector. She said she respected the attempts of this angry side to protect 'little Jenny', thereby pointing to Jenny in the chair next to her (implicitly suggesting that Jenny's vulnerable side was on this chair). Nevertheless, the therapist also pointed out that Jenny's angry side prevented other people from paying attention to her true feelings. The use of this technique created closeness between the therapist and Jenny (sitting in chairs next to each other), and at the same time created distance between Jenny and her angry side (in chairs opposite each other). It often led Jenny to cry and discuss her feelings of loneliness and sadness with the therapist. Over time, her angry outbursts decreased. She engaged in social activities with fellow patients, showed vulnerability, and accepted support from treatment staff.

Treatment goal 2: Improving the relationship with her mother. A family session was spent on discussing Jenny's anger, which affected the relationship with her mother. Her mother acknowledged that she tended to respond to Jenny's anger with rejection, such as not initiating contact with her for a while, or sending her to her room during weekend leaves. The therapist showed Jenny and her mother that both of them were maintaining the pattern of rejecting each other, and that something needed to change in order to break through this pattern. Consecutive family sessions to facilitate such a change did not occur, as Jenny broke off all relations with her mother after they had a physical fight during a weekend leave. This fight was initiated by Jenny after finding out that her mother had to work during her weekend leave. She felt rejected and responded with anger, which led to an angry response of her mother, creating a vicious cycle. Eventually, Jenny hit her mother, and her mother hit her back. Jenny decided to return to the CRYC facility, and refused to get back in touch with her mother. Jenny explained this decision as a way of protecting herself from being rejected again by her mother. She wanted to focus on her other treatment goals now that she had gained some trust in treatment staff. Treatment staff could not persuade her to restore the relationship with her mother during the rest of her stay in CRYC.

Treatment goal 3: developing a positive self-image and making friends. Jenny suffered from self-defeating thoughts and feelings of worthlessness, which could either result in self-punitive behavior (Punitive Parent mode) or in a – overcompensatory – superior attitude (Self-Aggrandizer mode). Because her low self-esteem originated from being bullied, the therapist used Imagery Rescripting to correct for such negative experiences. She asked Jenny to close her eyes and imagine a situation in which she was bullied as a child. She instructed her to imagine the therapist entering the image, making the bullies stop. The therapist confronted the bullies with their behaviors, emphasizing that Jenny deserved to be treated nicely. The therapist said that the bullies made Jenny feel worthless, which was unfair as Jenny was a very nice girl. She emphasized Jenny's positive characteristics. As a next step, the therapist stimulated Jenny to rescript the image using her own Healthy Adolescent mode. She asked Jenny to imagine her current self entering the image, confronting the bullies, and helping little Jenny in the same way the therapist did. Over time, Jenny's self-esteem improved. Her attitude of superiority diminished, and she made friends with three fellow patients.

Quantitative Results

All quantitative results are displayed in Table 5. To examine change in schema modes, we conducted time series analyses on composite scales of Unhealthy and Healthy modes. For the Unhealthy modes scale, Cronbach's alpha was negative for Toby (-.87), so we decided not to perform any further analyses on this scale for this patient. Inspection of Toby's item scores revealed that he showed no (or hardly any) variation on nine of the 16 schema modes

of the Unhealthy modes scale, and his scores on the remaining schema modes of this scale were inconsistent. The reliability of the Unhealthy modes scale for the other patients was .60 for Billy, .30 for Mary, and .52 for Jenny. The reliability of the Healthy modes scale was .72 for Billy, .55 for Mary, .38 for Toby, and .61 for Jenny. Although some of these reliabilities were weak due to little variation in some individual schema modes, considering the exploratory nature of this study we decided to perform all time series analyses except the one on Toby's Unhealthy modes. Two out of three patients showed a decrease in Unhealthy modes, and three out of four patients showed an increase in Healthy modes. Only Mary did not show any significant changes in Unhealthy and Healthy modes.

Table 5. Quantitative changes in schema modes, EMSs, and behavior problems for each patient

Scale		Billy[a]	Mary	Toby[b]	Jenny
		Schema modes			
		t	t	t	t
Unhealthy modes		-4.44*	0.39	-	-4.43*
Healthy modes		6.09*	1.16	3.56*	7.43*
		EMS domains			
		RCI_{2-0}	RCI_{2-0}	RCI_{2-0}	RCI_{2-0}
Disconnection/Rejection		-	-3.09*+	1.36+	-1.49
Impaired autonomy		-	-0.10	1.55+	-0.10
Impaired limits		-	-0.14	3.28+	1.64+
Other-directedness		-	-1.68*+	0.36	-1.93*+
Overvigilance		-	0.25	0.89	1.40
		Behavior problems			
		RCI	RCI	RCI	RCI
YSR problems	$T_2 - T_0$	-3.60*+	-2.04*+	-	-0.68+
(patient)	$T_1 - T_0$	-0.80+	-2.19*+	3.60+	0.60
	$T_2 - T_1$	-2.80*	0.16	-	-1.28+
CBCL problems	$T_2 - T_0$	-	-1.39+	-2.00*+	-2.11*+
(mentor)	$T_1 - T_0$	-	-0.26	0.13	-0.07
	$T_2 - T_1$	-0.80+	-1.12+	-1.87*+	-2.05*+

[a]Post-treatment scores on EMS domains, and pre-treatment scores on CBCL problems were missing

[b]We did not perform time series analysis on Unhealthy modes because of its negative Cronbach's alpha (-.87) for this patient, and post-treatment scores on YSR problems were missing

*Statistically significant ($p < .001$ for schema modes, and $RCI < -1.645$ for EMS domains and Behavior problems).

+Clinically significant change (>20% for EMS domains, and moving between clinical, borderline, and normal range for behavior problems).

Change in EMS domains was measured in three patients, and two of them showed a decrease in some domains. Mary showed elevated pre-treatment scores on the EMS domains of Disconnection/rejection and Other-directedness domains, and only in these domains we found a statistically significant and clinically relevant decrease. Jenny's pre-treatment scores were elevated on the domains of Disconnection/rejection, Other-

directedness, and Overvigilance. She only showed a statistically significant and clinically relevant decrease in the domain of Other-directedness. Toby showed no statistically significant or clinically relevant decreases in EMS domains. Instead, his results rather suggested an increase in some EMS domains. He obtained no elevated pre-treatment scores except on the domain of Overvigilance, whereas his post-treatment scores were elevated on all domains except Other-directedness.

Decreases in self-reported emotional and behavior problems were of statistical significance and clinical relevance for Billy and Mary, and only of clinical relevance for Jenny. The decreases in self-reported emotional and behavioral problems seemed to have occurred in the first part of ST treatment for Mary (Session 14-27), whereas they occurred in the latter part of ST for Billy (Session 24-52) and Jenny (Session 29-42). Toby's results suggested a self-reported increase in emotional and behavior problems during the first part of his treatment (0-29).

As rated by their mentor, all patients showed a decrease in emotional and behavior problems. Decreases were of statistical significance and clinical relevance for Toby and Jenny, whereas they were only of clinical relevance for Billy and Mary. The decreases as reported by the mentors seemed to have occurred in the latter part of the treatment for all patients.

DISCUSSION

This multiple case study investigated the feasibility and effectiveness of ST with four adolescent inpatients with disruptive behavior problems and comorbid PD traits. Our findings support the feasibility of delivering ST within a residential treatment setting, and provide preliminary evidence for the effectiveness of ST interventions with this population. Within the individual ST sessions, the schema therapist successfully used the full range of ST techniques: cognitive-behavioral techniques, experiential techniques, and working in the here and now with schema modes. While cognitive-behavioral techniques are widely used in adolescent treatment, some have considered experiential exercises to be difficult to use with adolescents, because they might perceive such exercises as 'weird' (Geerdink, Jongman, & Scholing, 20120). The adolescents in our study were willing to accept our use of experiential techniques, after we took care to explain them and address any of their concerns. Experiential exercises are considered one of the most effective tools in treating PDs, because they integrate affective experience with cognitive and behavioral processes (Beck, Freeman, & Davis, 2015). Furthermore, all four of the adolescents accepted, and appeared to benefit from, our use of the schema mode approach, including the use of terms that referred to modes (e.g., "A side of you that…"). Working in the here and now enabled us to work productively with adolescents' emotional states – such as those involving open or covert defiance, and avoidance – that often present obstacles to treatment. Through this approach, we were able to motivate and engage adolescents to meaningfully participate in

treatment, a crucial issue in adolescents who are legally mandated to residential treatment, rather than pursuing it involuntarily. Our findings are consistent with those of Roelofs and colleagues (2016), who reported that ST could be successfully implemented in adolescents with internalizing behavior problems in an ambulant setting. Our findings are the first to report successful implementation with externalizing adolescents in a residential setting.

Our quantitative findings showed that emotional and behavior problems decreased in all four patients, and most of the patients also displayed significant changes in schema modes and EMSs. Although emotional and behavior problems diminished significantly in all four patients as reported by either the patient or mentor, these changes were not consistently reported by both. Low cross-informant agreement may be due to situational differences in which problems are observed, and to observability of different types of problems. For example, youth may be more aware of their emotional problems, while informants may be more aware of their behavior problems (Rescorla et al., 2013; Stanger & Lewis, 1993).

Toby's self-reported changes in EMSs and behavior problems deviated from the other patients. His behavior problems decreased, based on his mentor's reports, but increased, along with his EMS, based on his self-report. This may be due to initial under-reporting of behavior problems and EMS. His low pre-treatment scores are in line with findings from adult studies suggesting that antisocial patients tend to under-report problematic behavior and/or negative affect (Lobbestael & Arntz, 2010; Lobbestael, Arntz, & Sieswerda, 2005). In contrast, at post-treatment, Toby reported increases in some EMSs and behavior problems. Although these self-reported increases suggest deterioration in negative affect and behavior problems, results based on other informants suggest the opposite. Perhaps Toby's self-reported increases in EMSs and behavior problems could be interpreted as greater awareness and acknowledgment of negative affect and behavior problems, rather than minimizing them. On the other hand, these self-reported increases could also be interpreted as a manipulative attempt to let people believe he was showing more vulnerability.

The results of this study are consistent with recent review studies demonstrating positive effects of early intervention for PDs (Chanen, 2015; Fonagy et al., 2015). Although concerns about incomplete personality development still cause clinicians to underdiagnose PDs in adolescents (Laurenssen, Hutsebaut, Feenstra, Van Busschbach, & Luyten, 2013), there is ample evidence for the reliability and validity of PDs in this age group (Bernstein et al., 1993; Levy et al., 1999; Kaess, Brunner, & Chanen, 2014). Especially in adolescents with complex psychopathology, we recommend conducting a proper diagnostic assessment of PDs. Fonagy and colleagues (2015) argued that neglecting PD traits in adolescents results in inappropriate treatment that potentially reinforces dysfunctional behaviors. Describing behavior problems purely in terms of behavior may detract from important underlying PD traits, missing the opportunity for early intervention

during a period when PD traits are more flexible and malleable than in adults (Chanen & McCutcheon, 2013).

More research is needed on the required dosage of treatment for adolescent PDs or PD traits. In our study, we strived for a minimum of 40 individual therapy sessions. This was not feasible for all four patients which may have influenced treatment effects. For example, the 27 sessions Mary received may have been too few to establish any change in her schema modes. Increasing the session frequency to twice a week throughout the ST treatment in residential care will increase session dosage, which is associated with effectiveness of ST (Jacob & Arntz, 2013). Moreover, studies have demonstrated session frequency to be positively related to both amount and speed of recovery (Freedman, Hoffenber, Vorus, & Frosch, 1999; Reese, Toland, & Hopkins, 2011). Increasing speed of recovery is of special interest in residential settings where treatment duration is relatively short and dependent on external factors, such as court decisions. Treatment duration may also influence the chance of accomplishing change in trait-like constructs such as EMSs, which have been shown to be quite stable over time (Riso et al., 2006; Renner et al., 2013). Nonetheless, despite the relatively short treatment duration some of our patients showed decreases in relevant EMS domains.

In our study, we were only partly successful in involving parents in the ST treatment. Research suggests that engaging parents in their child's therapy process, and improving family environment, can contribute to better treatment engagement, retention, compliance, effectiveness, and maintenance of gains (Diamond & Josephson, 2005). In residential care, supportive and positive family contacts are related to reduction of disruptive behaviors, better departure success, and better social functioning at 6-month follow up (Huefner, Pick, Smith, Stevens, & Mason, 2015). Our study suggests that providing home visits may increase the chance of engaging parents in residential treatment of their child.

Next to its strengths, this study has some limitations. First, we included only four patients, and some data were missing. Second, there was no control group, which leaves open whether the observed changes were perhaps merely a time effect, or whether they may have been caused by other factors. Third, treatment lengths varied due to court decisions, and therefore at least one patient (Mary) may not have received a sufficient dose. Fourth, self-reported improvements may have been due to other factors, such as a desire to be discharged from CRYC by court or a tendency to 'please' treatment staff. Also, reports from treatment staff may have been biased, as they were delivering the ST treatment. Fifth, we only measured the schema modes as observed within the individual ST sessions. Certain schema modes are more likely to be activated in other situations, such as interactions between patients, or between group care workers and patients. Finally, although we used a certified schema therapist to deliver the individual ST and to supervise the ST treatment by group care workers, we did not specifically assess treatment fidelity. The results of this study suggest that the ST treatment for adolescent patients with

disruptive behaviors and PD traits deserves further study. We are therefore conducting a randomized controlled trial (RCT) comparing ST treatment to treatment as usual in our CRYC facility. In addition to the ST treatment we described in the present study, the ST treatment in the RCT also comprises the use of mode cards displaying images of the different schema modes. These mode cards (*iModes;* Bernstein et al., 2017) facilitate schema mode work. The control group in our RCT receives treatment as usual, which consists of a treatment milieu based on behavioral interventions (e.g., reward system stimulating positive behaviors and discouraging undesirable behaviors) complemented by a form of individual therapy (e.g., cognitive behavioral therapy, aggression regulation therapy, trauma therapy). We use three-monthly measures on behavior problems, ST constructs (i.e., EMSs, schema coping, and schema modes), quality of life, and treatment milieu. Outcome variables are based not only on self- or staff-reported improvements, but also on objective measures (e.g., incidents of aggression, self-harm, runaways). We include two follow-up measurements, administering self-report measures to patients three and twelve months after their discharge from the CRYC facility.

To conclude, this was the first study investigating the feasibility and effectiveness of ST with adolescents displaying severe behavior problems and PD traits. Our findings provide preliminary evidence for the feasibility and effectiveness of ST with such patients in residential care, suggesting that ST may improve outcomes for this difficult-to-treat population.

CHAPTER 6

Study protocol of a quasi-randomized controlled trial

This chapter is an extended version of:

Van Wijk-Herbrink, M. F., Arntz, A. R., Broers, N. J., Roelofs, J., & Bernstein, D. P. (2017). Schema Therapy versus treatment as usual in secure residential youth care: study protocol of a quasi-randomized controlled trial. Submitted for publication.

ABSTRACT

Background. The effects of Schema Therapy (ST) have been repeatedly demonstrated in adults with PDs, but only preliminary evidence exists for the use of ST with adolescents. We designed a quasi-randomized controlled trial to investigate the effects of ST compared to TAU for adolescents with PD traits and behavior problems in court-mandated, secure residential treatment.

Design. Patients are assigned to either an ST or TAU treatment unit [expected ratio 1:1] based on availability of beds and availability of ST therapists. At baseline and every three months during treatment, patient's primary group care worker completes a checklist on patient's behavior problems (primary outcome). Patients complete self-report instruments on behavior problems, ST-related constructs, quality of life, and group climate (secondary outcomes) at these time points and additionally at three and 12 months after discharge. A power analysis indicated a total of 128 patients to be recruited to achieve power of 0.80 to detect a medium effect at a significance level of 0.05.

Interventions. In TAU treatment units, the therapeutic environment and any additional therapy or training relies heavily on cognitive-behavior theory. In ST treatment units, the therapeutic environment also comprise ST principles, and patients receive individual, twice-weekly ST sessions.

Hypotheses. We expect patients in ST to show greater improvements in outcomes and to better maintain these gains at follow-up, than patients in TAU. We also expect ST to be superior with respect to dropout, no shows for individual therapy sessions, and group climate. Mixed regression models are used to analyze the data.

Discussion. This trial is the first to compare ST with TAU in and adolescent sample, in this case in adolescent patients with behavior problems and PD traits in court-mandated, secure residential treatment. It contributes to our knowledge of effective interventions in this complex patient population.

Trial registration. This study is registered at the Dutch Trial Register (NTR6578)

Source of funding. No external funds are obtained to conduct this study.

INTRODUCTION

Adverse childhood experiences, such as harsh parenting and rejection by peers, may cause adolescents to view the world as a hostile place, and develop externalizing behavior problems (Dodge, 1993; de Castro, Veerman, Koops, Bosch, & Monshouwer, 2002). Their disruptive behaviors elicit punitive responses in adults, which in turn reinforce their hostility beliefs and disruptive behaviors (Reid, Patterson, & Snyder, 2002). Such repeating, negative cycles may influence adolescents' beliefs about themselves, other people, and the world, and may negatively impact their personality development. Indeed, the majority of adolescents with severe externalizing behavior problems in need of restrictive, residential treatment suffers from personality disorders (PDs) or PD traits (van Wijk-Herbrink, Roelofs, et al., 2017).

Although there is ample evidence for the presence of PDs in adolescents (Feenstra, Busschbach, Verheul, & Hutsebaut, 2011; Grilo et al., 1998; Johnson, Bromley, Bornstein, & Sneed, 2006; Westen, Shedler, Durett, Glass, & Martens, 2003), many clinicians are still hesitant to diagnose PDs in this age group. They are concerned about stigmatizing the adolescent patient, incomplete personality development in this age group, and the distinctiveness between PDs and normal turmoil that is associated with adolescence (Laurenssen, Hutsebaut, Feenstra, Van Busschbach, & Luyten, 2013). Although PD traits may be overclassified in early adolescence, research has shown that they are valid and stable from mid-adolescence (Bernstein et al., 1993; Cohen, Crawford, Johnson, & Kasen, 2005; Kongerslev, Chanen, & Simonsen, 2015; Johnson et al., 2000; Levy et al., 1999; Kaess, Brunner, & Chanen, 2014). Because patients with PDs are at risk of a variety of negative outcomes, including development of axis I disorders, suicide, relational and functional impairment, it is important to recognize and treat PDs in adolescence. Early intervention, during a period when personality traits are more malleable and flexible than in adult life, may prevent the development of more chronic patterns of dysfunctional behaviors (Chanen & McCutcheon, 2013; Fonagy et al., 2015).

For this reason, it is important to develop and test evidence-based treatments for PDs in adolescence. In adults, the treatments of choice for PDs are Dialectical Behavior Therapy (DBT; Linehan, 1993), Mentalisation Based Treatment (MBT; Allen & Fonagy, 2006), and Schema Therapy (Young, Klosko & Weishaar, 2003). DBT and MBT have both been adapted for adolescents, but have a primary focus on self-destructive behaviors of patients with Borderline PD. The HYPE (Helping Young People Early; Chanen et al., 2009) intervention, which involves a combination of therapy (Cognitive Analytic Therapy; Ryle, 1997), case management, and psychiatric care, is also developed specifically for adolescents with Borderline PD. ST, on the other hand, is an integrative therapy that is effective for a broad range of PDs in adults: Randomized controlled trials have shown its effectiveness for patients with Borderline PD (Asselt et al., 2008; Farrell, Shaw, & Webber, 2009; Giesen-Bloo et al., 2006; Nadort et al., 2009), Cluster C, Narcissistic, and Paranoid PDs (Bamelis, Evers, Spinhoven, & Arntz, 2014), and for forensic patients with antisocial

behavior and externalizing PDs, such as Paranoid, Narcissistic, Borderline, and Antisocial PDs (Bernstein et al., 2017). In adolescents, multiple case studies have shown preliminary evidence for the effectiveness of ST with patients with PD traits and both internalizing problems (Roelofs et al., 2016) and externalizing behavior problems (van Wijk-Herbrink, Broers, Roelofs, & Bernstein, 2017). These results suggest that ST deserves further study in adolescent populations.

ST aims to modify early maladaptive schemas (EMSs) and schema modes (Young et al., 2003). EMSs are pervasive, dysfunctional beliefs about the self, others, and the world. They develop through the interaction between a child's innate temperament and adverse childhood experiences, when the environment repeatedly fails to meet a child's basic emotional needs. EMSs are a trait-like construct, whereas schema modes can be referred to as states. Schema modes are moment-to-moment states that, in some patients, fluctuate rapidly. They arise from specific combinations of EMSs with coping styles. Young and colleagues (2003) distinguished three dysfunctional coping styles: Surrender, which refers to giving in to emotions associated with the EMS; Avoidance, meaning that one avoids situations or feelings associated with the EMS; and Overcompensation, which relates to doing the opposite of the EMS. For example, the EMS Mistrust (i.e., the belief that other people will intentionally do you harm) combined with the surrendering coping style will lead to a state in which one feels frightened (Abused Child mode). The same EMS combined with avoidance leads to a state in which one is detached from own emotions and from others (Detached Protector mode), and the EMS Mistrust combined with overcompensation will lead to a state in which one dominates and threatens others (Bully and Attack mode).

This theoretic framework of ST has been supported by research in both adults (Rijkeboer & Lobbestael, 2012) and adolescents (van Wijk-Herbrink, Bernstein, et al., 2017). Rijkeboer and Lobbestael (2012) found that schema coping styles mediated relationships between EMSs and schema modes, so that the same EMS may activate different schema modes through different coping styles. This finding was replicated in a study using a mixed clinical and non-clinical sample of adolescents (van Wijk-Herbrink, Bernstein, et al., 2017), which also found that some of the hypothesized relationships between EMSs and schema modes were not only mediated, but also moderated by schema coping (i.e., the mediation mechanisms were dependent on the level of schema coping). For example, the EMS mistrust only, or more strongly, activates the Abused Child mode through surrendering coping when higher levels of surrendering coping are reached. Furthermore, this study found that EMSs related to disconnection and rejection experiences, through different coping styles and schema modes, may result in both internalizing behavior problems and externalizing behavior problems in adolescents (van Wijk-Herbrink, Bernstein, et al., 2017). This suggests that adolescent patients both with internalizing and with externalizing behavior problems may benefit from treatments targeting EMSs (and schema coping and schema modes).

In residential treatment, ST treatment may be delivered as an individual psychotherapy as well as a milieu-based approach integrated in the 24/7 therapeutic environment created by group care workers. Group care workers face the challenge of striking the right balance between flexibility and the organizational needs for control (Bastiaanssen et al., 2012; Scholte & van der Ploeg, 2000; van der Helm, Boekee, Stams, & Van der Laan, 2011). They aim to create an 'open' group climate, which is characterized by high support, opportunities for growth and autonomy, and responsivity to individual needs (Craig, 2004; van der Helm, Klapwijk, Stams, & van der Laan, 2009; van der Helm, Boekee, et al., 2011). An open group climate in residential youth care has been associated with higher treatment motivation and other positive patients characteristics (van der Helm, Beunk, Stams, & van der Laan, 2014; van der Helm et al., 2009; van der Helm, Stams, van Genabeek, & van der Laan, 2012; van der Helm, Stams, van der Stel, van de Langen, van der Laan, 2012), as well as less criminal and disruptive behaviors after returning to the community (Schubert, Mulvey, Loughran, & Losoya, 2012). The ST approach with its focus on schema modes and associated emotional needs of the patient, including the need for warmth as well as the need for fair, but firm limits, may help to create such an open group climate.

Study and Hypotheses

This controlled trial is designed to investigate the effects of ST compared to treatment as usual for patients with PD traits and severe externalizing behavior problems in court-mandated, secure residential treatment. Patients allocated to TAU are treated within a therapeutic environment that relies heavily on the Social Competence Model (Slot & Spanjaard, 1999), which entails a cognitive-behavioral approach of stimulating positive behavior and social competences of the patient. Additionally, patients in TAU may receive a form of individual therapy (e.g., cognitive-behavioral therapy (non-manualized), Eye Movement Desensitization and Reprocessing (EMDR; Shapiro, 2002)), and/or cognitive-behavioral group training. Patients allocated to ST are treated in a therapeutic environment which is not only based on the Social Competence Model, but also has incorporated ST principles. Additionally, they all receive individual ST from a schema therapist (see Van Wijk-Herbrink, Broers, et al., 2017, for description of ST treatment).

With this research design, we aim to test the following hypotheses:

1. Compared to TAU, ST results in larger improvements in behavior problems, as observed by patient's primary group care worker ('mentor'), over time (interaction effect condition*time on observed behavior problems; primary outcome).
2. Compared to TAU, ST results in larger improvements in self-reported behavior problems, EMSs, use of dysfunctional schema coping styles, schema modes, and quality of life over time (interaction effects condition*time; secondary outcomes).
3. Compared to TAU, ST has less 'no show' and dropout from individual therapy (condition main effects; secondary outcomes)

4. Compared to TAU, ST is superior in maintaining treatment gains (primary and secondary outcomes) at follow-up (three and twelve months after discharge)
5. Compared to TAU units, the group climate of ST units is more "open" (i.e., with group care workers providing more warmth, support, autonomy, and less repression) (condition main effect; other outcome)
6. Changes in behavior problems over time are mediated by changes in EMSs, schema modes, and group climate (ancillary analysis).

METHOD

Design

Figure 1 displays an overview of the study. The design of the study is a parallel-group (ST, TAU) controlled clinical trial with repeated measurements at baseline and every three months during (individually varying) treatment duration. Assessments include measures of behavior problems, ST-related constructs, quality of life, and group climate. Follow-up assessment of all self-report measures, except group climate (as patients are no longer residing at the treatment unit), are conducted at three and 12 months after the patient is discharged from secure residential youth care.

To avoid costly beds staying empty because of randomization coincidences, we adopted a quasi-randomization ('natural randomization') procedure to allocate patients to either ST or TAU units. The quasi-randomization procedure is depicted in Figure 1. First, an independent committee checks where empty beds are available when an eligible patient, who has signed informed consent, is ready to move from maximum to medium restricted care. If there is an empty bed at a ST treatment unit, the independent committee checks if the caseload of a schema therapist allows to start individual ST within six weeks after the patient's supposed transfer to the ST unit. If that is the case, the patient is allocated to ST. If that is not the case, and a TAU unit has a bed available, then the patient is allocated to TAU. If both ST and TAU conditions have no beds available, the patient is placed on a waiting list and stays in maximum restrictive care until a bed becomes available in any condition (this typically doesn't take longer than two weeks). The patient is allocated to the unit where the first bed becomes available, except when the first bed is on a ST unit whilst the caseloads of ST therapists do not allow for a new patient. The patient then waits for a bed in TAU to become available. If, in rare cases, this does not happen within a week, then the patient is placed at the ST unit with the empty bed, which is against the allocation procedure (because there is no opening slot in ST therapists' caseloads). Consequently, this patient will be removed from the study to keep it scientifically sound. The decision to assign the patient, in this rare case, to the ST unit rather than to wait longer for an empty bed in TAU is made because of ethical (the patient should not wait unnecessarily long for continuing treatment) and financial (an available bed in an ST unit should not unnecessarily stay empty) reasons. However, we expect this to happen very rarely, because usually there

is a constant flow of patients in the secure residential treatment center. We call this procedure quasi-randomization or 'natural randomization', because the allocation criteria of available beds and opening slots in therapists' caseloads are due to external factors that have nothing to do with the characteristics of the patient, and could therefore be considered as 'random'. However, we cannot rule out the possibility of bias because there was no strict randomization.

This study is designed to take place at the Ottho Gerhard Heldringstichting, a secure residential treatment center in the Netherlands, from August 2014 to August 2017. This treatment center has three TAU units and two ST units (with approximately ten beds each), at which both participants of this study and other patients (non-eligible patients or patients who refused participation) are treated. We expect an allocation ratio of 1:1.

We aim to include 128 patients in this study. This sample size was based on a power analysis using G*Power (version 3.1.9.2; Faul, Erdfelder, Buchner, & Lang, 2009) with a desired power of 80% to detect a medium posttest effect (at a two-tailed significance level of .05) using a conventional t-test. In reality, we will use mixed regression models to the analysis of the repeated measures design, so we expect sufficient power with this sample size. We based the power analysis on a conventional t-test, because no easy-to-use power analysis programs are available for mixed regression.

The research protocol is approved by the Ethical Committee of Maastricht University, and the study is registered at the Dutch Trial Register (NTR6578).

Eligibility criteria

Patients are found eligible when they meet a number of criteria. First, they need to be 14 years or older, because that is the required minimum age to stay at these treatment units. Second, the expected stay at the medium secure unit should be at least seven months, so that a reasonable dosage of ST sessions can be delivered. Third, patients should score on five or more PD traits on the Structured Clinical Interview for DSM-IV personality disorders (SCID-II; First, Gibbon, Spitzer, Williams, & Benjamin, 1997). Patients are not eligible for participation when they have an IQ below 80, or when they are suffering from acute psychotic symptoms or severe autism. The eligibility criteria of treatment duration (i.e., expected stay at medium secure unit) and IQ were changed after the first six months of data collection, because of a disappointing rate of patient inclusion thus far ($N = 6$). The required minimal treatment duration was changed from seven to six months in order to include more patients and still deliver a reasonable dosage of ST. We changed the IQ criterion so that patients are eligible when they have a minimal IQ of 70, unless they are being referred to a special treatment unit for mentally impaired adolescents. This criterion was changed, because some patients obtained an IQ score below 80 on an IQ-test (typically between 70 and 80), but were estimated to have a higher IQ in reality based on observations and school performance (i.e., the lower IQ test score may be due to underperforming because of, for example, uncooperative behavior or being under influence of drugs)

Procedure

At admission, patients first stay at a maximum restrictive care unit where their behavior is being observed and stabilized. Before being transferred to a medium restrictive care unit, treatment coordinators (psychologists) of these maximum restrictive care units screen patients for their eligibility for participation in the study. When the treatment coordinator considers a patient eligible for participation in the study, he or she asks the patient and parents for their informed consent. Patients and parents receive both verbal and written explanation of the interventions and consequences of participation, and have two weeks to consider participation. If patients and parents are willing to consider participation, these two weeks are used to check the eligibility criterion of having at least five PD traits through administration of the SCID-II (First et al., 1997) by a research assistant who was trained for this purpose. All cluster B PDs (Histrionic, Narcissistic, Borderline, and Antisocial PD including criteria for conduct disorder), being most prevalent in this patient population, are being assessed, and other PDs may also be assessed upon recommendation of the treatment coordinator. After confirmation of having at least five PD traits, and if the patient and parents have signed for their informed consent, patients are allocated to either an ST or TAU unit with the 'natural randomization' procedure as described previously (see also Figure 1). Although we use an independent committee to allocate the patients, we cannot prevent treatment coordinators and research assistants to have possible pre-knowledge about beds becoming available in treatment units.

Starting immediately after transferal to either a ST or TAU unit, participants complete self-report questionnaires on behavior problems, ST related constructs (EMSs, schema coping, and schema modes), and quality of life at a three-month interval. Each time, participants also complete a questionnaire about the group climate at their treatment unit, and their mentor (one of the group care workers) completes a questionnaire about the participant's behavior problems. As a follow-up, patients are requested to complete the self-report questionnaires three and 12 months after their discharge from the secure residential care facility. Patients are offered a gift voucher worth five euros for each completed measurement during treatment, and a gift voucher worth ten euros for each completed follow-up measurement.

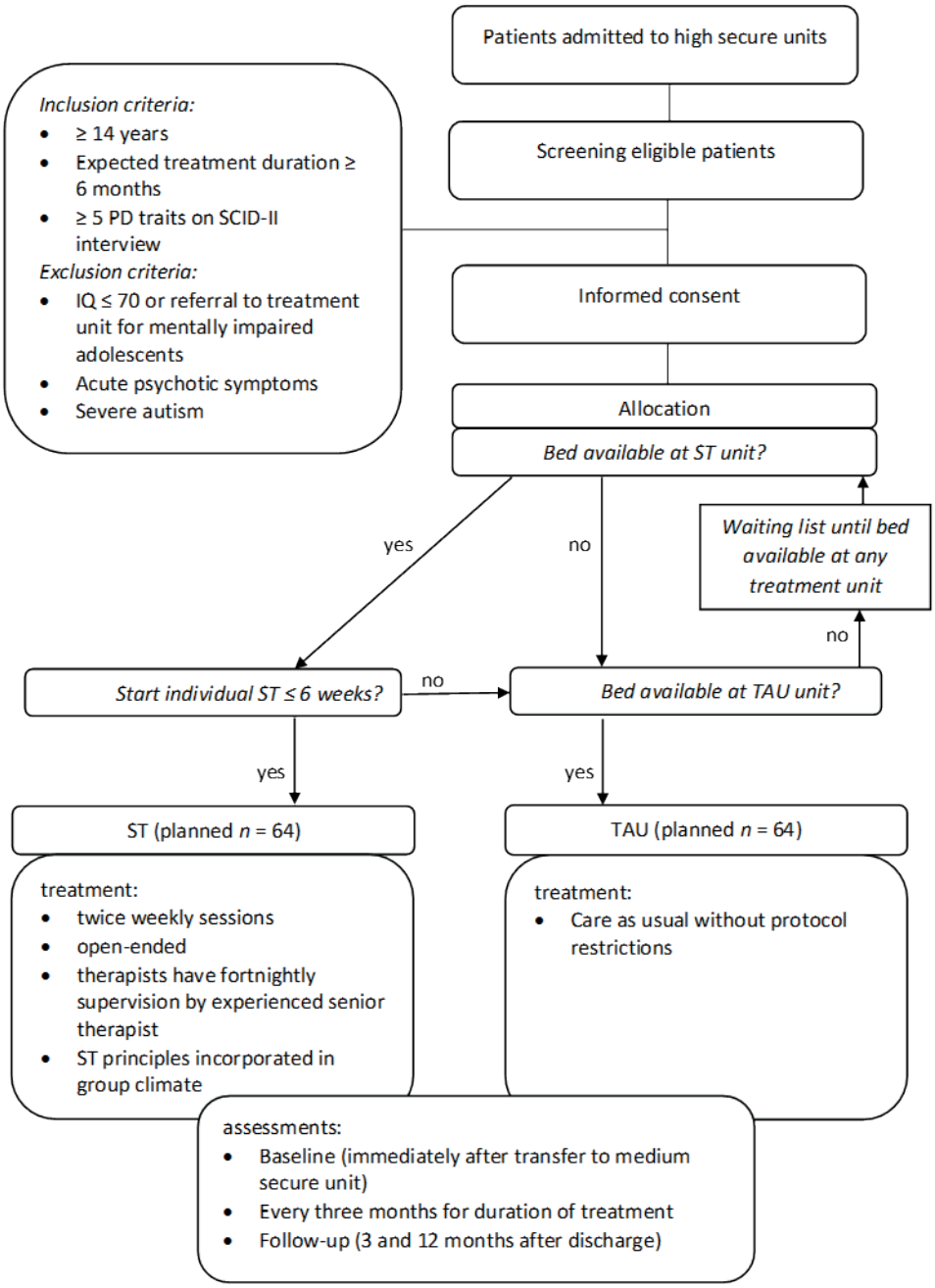


Figure 1. Flow chart of study design. ST = Schema Therapy; TAU = treatment as usual

Therapists and Group Care Workers

ST therapists are psychologists who attended a 50-hour course in ST with patients with PDs, addiction, and aggression, and are certified by the Dutch Society of Schema Therapy. They receive fortnightly supervision by a senior schema therapist certified by the International Society of Schema Therapy. One ST therapist also delivers individual therapy in TAU. To check for treatment integrity, individual therapy sessions of all therapists, of both ST and TAU, are audiotaped.

All group care workers (both TAU and ST) have received a two-day training in the Social Competence Model (Slot & Spanjaard, 1999) when starting to work at the treatment center where this study is running. Group care workers from ST units additionally received two days of training in ST principles and techniques, and receive 4-6 hour booster trainings every six months. Furthermore, the ST therapists provide these group care workers with regular supervision, and are also available for consultation in case of incidents, such as acts of aggression, self-harm, or drug use.

Intervention

Schema Therapy (ST). The ST treatment in this study includes the incorporation of ST principles in the treatment approach by group care workers and individual ST sessions by a schema therapist. When appropriate and feasible, some family therapy sessions are scheduled (van Wijk-Herbrink, Broers, et al., 2017). Individual ST sessions occur twice-weekly and are delivered during the duration of treatment (open-ended). Near discharge of the patient, the session frequency may be decreased to once per week.

The ST treatment focuses on the modification of schema modes rather than EMSs, as is recommended for patients with complex psychopathology (Young et al., 2003). Clinical trials have demonstrated that a treatment focus on schema modes also affects underling EMSs (Giesen-Bloo et al., 2006; Bernstein et al., 2017). ST therapists are not following a therapy manual, but there is a framework directing treatment in several treatment phases (van Wijk-Herbrink, Broers, et al., 2017; van Wijk-Herbrink, 2017).

Treatment as usual (TAU). In the TAU condition, patients receive whatever care (except ST) they would receive when this study would not take place, mimicking usual practice. The treatment coordinators create individual treatment plans, matching patients to (combinations of) treatment based on patient's (descriptive) diagnoses and treatment history. Therapies and trainings in TAU usually are based on cognitive-behavioral theory, and are delivered once a week. Individual therapy is usually open-ended and non-manualized (except for the protocol used with EMDR), whereas group trainings are restricted to a fixed number of sessions and are manualized.

Instruments

Primary outcome: Observed behavior problems. Behavior problems are rated by group care workers on the Child Behavior Checklist (CBCL 6-18; Achenbach & Rescorla, 2001). This checklist comprises a total of 119 items, rated as 0 = *not true*, 1 = *somewhat or sometimes true*, or 2 = *very true or often true*. The Total Problems scale is represented by the sum of ratings on all 119 items. Psychometric properties of the Dutch version of this checklist are good, with internal consistency of 0.99 and test-retest reliability of 0.89 for the Total Problems scale, and good capacity to distinguish between non-referred and referred youth (Verhulst & van der Ende, 2013).

Secondary Outcomes: Self-Reported Behavior Problems, ST Related Constructs, Quality of Life, and Group Climate.

Behavior problems. Patients complete the Youth Self-Report (YSR; Achenbach & Rescorla, 2001), which is the self-report version of the CBCL 6-18. Patients rate the 119 items as 0 = *not true*, 1 = *somewhat or sometimes true*, or 2 = *very true or often true*, and together these items comprise the Total Problems scale. The Dutch version of the YSR has shown good psychometric properties, with internal consistency of 0.99 and test-retest reliability of 0.79 for the Total Problems scale, and good capacity to distinguish between non-referred and referred youth (Verhulst & van der Ende, 2013).

EMSs. EMS are measured by the Young Schema Questionnaire for Adolescents (YSQ-A; van Vlierberghe, Rijkeboer, Hamers, & Braet, 2004) reflecting 15 EMSs identified by Young (1994). Participants rate its 75 items on a six-point Likert scale ranging from 1 = *not at all true* to 6 = *totally true*. Each EMS is represented by the mean score on five items. According to Young's theory (Young et al., 2003), the EMSs tap into five domains: Disconnection and Rejection (i.e., expectations that one's emotional needs will not be met in a predictable manner), Impaired Autonomy/Performance (i.e., negative expectations about one's abilities to function independently or perform successfully), Impaired Limits (i.e., deficiency in internalized limits, taking responsibility, and long-term goal orientation), Other-Directedness (i.e., excessive focus on pleasing others at the expense of own feeling and needs), and Overvigilance/Inhibition (i.e., excessive emphasis on suppressing one's urges and on meeting one's rigid, internalized rules and expectations at the expense of self-expression or happiness). Although some researchers found that some of these domains may better be combined (to form three or four domains; Muris, 2006; Calvete, Estevez, de Arroyabe, & Ruiz; Hoffart et al., 2005), confirmatory factor analyses showed that all three-, four-, and original five-factor models showed good, comparable fits (van Vlierberghe et al., 2010). Therefore, in line with Young's theory, the five domains described above are used as outcome variables. Internal consistencies for these domains range from 0.77 to 0.92, and domains of Disconnection and Rejection, Impaired Autonomy/Performance, and Other-

Directedness distinguished well between referred and non-referred adolescents (van Vlierberghe et al., 2010).

Schema coping. Schema coping styles are measured by the Schema Coping Inventory (SCI; Rijkeboer, Lobbestael, Arntz, & van Genderen, 2010). The SCI comprises 12 items that can be rated on a seven-point Likert scale ranging from 1 = *totally disagree* to 7 = *totally agree*. Each coping style (i.e., Surrender, Avoidance, and Overcompensation) is represented by four items. This factor structure was found and cross-validated in adult samples (Rijkeboer & Lobbestael, 2016), and replicated in adolescent samples (van Wijk-Herbrink, Roelofs, et al., 2017). Internal consistency in the adult samples ranged from 0.75 to 0.86, $m = 0.80$, and in the clinical adolescent sample (constituting patients in treatment for externalizing behaviors) from 0.71 to 0.78, $m = 0.75$. Meaningful associations have been found between the coping styles and personality traits in the adult samples, and between the coping styles and behavior problems in adolescent samples (Rijkeboer & Lobbestael, 2016; van Wijk-Herbrink, Roelofs, et al., 2017).

Schema modes. Schema modes are assessed by a research version of the Schema Mode Inventory (SMI; Lobbestael, van Vreeswijk, Spinhoven, Schouten, & Arntz, 2010) constituting 80 items (see Keulen-de Vos et al., 2017; Van Wijk-Herbrink, Roelofs, et al., 2017). Each schema mode is the mean of five items that are rated on a six-point Likert scale ranging from 1 = *never or hardly ever* to 6 = *always*. Previous research in adolescents suggested that the schema modes tap into four factors: Internalizing modes (i.e., Abandoned Child, Lonely Child, Punitive Parent, Compliant Surrenderer, and Detached Protector), Externalizing modes (i.e., Angry Child, Enraged Child, Impulsive Child, Undisciplined Child, and Bully and Attack mode), Overachieving modes (i.e., Self-Aggrandizer, Demanding Parent, and Overcontroller), and Healthy modes (i.e., Healthy Adolescent and Happy Child) (van Wijk-Herbrink, Roelofs, et al., 2017). These four factors are mean scores on the associated schema modes, and are used as outcome variables in the present study. Compared to healthy controls, both adult and adolescent patients have been shown to score lower on healthy modes, and higher on all other modes (Lobbestael et al., 2010; Reiss et al., 2011; Van Wijk-Herbrink, Roelofs, et al., 2017). Furthermore, studies have shown that schema modes explained substantial proportions of variance in psychopathology (56%) and quality of life (35%) (Roelofs et al., 2015), and that they explain additional variance in PDs above Axis I disorders (mean $R^2 = 9.2\%$; Lobbestael et al., 2010).

Quality of life. Quality of life is measured using the 10-item version of the Kidscreen (Kidscreen-10; Ravens-Sieberer et al., 2010). Participants rate each item on a five-point Likert scale with responses reflecting the intensity (*not at all* through *extremely*) or frequence (*never* through *always*) of the items asking about health and well-being. The Kidscreen-10 generates a Quality of Life index, which is used as an outcome measure for

the present study. Research has shown good psychometric properties for the Quality of Life index, including internal consistency of 0.82, two-week test-retest reliability of 0.73, stability (ICC) of 0.72, and good convergent and discriminant validity (The KIDSCREEN Group Europe, 2006).

Group climate. Group climate is assessed by the 18-item version of the Group Climate Inventory (GCI; Van der Helm, Stams, & van der Laan, 2011). Patients rate these items on a five-point Likert scale, ranging from 1 = *I do not agree* to 5 = *I totally agree*. The items tap into two scales: Open group climate, represented by items about trust, honesty, and support of group care workers, and Closed group climate, represented by items about mistrust, chaos, turmoil, and too little attention and support from group care workers. This factor structure was supported by research, and internal consistencies were 0.91 for Open group climate and 0.71 for Closed group climate (Strijbosch et al., 2014).

Screening Instruments.

Structured Clinical Interview for DSM-IV personality disorders (SCID-II). The SCID-II (First et al., 1997) is used to assess PD traits. Although the SCID-II has been developed for measuring PD traits in adults, it also is a useful instrument in adolescents (Feenstra et al., 2011; Tromp & Koot, 2010). In adults, the SCID-II has shown good inter-rater reliability and test-retest interrater reliability (Lobbestael, Leurgans, & Arntz, 2011; Maffei, Fossati, Agostoni, & Patrachi, 1997; Weertman, Arntz, Dreessen, van Velzen, & Vertommen, 2003).

Statistical analyses

This study is designed to use intention-to-treat analyses involving all patients who are assigned to a treatment condition. Effects of treatment condition on primary and secondary outcome variables are analyzed using Mixed Model analyses in SPSS, which can handle missing data and deviating time points (e.g., when a patient refuses to complete questionnaires at an exact time point of the 3-month interval, but is willing to complete them a couple of weeks later). Treatment units within treatment condition will be included as a nested variable. Development over time in outcomes will first be inspected visually and by curve fitting. When non-linear time trends are found, we will transform the time variable to obtain a linear relationship. Mixed linear modeling will be used for outcome variables on a continuous scale (Behavior problems, ST related constructs, and quality of life), and generalized mixed models will be used for count variables such as dropout and no shows.

To test our fifth hypothesis, concerning mediation of the effect of treatment condition on behavior problems, we will select an appropriate method when data collection is finished. The field of mediation analyses is still in development, and new and improved

methods will probably be available by the time we have the full dataset and results of the other hypotheses are published.

Treatment integrity is assessed by independent raters, blind for condition, rating a random selection of audiotapes. A subset of this selection will be re-rated to estimate inter-rater reliability, expressed with the intra-class correlation coefficient.

DISCUSSION

It is important to recognize PDs or PD traits in adolescents with severe externalizing behaviors, creating an opportunity for early intervention. Encouraged by preliminary evidence for the feasibility and effectiveness of ST for adolescents (Roelofs et al., 2016; van Wijk-Herbrink, Broers, et al., 2017), we designed this study to investigate the effects of ST compared to TAU for adolescents with PD traits and behavior problems in secure residential treatment. To our knowledge, this is the first clinical trial investigating the effectiveness of ST for this patient population.

With a treatment targeting both personality pathology and behavior problems, we expect ST to result in higher, and more persistent, treatment gains than TAU. The development of more chronic patterns of problematic behavior and functional impairment may be mitigated because intervention is delivered during a period when PD traits are more flexible and malleable than in adults (Chanen & McCutcheon, 2013; Fonagy et al., 2015). This could potentially mitigate negative outcomes associated with PDs, such as depression, suicide, drug use, and criminal behaviors.

We planned to finish data collection within three years, but the inclusion of patients is slower than expected. The first patient entered the clinical trial in August 2014, and, three years later, 69 patients (±23 patients per year) are included in the study. The slow rate of patient inclusion is due to national political decisions, forcing secure residential treatment facilities to reduce the number of beds, and to shorten the duration of residential treatment. As a result, one of the three TAU units had to be closed during this study. The closing of this treatment unit on its own does not affect the inclusion of patients or allocation ratio (all treatment units include both participating and non-participating patients), but the overall reduction of patients in secure residential care and the shortened treatment duration decelerate patient inclusion. At the current rate of patient inclusion, we would have to continue the study for approximately 2,5 years.

This study has several strengths. First, we used a controlled design, albeit not with true randomization but with quasi-randomization (‘natural’ randomization), allowing for conclusions about the comparative efficacy of ST. The repeated measures enable us to monitor changes over time, as well as conduct mediation analyses investigating mechanisms of change. The inclusion of follow-up measurements allows us to investigate whether patients are able to keep, or further improve in, treatment outcomes.

There are also limitations that must be acknowledged. The most important limitation is that we do not use strict randomization but quasi-randomization, which may cause selection bias. We try to mitigate the risk of selection bias by the appointment of an independent committee, which checks allocation criteria and allocates patients to the treatment conditions. Nevertheless, we cannot prevent foreknowledge of patients, research assistants, and treatment coordinators of beds becoming available (e.g., they may hear about patients who will shortly be discharged). The caseloads of ST therapists are concealed, but ST therapists and treatment coordinators may work closely together on other cases, so we cannot rule out conscious or unconscious interference with the allocation procedure, limiting allocation concealment. We try to mitigate the risk of inadequate allocation concealment by strictly instructing the independent committee to only reveal the allocation of a patient after all necessary steps (i.e., check of eligibility criterion for PD traits and written informed consent) are taken. After data collection is completed, we will compare the ST and CAU conditions at baseline to make sure that no significant differences exist on demographic and clinical variables (e.g., diagnosis) as well as baseline behavior problems and ST-related constructs.

Another limitation is that, due to financial restrictions, we did not use independent raters blind to treatment condition to assess the primary and secondary outcomes. Although our primary outcome is the behavior problems rated by the primary group care worker (mentor) of the patient, mentors cannot be blinded to treatment condition as they are part of the treatment team. Independent raters, blind to treatment condition, will rate behavior problems based on daily reports written by the team of group care workers. We will compute the inter-rater reliability between the mentor ratings and the independent ratings to check for possible biases in the mentor ratings.

Another possible limitation is that ST may be more intensive (e.g., higher session frequency) than TAU therapies or trainings. If we find that ST is superior to TAU in ameliorating behavior problems and other outcomes, then this may be due to ST being a more intensive treatment. Nonetheless, the first step in testing a new treatment is to compare it to usual care, and the treatment in our TAU condition reflects the current, standard practice in Dutch secure residential youth care. If the results are in favour of ST, then future studies should compare ST treatment to another established or experimental intervention, investigating both effectiveness and cost-effectiveness of the treatments.

Another limitation of this study is that it lacks a no-treatment or wait list control group. Because treatment is mandated by court, it is not possible to include such a control group. Furthermore, we did not include a repeated measure of PD traits, so we cannot assess to what degree ST or TAU treatment ameliorate PD traits. Also, our primary outcome measure of observed behavior problems is assessed only during treatment, not at follow-up. A final issue is that treatment duration in secure residential youth care is relatively short. Most clinical trials investigating effects of ST included 50 or more ST sessions during periods of over one year (Bamelis et al., 2014; Nadort et al., 2009; Giesen-

Bloo et al., 2006). Although in adolescence, PD traits are thought to be more flexible and malleable than in adults, the treatment duration in secure residential youth care may be too short to result in significant changes in PD traits, which could limit permanent changes in behavior problems.

Conclusion

If ST is found more effective than TAU in court-mandated in this study, it would be the first demonstration of an evidence based treatment for residential youth with PD traits and externalizing behavior problems. Given the serious problems faced by these youth, and their impact on their families and societies, evidence based treatments could help to ameliorate these problems.

CHAPTER 7

Safe Path

Van Wijk-Herbrink, M. F., Arntz, A. R., Broers, N. J., & Bernstein, D. P. (2017). Group climate and aggression in secure residential youth care: effects of a Schema Therapy milieu-based intervention. *Manuscript in preparation*.

ABSTRACT

It is difficult for group care workers in residential youth care to create a group climate that includes both warmth and involved care, and firm but fair limits. Especially when working with patients who repeatedly display disruptive behaviors, intensive training and supervision of group care workers is required. We aimed to test the preliminary effects of Safe Path, a milieu-based intervention based on principles from Schema Therapy. We implemented Safe Path in two treatment units, of which half of the staff already had prior knowledge of Schema Therapy principles, and compared it to two treatment units delivering care as usual. Outcome measures were patient ratings of group climate, staff's ratings of team functioning, reported aggressive incidents, and reported severe staff interventions. We also tested staff's use of the schema mode language, which is one of the main goals of Safe Path, to check for implementation progress. We found that, after four months, the implementation process was far from complete. This could account for the lack of significant interaction effects found: Safe Path units did not show higher improvement over time on the outcome measures than CAU units. We conclude that it is premature to draw conclusions about the effectiveness of Safe Path after four months of implementation. This preliminary report includes examples of Safe Path interventions, and discusses issues arising in the Safe Path coaching.

INTRODUCTION

Adolescent patients in court-mandated, secure residential youth care often display severe oppositional and aggressive behaviors, challenging youth care workers to balance a flexible, stimulating treatment approach with the need for control (Bastiaanssen et al., 2012; Scholte & van der Ploeg, 2000; van der Helm, Boekee, Stams, & Van der Laan, 2011). In the Netherlands, a court may mandate residential treatment to adolescents who commit crimes, display behavior that is causing danger either to the self or to others, or is otherwise unmanageable in society. Depending on the severity of behavior problems, secure residential treatment groups vary from very restrictive to less restrictive, providing 24-hour care with specialized, multidisciplinary treatment and residential school services. The adolescents live in groups of patients, supervised by youth care workers providing the daily therapeutic environment.

Youth care workers face the task of creating a therapeutic environment, also known as group climate, which is structured, safe, and rehabilitative. An 'open'[5] group climate is characterized by high support, responsivity to individual needs, opportunities for growth, and a good balance between flexibility and the organizational needs for control (Craig, 2004; van der Helm, Klapwijk, Stams, & van der Laan, 2009; van der Helm, Boekee, et al., 2011). On the contrary, a 'closed' group climate is characterized by lack of flexibility, coercion, boredom, mistrust among patients as well as between patients and care workers, and lack of mutual respect (van der Helm et al., 2009; van der Helm, Boekee, et al., 2011).

The importance of creating an open group climate is strongly supported by research. In youth, an open group climate has been shown to relate to greater treatment motivation and other positive patient characteristics (van der Helm, Beunk, Stams, & van der Laan, 2014; van der Helm et al., 2009; van der Helm, Stams, van Genabeek, & van der Laan, 2012; van der Helm, Stams, van der Stel, van de Langen, van der Laan, 2012), and to less criminal and externalizing behaviors after discharge (Schubert, Mulvey, Loughran, & Losoya, 2012). In adults, an open group climate has been associated with less institutional aggression (Ros, van der Helm, Wissink, Stams, & Schaftenaar, 2013).

Patients' behavior may sometimes interfere with staff's efforts to create an open and supportive group climate. For example, patients' aggression may induce feelings of fear, anger, and impotence in staff (Knorth, Klomp, Van den Bergh, & Noom, 2012), and may cause staff to increase their repressive reactions in order to keep control (Nijman, aCampo, Ravelli, & Merckelbach, 1999). Repressive reactions can include threatening with sanctions or actually giving sanctions impulsively, humiliating patients by authoritarian behavior, or coercing patients to do as they are told by using physical restraint. Such

[5] The distinction between an open and a closed group climate should not be confused with open and closed treatment groups, which refer to the level of restrictiveness of the residential setting.

reactions, thwarting patients' needs of safety and autonomy, may heighten the risk of another aggressive incident, leading to vicious cycles of aggression (Sameroff, 2009; Patterson & Bank, 1989; van der Helm, Boekee, et al., 2011).

Thus, creating an open group climate starts with training staff how to adequately deal with problematic behaviors, or, in other words, how to de-escalate rather than escalate those behaviors. Ryan and Deci (2008) argue that, especially in compulsory treatment settings, it is important to focus on the unfolding treatment process and on satisfying patient's basic psychological needs rather than focusing primarily on problematic behaviors. They suggest that integrating new ways of being, perceiving, and behaving within the patient's personality increases the chances of long-lasting changes in behavior and well-being (Ryan & Deci, 2008). Adolescent patients in secure residential youth care often come from multi-problem families and went through traumatic experiences (Nijhof, Veerman, Engels, & Scholte, 2011), negatively influencing their personality development. In fact, the majority of patients in secure residential youth care suffer from personality disorders or personality disorder traits (van Wijk-Herbrink, Roelofs, et al., 2017). Although clinicians have been hesitant to diagnose personality disorders in adolescents because of their incomplete personality development, there is scientific evidence that personality disorders are valid and reliable constructs in this age group (Bernstein et al., 1993; Levy et al., 1999; Kaess, Brunner, & Chanen, 2014). Moreover, failure to acknowledge personality disorder traits in youth may lead to inappropriate treatments that potentially maintain or even aggravate behavior problems (Fonagy et al., 2015).

Ideally, staff training on how to deal with problematic behaviors whilst focusing on patients' basic psychological needs builds on comprehensive theory, because clinical practice often involves new situations and unique configurations of problems that require flexibility in staff reactions (Ryan & Deci, 2008). Safe Path (Bernstein, Kersten, van den Broek, & Gelissen, 2014) is an innovative, team-based intervention that supports staff to create and maintain an open group climate for adults and youth with aggression, addiction, and antisocial behavior. It promotes the development of healthier attitudes and behaviors, which may contribute to personality change, especially when it is given as part of a multimodal treatment that also involves therapy. Safe Path has a strong theoretical basis originating from Schema Therapy (Young, Klosko, & Weishaar, 2003).

Schema Therapy is an effective treatment for adult patients with personality disorders (Asselt et al., 2008; Bamelis, Evers, Spinhoven, & Arntz, 2014; Farrel, Shaw, & Webber, 2009; Giesen-Bloo et al., 2006; Nadort et al., 2009), and, more specifically, for forensic PD patients (Bernstein et al., 2017), who share externalizing behavior patterns with many adolescents in court-mandated, residential treatment. In adolescents, two multiple case studies have shown promising results with respect to the feasibility and effectiveness of Schema Therapy in adolescents with personality disorder traits and both internalizing (Roelofs et al., 2016) and externalizing behavior problems (van Wijk-Herbrink, Broers, Roelofs, & Bernstein, 2017). Furthermore, the main constructs of ST (early maladaptive

schemas, schema coping, and schema modes) have been validated in adolescent populations (van Vlierberghe, Braet, Bosmans, Rosseel, & Bögels, 2010; Roelofs, Muris, & Lobbestael, 2015; van Wijk-Herbrink, Roelofs, et al., 2017), and appear to play a role in internalizing as well as externalizing adolescent behavior problems (van Wijk-Herbink, Roelofs, et al., 2017). This suggests that a treatment focusing on underlying emotional needs may prove effective in patients with disruptive behaviors.

With its foundation in Schema Therapy, Safe Path provides a clear conceptual framework of understanding and managing (aggressive) behavior (Bernstein et al., 2014). It focuses on schema modes, which is a central concept of Schema Therapy (Young et al., 2003). Schema modes are 'states' or 'sides of a patient' that dominate the patient's thoughts, feelings, and behavior at a certain moment. See Table 1 (published in Van Wijk-Herbrink, Broers, et al., 2017) for a description of schema modes. Schema modes can change rapidly, sometimes resulting in aggressive behavior (see Box 1). One of the main goals of Safe Path is that staff learns to use the schema mode 'language', which provides a non-punitive, accepting way of working with youth's challenging behaviors (Bernstein et al., 2014). These behaviors are reframed as 'sides of oneself', which are often triggered when youth's basic emotional needs (e.g., need for safety, predictability, connection, autonomy, and firm but fair limits) are threatened. Staff learns to recognize and meet these needs, increasing the chance of de-escalating problematic behaviors because the patient feels safe and understood, rather than criticized or rejected (Bernstein et al., 2014).

The present study sought to investigate the effects of Safe Path in court-mandated, secure residential treatment of adolescent patients with severe externalizing behaviors. We implemented Safe Path at two treatment units, and two other treatment units of the same institution formed the control group providing care as usual (CAU). CAU entailed a cognitive-behavioral approach of stimulating positive behavior and social competences of the patients (Social Competence Model; Slot & Spanjaard, 1999). In 2010, we made a first attempt to implement Schema Therapy on these two wards. We trained staff in the use of ST techniques, and some of the patients on these wards received individual ST from a trained schema therapist with a frequency of once to twice per week. At the start of this study, before implementing Safe Path, approximately half of the group care workers from the Safe Path units had received previous training in Schema Therapy. The previous Schema Therapy training consisted of two days of training when a group care worker started working at a Schema Therapy unit, and irregular supervision (average of three times a year) was provided by a schema therapist since. Because of this previous training, we hypothesized that Schema Therapy units, soon to become Safe Path units, would outperform the CAU units on several outcome measures, including aggressive incidents, group climate, severe interventions (i.e., physical interventions, seclusion, and transfer to a more restrictive unit), and team functioning at baseline. Our main hypotheses, however, concerned the interaction effects between condition and time: We hypothesized that, compared to CAU units, Safe Path units would show greater reductions of aggressive

incidents over time (primary outcome). We also hypothesized that, compared to CAU units, Safe Path units would show greater improvements in group climate, severe interventions, and team functioning over time (secondary outcomes). This preliminary report focuses on the results of the first four months after implementation of Safe Path. A complete analysis of outcomes will be conducted one year after implementation.

Table 1. Schema mode descriptions based on the Mode Observer Scale (Bernstein et al., 2009)

Schema mode	Description
Vulnerable Child	Feels overwhelmed by painful emotions, e.g., anxiety, sadness, grief, or shame/humiliation
Angry Child	Feels and ventilates uncontrolled anger or rage in response to unmet basic needs; acts like a child throwing a temper tantrum
Impulsive, Undisciplined Child	Acts as a spoiled child that cannot tolerate the frustration of limits
Lonely Child	Feels lonely, feels that no one can understand, sooth or comfort one
Happy, Playful Child	Feels loved and connected, expresses joyful feelings, and acts in a playful and spontaneous manner
Detached Protector	Uses emotional detachment to protect one from painful emotions, feels "nothing", avoids being close to others
Detached Self-soother / Self-stimulator	Uses addictive or compulsive behaviors, or self-stimulating behaviors to calm and sooth oneself
Compliant Surrenderer	Surrenders to the real or perceived expectations or demands of others in an attempt to avoid pain or get one's needs met
Angry Protector*	Uses controlled anger to protect oneself from others who are perceived as threatening or to keep others at a distance
Complaining Protector	Complains, whines, and demands in a victimized manner that masks one's real feelings and needs
Punitive, Critical Parent	Is harshly criticizing towards the self and induces feelings of shame or guilt
Demanding Parent	Is extremely high-demanding towards the self and is never satisfied with oneself; always strives to do or achieve more.
Self-Aggrandizer	Feels superior, special or powerful; brags about oneself or acts in a self-important manner.
Bully and Attack	Acts threatening, intimidating, aggressive or coercive to get what one wants or to assert one's dominant position; experiences sadistic pleasure in attacking others
Conning and Manipulative*	Cons, lies or manipulates to achieve a certain goal, including getting what one wants, victimizing others, or escaping punishment
Predator*	Is cold, ruthless and calculating in one's focus on eliminating a threat or enemy
Paranoid* / Obsessive-compulsive Overcontroller	Exercised extreme control in an attempt to protect oneself from a real or perceived threat. The paranoid type attempts to locate and uncover a hidden, perceived threat and the obsessive-compulsive type uses order, repetition, or ritual
Healthy Adolescent	Is able to adequately reflect on oneself; is aware of one's needs and emotions; is able to get one's needs met in an appropriate manner

*Forensic modes

Box 1: *Aggressive incident with Brandon*
Brandon is a 16-year-old boy with a history of neglect and abuse by his parents. He is admitted to secure residential youth care because of severe aggressive behaviors towards family members, teachers, and peers. Brandon repeatedly refused treatment and his aggressive behaviors were unmanageable in society. He is diagnosed with conduct disorder and cluster B personality disorder traits. One day at the treatment unit, he wants to smoke a cigarette but is instructed to wait until a youth care worker has time to accompany him. Brandon feels nervous because he has to take a school exam later that day, and interprets the instruction to wait as a disregard for his anxiety (Vulnerable Child mode). He reacts with anger, screaming that it is unfair that the care worker is letting him wait (Angry Child mode). When the care worker tells him to stop screaming and sends him away from the office, Brandon feels criticized and misunderstood (increase of Vulnerable Child mode). In response, he keeps screaming and starts banging on the office door (Enraged Child mode). The care worker, who is now annoyed, comes out of the office to send Bryan to his room. Brandon interprets the annoyed look on his face as threatening, and when the care worker approaches him he reacts by attacking the care worker (Bully and Attack mode). The care worker presses the alarm button, and three other group care workers come in to physically restrain Brandon. Because Brandon continues to fight back, they bring him to a seclusion room.

METHOD

Participants and procedure

This study was conducted in a secure residential treatment center for adolescents with severe externalizing behavior problems. At the two treatment units where individual Schema Therapy by a schema therapist was implemented since 2010, approximately half of the staff was previously, but irregularly trained and supervised in the use of Schema Therapy principles. To enhance the use of Schema Therapy principles at these treatment units, we implemented Safe Path, which involves intensive coaching (twice per month) of the whole treatment team by a certified schema therapist (see "*Intervention: Safe Path*" for more details on the Safe Path program).

To clinically evaluate the implementation of Safe Path, all patients and youth care workers of the two Schema Therapy units and the two control units were asked to fill out questionnaires about either group climate (patients) or team functioning (youth care workers). Patients' (and their parents') consent for use of these questionnaires and other treatment data for research purposes was part of the consent for clinical treatment. To facilitate an honest response to the items of the questionnaires, a unique code was assigned to each patient and youth care worker. The residential treatment center assured the patients and youth care workers that the data would be evaluated anonymously, and that the unique

codes were used only to match questionnaires filled out by the same person at the various measurement points.

This preliminary report focuses only on the first four months after implementation of Safe Path. The participants filled out the questionnaires on group climate or team functioning at three different time points. The baseline (T_0) was administered just prior to the first Safe Path training day, and two follow up measurements were administered two months (T_1) and four months (T_2) after the start of Safe Path. Information on use of schema mode language, aggressive incidents and use of severe interventions by staff were based on group care workers' daily reports about individual patients during the two months prior to first implementation of Safe Path (two months prior to T_0), during the two months after T_0 (T_0-T_1), and during the third and fourth month after start of Safe Path (T_1-T_2). This information was gathered and entered into an anonymous data base by the residential treatment center. Although not the focus of this preliminary report, the study will continue with measurement points at 9 and 12 months after implementation of Safe Path, and daily reports will be coded for use of mode language, aggressive incidents, and severe staff interventions during all 12 months.

The average stay of patients in this residential treatment center is eight months. During the six months of the study that we are currently reporting on, patients have been entering and leaving the treatment units at various time points, causing missing data. At any period of two months (-2 to 0, 0 to 2, and 2 to 4 months of this study), 25 to 28 patients have resided at the CAU units and 26 to 28 patients have resided at the Safe Path units for either the full two months or some part of it. Sometimes, patients were temporarily placed in a more restrictive, maximum secure unit as a 'time-out' for complying to the rules. When they were ready to go back to a medium secure unit, they were placed at a unit which has a bed available. For seven participants, this was not the same unit as they were originally residing at, so they resided at two different treatment units during this study. To ensure independence of the data between treatment units, we decided to only include the data (questionnaires and daily report data) gathered on the treatment unit that the patient resided at the longest, and to exclude the information gathered on any other treatment unit.

At the specific time points when questionnaires on group climate were administered (T0, T1, and T2), 18 to 20 patients were residing at the CAU units and 17 to 20 patients were residing at the Safe Path units. At each measurement point, one to five CAU patients and two to seven Safe Path patients did not complete the questionnaire. Of the 15 to 19 youth care workers that were working at the CAU units at the various measurement points, zero to two youth care workers did not complete the questionnaire on team functioning. Of the 17 to 18 Safe Path youth care workers, the amount of uncompleted questionnaires was also zero to two. The final sample sizes for CAU and Safe Path units per time point and per outcome measure are displayed in Table 2 and Table 3.

Intervention: Safe Path

As stated before, the Safe Path intervention (Bernstein et al., 2014) is not a therapy, but rather a milieu-based intervention for youth care workers that facilitates high responsiveness to patients' emotional needs and an open group climate. It entails a two-day training in how to recognize and respond to schema modes, and fortnightly one-hour coaching sessions with the whole team of group care workers during which patients' modes and staff's own reactions to patients' modes and behaviors are discussed. Safe Path uses an active approach to learning, with a large focus on roleplay and other exercises for the team to learn the schema mode language and Schema Therapy techniques. Team coaches are fortnightly supervised by prof. dr. D. Bernstein, the developer of the Safe Path intervention.

The mode language becomes a shared medium of communication between staff members and patients. Youth care workers learn to interpret various (problematic) behaviors in terms of modes, and to respond to these modes in accordance with the underlying emotional needs of the patient. They help patients to recognize their own modes, facilitated by the use of cards on which the various schema modes are depicted ("iModes"; Bernstein et al., 2017). Furthermore, youth care workers learn to focus on their own reactions to patients in an attempt to break vicious cycles. Box 2 describes how the aggressive incident with Brandon from Box 1 can be addressed during a Safe Path coaching session.

Box 2: *Discussing the aggressive incident between Brandon and the group care worker during a coaching session*

The coach may first ask the treatment team to use the iModes to reconstruct the sequence of Brandon's schema modes that were activated during the incident. Looking back at the description in Box 1, the first mode that was visible to the youth care worker was the Angry Child mode (when Brandon screamed that it is unfair to let him wait). Brandon's anger increased when he was sent away from the office (Enraged Child mode), and even escalated into a Bully and Attack mode when the youth care worker sent him to his room. So the iModes cards of these schema modes are placed on the table. Then, the coach may ask the youth care worker, who was involved in this particular incident, to lay down the sequence of his own schema modes during this incident. For example, perhaps the youth care worker was annoyed that Brandon was unwilling to wait for him to finish, and he thought of Brandon as being impatient and undisciplined. Thus, he was being quite critical of Brandon and his behavior (Critical Parent mode). When Brandon started to scream even louder, and started banging on the office door, the youth care worker felt angry for not getting any respect, and thought that he should let Brandon know who is in charge (Bully and Attack mode). He explains to the coach that he cannot tolerate such behavior, especially when there are other patients at the unit, because it is causing turmoil and insecurity. Nonetheless, the youth care worker acknowledges that his body language may

have come across as intimidating for Brandon. Thus, the iModes for the youth care worker's Critical Parent and Bully and Attack modes are being placed on the table, along with Brandon's modes. Looking at the combination of the youth care worker's and Brandon's modes, the team can now start to see the interaction between these modes: Brandon is responding to the youth care worker's criticism with even more anger, which, in turn, activates a state in the youth care worker that wants to show Brandon who is in charge, which, in turn, makes Brandon furious and activates an aggressive state in which he physically attacks the youth care worker.

The coach then asks the team what emotional need may be underlying Brandon's Angry Child mode, which was activated at the start of the mode sequence. Typically, an Angry Child mode needs to be able to ventilate his anger. It may need fair, but firm limits as to how to express anger, but it needs to be heard. If a person in an Angry Child mode is not facilitated to ventilate anger, then the anger is likely to escalate into more disturbing forms of anger expression. The coach asks the team what would have happened if Brandon's need to ventilate his anger was met. The team discusses that, if the youth care worker would have asked Brandon in a non-judgmental way what he was so angry about, Brandon may have told him about his anxiety for his school exam. Consequently, the youth care worker may have felt more empathy for Brandon's reaction, and would have responded differently. The youth care worker, however, explains that in this case he was caught in a conversation with another patient in the office, and that he simply did not have the time to let Brandon ventilate his anger. The coach validates the feelings of annoyance and anger the youth care worker experienced in the situation with Brandon, explaining that the team works with a complex patient population in sometimes difficult circumstances. The coach then asks the team to share their ideas of how to handle such situations; how to meet Brandon's needs even if they don't have much time. They come up with the idea of letting Brandon know that they see that he is upset, and that he probably has good reasons for being so angry. That they want to hear all about it, but that they are in the middle of a conversation with a fellow patient. And that they will talk to him as soon as the conversation with the other patient is finished. Also, they think they should suggest some things for him to do in the meantime in order to stay calm or to express his anger and unrest in a healthy manner. Although this will take up some time, the team decides that it is worth spending a couple of minutes de-escalating Brandon's behavior rather than having to deal with (and spend even more time on) an aggressive incident later on.

Measures

Implementation status. To check for success of Safe Path implementation, the daily reports of group care workers were coded for use of the schema mode language (e.g., reporting names of schema modes, or reporting about "a side of him/her"). All daily

reports were scanned during the two months before implementation of Safe Path (T_0; Nov-Dec 2016), during the first two months after the start of Safe Path training (T_0-T_1; Jan-Feb 2017), and during the third and fourth month after the start of the Safe Path training (T_1-T_2; Mar-Apr 2017). For each daily report, schema mode language was coded *1* when mode language was used, and *0* when it was not. The reports were coded by two raters working at the secure residential treatment center. For each patient, one randomly picked daily report was coded by both raters (n = 82), which resulted in good inter-rater reliability for ratings of schema mode language (Cohen's kappa = 0.88). As a measure of implementation status, we calculated the proportion of daily reports in which the mode language was used for each patient, and during each time period of this study.

Aggressive incidents by patients. Incidents of aggression were obtained from the daily reports written by youth care workers, and were coded in the same way as the use of schema mode language (see Implementation status). Incidents of aggression were coded as *1* when the daily report described acts of damage to properties, or verbal or physical aggression (including sexual violence) against other persons (typically either fellow patients or staff), and as *0* when such incidents were not described in the daily report. The aggressive incidents to be coded were well defined, which is supported by good inter-rater reliability (Cohen's kappa = 0.81). For each patient, within each time period, we calculated the proportion of daily reports including at least one aggressive incident.

Group climate. Group climate was measured by the Group Climate Inventory (GCI; Van der Helm, Stams, & Van der Laan, 2011). All youth participants rated the 36 items of this self-report questionnaire on a five-point Likert scale, ranging from *1 = 'I do not agree'* to *5 = 'I totally agree'*). The items tap into four scales, i.e., Support, Growth, Group atmosphere, and Repression. The Support scale (12 items) entails items concerning the responsivity of youth care workers to the specific needs of the patients (e.g., 'Group workers treat me with respect'). The Growth scale (8 items) assesses learning perceptions, hope for the future, and giving meaning to the youth's stay in secure residential care (e.g., 'I learn the right things here'). The Repression scale (9 items) consists of items related to the youths' perceptions of strictness and control, unfair treatment, and lack of flexibility at the treatment group (e.g., 'You have to ask permission for everything here'). The Group atmosphere scale (7 items) assesses the way patients treat and trust each other, their feelings of safety, and the possibility of getting some peace of mind at the treatment group (e.g., 'We trust each other here'). Finally, an overall score on group climate can be obtained by reversing the item scores on the Repression scale, and consequently adding these scores to the item scores on the other three scales. Then, the score is divided by the amount of items to create a mean overall score on group climate. A higher score on this overall group climate scale refers to an open and supportive group climate, and a lower score refers to a closed and repressive group climate. We used this overall scale as an

outcome variable of our study. Confirmatory factor analysis has shown support for this higher-order model in a mixed sample of juvenile delinquents and adult prisoners, and Cronbach's alpha for the overall scale was 0.82 (Van der Helm, Stams, & van der Laan, 2011). The mean overall score on group climate was used as an outcome variable in this study.

Severe interventions by youth care workers. Incidents of severe interventions were obtained from the daily reports in the same manner as use of schema mode language and incidents of patients' aggression. Staff's severe interventions were coded as *1* when the daily reports described interventions involving physical coercion (varying from taking a patient by the arm to prevent him/her from risky behavior, to physical constraint), seclusion, or transfer to a more restrictive treatment group, and as *0* when such interventions were not described in the daily report. The inter-rater reliability for severe interventions in this study was 0.71. For each patient, within each time period, we calculated the proportion of daily reports including at least one severe intervention.

Team functioning. To assess team functioning, each group care worker filled out the 18 items belonging to the team functioning scale of the Living Group Work Climate Inventory (LGWCI; Dekker, van Miert, van der Helm, & Stams, 2015). The team functioning scale is based on a validated questionnaire called PANTRIX (van der Helm, van Tol, van Scheppingen, Dekker, van Miert, & Stams, 2013). The items tap into the scales of Positive team functioning (8 items; e.g., 'Team members are capable of dealing with unexpected situations') and Negative team functioning (10 items; e.g., 'The team is in the daily grind, and relations and positions (roles) are stuck'). Scores on Positive team functioning and Negative team functioning, which were used as outcome variables in this study, are mean scores on the associated items.

Statistical analyses

Most patients had missing data, because they could be admitted to, or be discharged from, a treatment unit at any time during the study. To handle the missing data, we used Mixed Models analyses in SPSS (version 24), analyzing the full, incomplete data set using maximum likelihood estimation.

Daily report data: Staff's use of mode language (implementation status), aggressive incidents (primary outcome), and severe interventions. Because staff's use of mode language, aggressive incidents, and staff's severe interventions were represented by occurrence data within trials (e.g., proportion of daily reports including an aggressive incident), we used binary logistic regression, using Generalized Linear Mixed Models in SPSS, to model these data at the CAU and Safe Path units over time. We analyzed three models, representing the three different outcome variables (i.e., number of daily reports

with mode language, with incidents, and with severe interventions) with the number of days residing at the treatment unit (i.e., the number of observed days) as trials. In all three models, we specified time, treatment condition (CAU versus Safe Path), interaction of time * treatment condition, and treatment unit nested within treatment condition as predictors. Because there are only three repeated measures, we specified the covariance type as unstructured and included time as a factor rather than a covariate. The unbalanced design of our study required us to specify the Satterthwaite approximation for the degrees of freedom.

Questionnaire data: Group climate and team functioning. We used Linear Mixed Models with the restricted maximum likelihood approach to model group climate and team functioning of the CAU and Safe Path units over time. We analyzed three models: one with group climate as the dependent variable, one with positive team functioning as the dependent variable, and one with negative team functioning as the dependent variable. In all three models, we specified time, treatment condition (CAU versus Safe Path), interaction of time * treatment condition, and treatment unit nested within treatment condition as predictors. We specified the covariance type as unstructured and included time as a factor.

RESULTS

The estimated marginal means, standard errors, and 95% confidence intervals of all outcomes are displayed in table 2.

Implementation status

First, we checked the implementation status in the Safe Path units by modelling the proportion of daily reports in which the schema mode language was used. The estimated marginal means suggest that use of mode language is practically zero in CAU units at all three time points, whereas the use of mode language seems to increase in Safe Path units (during the first two months after implementation of Safe Path). The interaction effect of condition*time, however, was not significant when tested with generalized mixed models, $F(2,48) = 1.18$, $p = 0.315$. After removing the interaction effect from the model (sequential testing), we found a main effect of condition, $F(1,66) = 13.02$, $p = 0.001$, indicating that staff from Safe Path units use the mode language significantly more frequent than staff from TAU units. This difference already existed at baseline, so was not due to the Safe Path intervention. We also found a significant effect of time, $F(2.55) = 8.19$, $p = 0.001$, indicating an increase in use of the mode language over time. We found no significant main effect of treatment unit nested within condition, $F(2.70) = 0.72$, $p = 0.489$.

Table 2. Estimated marginal means of interaction effects condition*time on outcome variables

Outcome	time	condition	*n*	*m*	*se*	95% confidence interval	
						lower	upper
Use of mode language (proportion in daily reports)	0	CAU	24	0.00	0.00	0.00	0.02
		SP	25	0.04	0.01	0.02	0.06
	1	CAU	27	0.00	0.00	0.00	0.02
		SP	27	0.11	0.02	0.08	0.15
	2	CAU	27	0.00	0.00	0.00	1.00[a]
		SP	26	0.09	0.01	0.06	0.12
Aggressive incidents (proportion in daily reports)	0	CAU	24	0.08	0.02	0.05	0.11
		SP	25	0.06	0.01	0.04	0.09
	1	CAU	27	0.07	0.02	0.05	0.11
		SP	27	0.08	0.02	0.05	0.12
	2	CAU	27	0.06	0.01	0.04	0.09
		SP	26	0.06	0.01	0.04	0.09
Group climate (rated by patients)	0	CAU	13	2.94	0.12	2.70	3.18
		SP	13	3.18	0.12	2.94	3.42
	1	CAU	19	2.85	0.12	2.61	3.08
		SP	17	3.09	0.12	2.85	3.33
	2	CAU	18	3.00	0.11	2.79	3.22
		SP	12	3.25	0.12	3.01	3.48
Severe interventions (proportion in daily reports)	0	CAU	24	0.02	0.01	0.01	0.04
		SP	25	0.04	0.01	0.02	0.07
	1	CAU	27	0.02	0.01	0.01	0.04
		SP	27	0.04	0.01	0.03	0.07
	2	CAU	27	0.01	0.01	0.01	0.04
		SP	26	0.04	0.01	0.02	0.07
Positive team functioning (rated by staff)	0	CAU	15	3.78	0.13	3.53	4.04
		SP	15	4.16	0.13	3.90	4.42
	1	CAU	17	3.78	0.12	3.53	4.03
		SP	17	4.16	0.13	3.91	4.42
	2	CAU	16	3.75	0.11	3.53	3.96
		SP	17	4.23	0.10	4.03	4.44
Negative team functioning (rated by staff)	0	CAU	15	2.74	0.11	2.52	2.60
		SP	15	2.33	0.11	2.11	2.55
	1	CAU	17	2.94	0.14	2.66	3.22
		SP	17	2.41	0.14	2.13	2.69
	2	CAU	16	2.60	0.08	2.44	2.77
		SP	17	2.31	0.08	2.14	2.47

[a]Model estimates failed because in the TAU condition, all scores were 0 at time 2.
CAU = Care as usual, SP = Safe Path

Aggressive incidents (primary outcome)

Sequential testing showed no significant effect of the condition*time interaction, $F(2,50) = 1.29$, $p = 0.284$, nor significant main effects of condition, $F(1,85) = 0.208$, $p = 0.649$, time, $F(2,50) = 1.10$, $p = 0.341$, and treatment unit nested within treatment condition, $F(2,85) = 1.46$, $p = 0.238$. Thus, contrary to our hypotheses, there was no difference between CAU and Safe Path units with respect to number of aggressive incidents at baseline, and they also

did not differ in changes in aggressive incidents over time (in fact, there were no changes over time).

Group climate

We found no significant effect of the interaction condition*time on group climate, $F(1,35) = 3.22$, $p = 0.081$, so the CAU and Safe Path units did not differ in their change in group climate over time (in fact, sequential testing showed that there was no change in time at all: main effect of time, $F(2,38) = 0.68$, $p = 0.513$). The main effect of condition failed to reach significance, $F(1,42) = 4.05$, $p = 0.051$, so Safe Path units did not have a significantly better group climate than CAU units. The significant main effect of treatment unit nested within treatment condition, $F(2,42) = 5.81$, $p = 0.006$, shows that the treatment units within the conditions differed with respect to group climate.

Severe Staff Interventions

Sequential testing showed no significant effect of the interaction condition*time, $F(2,53) = 0.02$, $p = 0.980$, nor a significant main effect of time, $F(2,55) = 0.16$, $p = 0.854$, but a significant main effect of condition, $F(1,66) = 13.02$, $p = 0.001$. This implies that both CAU and Safe Path units did not show any changes in severe staff interventions over time, but staff from Safe Path units used severe interventions more frequently than staff from the CAU units. This difference was already present at baseline, so was not due to the Safe Path intervention. There was no main effect of treatment unit nested within treatment condition, $F(2,58) = 0.85$, $p = 0.433$.

Team Functioning

Positive team functioning. Sequential testing showed no significant effect of condition*time, $F(2,32) = 0.15$, $p = 0.861$, nor a significant main effect of time, $F(2,33) = 0.02$, $p = 0.977$, but a significant main effect of condition, $F(1,36) = 13.77$, $p = 0.001$. Thus, both CAU and Safe Path units showed no significant changes in positive team functioning over time, but staff from Safe Path units rated their positive team functioning to be better than staff from CAU units. This difference was already present at baseline, so was not due to the Safe Path intervention. No significant main effect of treatment unit nested within treatment condition was found, $F(2,36) = 1.63$, $p = 0.210$.

Negative team functioning. Sequential testing showed no significant effect of condition*time, $F(2,30) = 1.01$, $p = 0.378$, but a significant main effect of condition, $F(1,39) = 9.37$, $p = 0.004$. Thus, there were no differences between CAU and Safe Path units in changes in negative team functioning over time, but staff from Safe Path units showed less negative (i.e., better) team functioning than staff from CAU units. This

difference was already present at baseline, so it was not due to the Safe Path intervention. The main effect of time just failed to reach significance, $F(2,31) = 3.29$, $p = 0.050$.

Supplementary Analyses

The ratings of group climate and team functioning can be compared to a reference group from secure residential care. Based on ratings of 566 patients in secure residential youth care, the mean rating on group climate is 3.10 with a standard deviation of 0.23 (Roest, Dekker, van Miert, de Valk, & van der Helm, 2016). Descriptive means and standard deviations on group climate in our study are displayed in Table 3, which also shows the results of comparisons with the reference group (Cohen's *d*). The ratings on group climate in our study were comparable to those of the reference group, except for a moderately more repressive group climate in CAU units at baseline.

A reference group for team functioning was based on 373 youth care workers working in secure residential youth care (Dekker et al., 2015). Their mean rating of positive team functioning is 3.87 (*sd* = 0.66), and their mean rating of negative team functioning is 2.79 (*sd* = 0.71). Table 3 shows that the ratings of youth care workers from the CAU units on positive and negative team functioning were comparable to those of the reference group. Youth care workers from the Safe Path units, however, rated positive team functioning as moderately higher, and negative team functioning as moderately lower (meaning better team functioning) compared to the reference group.

Table 3. Descriptive means, standard deviations, and deviations from reference groups for group climate and team functioning

Time		Group climate		Team functioning			
				Positive		Negative	
		CAU	SP	CAU	SP	CAU	SP
T_0	*m (sd)*	2.78 (.58)	3.24 (.47)	3.80 (.33)	4.16 (.63)	2.69 (.46)	2.34 (.43)
	d	-0.73	0.38	-0.13	0.45	-0.17	-0.77
T_1	*m*	2.88 (.74)	3.03 (.57)	3.73 (.50)	4.18 (.56)	2.97 (.60)	2.39 (.48)
	d	-0.40	-0.20	-0.24	0.51	0.27	-0.66
T_2	*m*	3.06 (.66)	3.16 (.44)	3.77 (.39)	4.22 (.48)	2.57 (.44)	2.33 (.26)
	d	-0.08	0.17	-0.18	0.61	-0.37	-0.74

d = Cohen's *d*, CAU = Care as usual, SP = Safe Path

DISCUSSION

This study investigated the preliminary effects of Safe Path (Bernstein et al., 2014) in secure residential youth care during the first four months after implementation. With its strong theoretical basis originating from Schema Therapy, one of the key elements of the Safe Path approach is the use of a common language of schema modes. Although staff from Safe Path units used more mode language than staff from the CAU units, this

difference was already present at baseline, and was not due to the Safe Path intervention. The percentage of daily reports containing mode language is still low after implementation of Safe Path (9%-11%), suggesting that the implementation of Safe Path was far from completed after four months. This is in line with the clinical finding that it usually takes about a year to successfully implement Safe Path at a treatment unit (D. P. Bernstein, personal communication, September 15, 2017).

The early, incomplete stage of implementation may contribute to the absence of significant findings in this study. We expected Safe Path units to show higher or faster improvements in outcome measures over time compared to CAU units (interaction effects), but these effects were non-significant on all outcomes. We also expected differences between Safe Path units and CAU units at baseline because of prior knowledge and use of Schema Therapy principles by some staff of the Safe Path units. We found no differences in group climate and aggressive incidents, but Safe Path units outperformed CAU units with respect to team functioning at baseline (which did not change over time). The team functioning in Safe Path units was also superior compared to a national reference group. This suggests that there is a heightened sense of unity and competence in the Safe Path treatment teams, which is associated with a uniform approach of patients, good coordination of tasks and duties, and open communication (van der Helm & Hanrath, 2011; van der Helm & Stams, 2012).

Contrary to our expectations, we found that staff from Safe Path units used more severe interventions than staff from CAU units (with no changes over time). Although it could be that staff from Safe Path units are more restrictive, this is not reflected in patients' ratings of group climate. (Patients from Safe Path units did not rate the group climate as more repressive than patients from CAU units.) The coding scheme specified severe interventions as any physical contact between staff and patients who are showing challenging behavior. Physical contact, however, may not necessarily be coercive or repressive, but could also be used to communicate care, providing empathy and reassurance (Golder, 1993; Tommasini, 1990). It might be better to rate physical contact as a severe intervention only when daily reports provide evidence for a coercive character of the physical contact, for example when daily reports describe patients' resistance to the intervention.

Some limitations of this study, such as the non-randomized study design, will not change after data collection for the full year of Safe Path implementation has finished. Besides the previous training in Schema Therapy principles delivered to half of the Safe Path staff in the years before implementing Safe Path, we are not aware of other ways that the two units might have differed from each other at baseline. Patients are usually referred to the treatment units based on available beds and ratio of boys and girls in a treatment unit, and the allocation to treatment unit (and therefore treatment condition) is typically not related to other characteristics of the individual patient. Because, with respect to team

functioning, Safe Path is already superior to both CAU and a reference group, it may be more difficult to detect further improvements in team functioning compared to CAU.

Other limitations, such as the incomplete implementation process and few repeated measures, may ameliorate once the entire data set has been completed. Four measurement points will be added for the daily report data, and two measurement points will be added for the questionnaire data. Also, the use of the mode language will most probably be more integrated within the Safe Path units. After the first four months, Safe Path coaches have started stimulating group care workers to use the mode language by attending meetings where patients are discussed, for example during change of shifts or after weekends. During these meetings, Safe Path coaches also encourage group care workers to use the iModes when discussing incidents with each other or with patients. See Box 3 for an example of how the iModes may be used in interaction with a patient.

Box 3: *Discussing the aggressive incident with Brandon using the iModes*
The group care worker asks Brandon to come see him in the office. Brandon is still angry with the group care worker, and is unwilling to discuss the aggressive incident with him. He sits across the group care worker with a grumpy expression on his face (Angry Protector mode). He does not respond to the care worker's efforts to start a conversation, so the group care worker hands him the iModes. (This often helps the patient to express his feelings, without having to explicitly mention them.)
Care worker: "Could you show me the card that depicts the side of you that is sitting across me?"
Brandon: (looks through the cards and lays down the Angry Child, the Angry Protector, and the Bully and Attack modes; see Figure 1)
Care worker: "Wow, there is a lot of anger on the table. You know what? I have been thinking about what happened, and I actually understand your anger. I think I may have made some mistakes."
Brandon: (shrugs, but is starting to make eye contact.)
Care worker: "I would really like to find out what exactly made you so angry that your aggressive side was activated. I would like to know what I could have done to prevent this from happening, and maybe you could also have done things differently. If we talk about this, then maybe we understand each other better and we can prevent this from happening again. I am happy to tell you about the sides of me that were triggered during the incident. Are you willing to share with me the different sides of you that were involved, so we can understand it better?"
Brandon: "Okay".
Group care worker: "Great! So which side of you came to me to ask me for a cigarette?"
Brandon: "I guess that was just my normal, healthy side". (lays down the Healthy Adolescent card.)

Care worker: “Okay, so you were feeling alright?”
Brandon: “Well, I was feeling a little nervous about the exam I had to take later that day, and I wanted to calm myself with a cigarette. So maybe it was my self-soothing side” (lays down the card of the Self-Soother mode; see Figure 1)
Care worker: “Right. And what happened when I asked you to wait?”
Brandon: “To me, that was really unfair. When I’m nervous, I really need a cigarette. I got really angry because you wouldn’t let me smoke, and I wanted to let you know that you were treating me unfairly. I guess that was my angry side (lays down the Angry Child mode).
Care worker: “I see. So maybe you felt like I didn’t care about your needs or your feelings?” (lays down the card of the Lonely Child, right before the card of the Angry Child mode.) “And perhaps that is what made you so angry?”
Brandon: “Yes, I guess so.”
Care worker: “And because I didn’t know about your anxiety, I thought you were just being impatient and impulsive. That triggered a side of me that wanted to stop you from shouting without really hearing you. I bet that you felt as if I was punishing you for being angry, which made you even more angry. Is that right?” (lays down the card of the Punitive Parent above the Angry Child mode).
Brandon: “Yes, I really thought you were picking on me, that you just didn’t care about my feelings at all. And when you came out of the office, I thought you were going to physically bring me to my room for not listening to you. That made me so angry that I wanted to attack you.” (lays down the card of the Bully and Attack mode.) “When you pressed the alarm and the other group care workers arrived, I was outrageous because I knew they would hurt me when restraining me. It turned black before my eyes, all I remember is that I was shouting and fighting as hard as I could.”
Care worker: “That must have been a really bad experience for you. I do not want this to happen to you again. Now, I understand why you got so angry with me. You thought I don’t care about you and your feelings. I guess that is what you’ve come to believe in your past: that people don’t think you’re important enough to care. Well, I do think you’re important and I do care about you and your feelings. I should have asked you about your anger, I am sorry I didn’t. However, it is possible that this will happen again in the future. If that is the case, then please remember that this doesn’t mean that I don’t care about you: it only means that I’m caught up doing something else or talking to somebody else. I really am interested in your feelings.”
Brandon: “Okay. And I am sorry for attacking you, it wasn’t personal”.

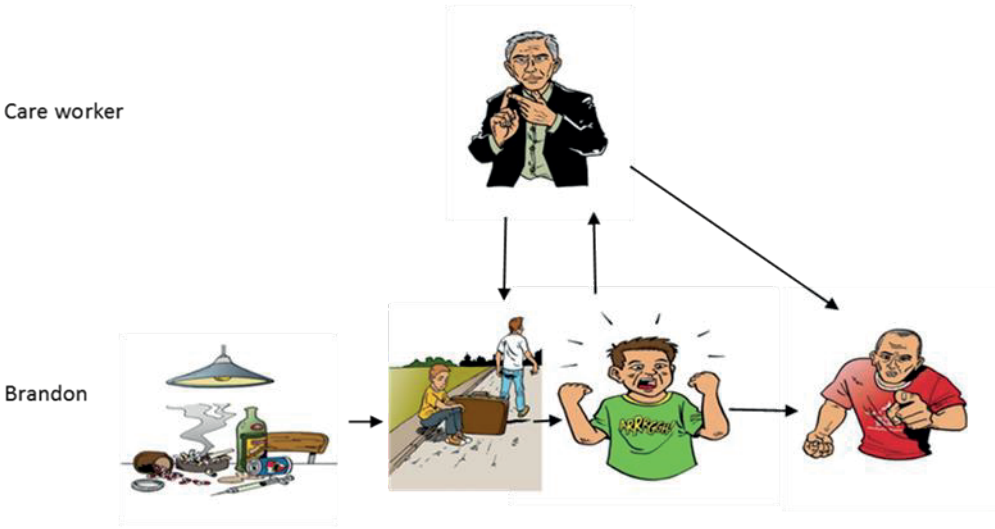


Figure 1. Sequence of Brandon's modes during aggressive incident, and interaction between patient's modes and care worker's modes.

Clinical Observations of Team Development in Safe Path Units

Several issues arising in the Safe Path coaching are worth to be clinically addressed. First of all, group care workers report that time for individual, private talks with patients (for example to work with the iModes) is scarce. Residential institutions are often poorly funded and have little means (Lee & McMillen, 2008), and group care workers in this study indicated experiencing a heavy work load. On the other hand, they also indicated gaining job satisfaction from applying Schema Therapy principles, working with patients' modes, and feel that it improves the quality of care. Second, feelings of insecurity and perceived incompetence also influence the incorporation of Schema Therapy principles in the residential treatment. Especially in the first six months after implementation, Safe Path coaches observed group care workers' hesitation or reluctance in using the mode language, especially when patients rejected or opposed their attempts to work with the patients' modes. This caused some group care workers to believe that some patients are not suitable for the Schema Therapy approach. They gradually develop the insight that this behavior can also be understood in terms of modes, which can and should be discussed with the patient. Third, group care workers may sometimes confuse the Schema Therapy approach, with its focus on understanding behavior problems and meeting emotional needs of the patients, with an approach that fails to set limits to problematic behaviors. Whereas in reality, receiving fair, but firm limits is one of the basic needs that should be provided to

patients. When implementing Safe Path, coaches should guard the team against an excessive focus on empathy for the function of challenging behaviors at the expense of fair, but firm limits. Both warmth and involved care, and limit setting are necessary, and it is difficult to strike the right balance when faced with repeated, disruptive behaviors.

Conclusion

For now, it is premature to draw conclusions about the effects of the Safe Path intervention. Data collection will be finished in January 2018, and mixed model analyses will be conducted on the full dataset to investigate changes in group climate, aggressive incidents, team functioning, and severe staff interventions.

CHAPTER 8

Een praktische handleiding [A practical manual]

Van Wijk-Herbrink, M. F. (2017). Schematherapie bij jongeren met externaliserende gedragsproblemen [Schema Therapy with adolescents with externalizing behavior problems]. In J. Roelofs & M. Boots (Eds.), *Schematherapie bij Kinderen en Jeugdigen: een praktische handleiding [Schema Therapy with Children and Adolescents: a practical manual].* Houten, the Netherlands: Bohn van Stafleu & Loghum (in preparation).

ABSTRACT

Schematherapie is een veelbelovende vorm van therapie bij jongeren met externaliserende gedragsproblemen, zoals regelovertredend en agressief gedrag. Externaliserend gedrag is namelijk vaak een overcompenserende reactie op gevoelens van verlating, wantrouwen, schaamte, eenzaamheid, afhankelijkheid en (faal)angst (behorend bij schema's in het domein Onverbondenheid en Afwijzing). Omdat deze gevoelens niet zichtbaar zijn voor anderen, wordt vaak alleen op het problematische gedrag gereageerd. Schematherapie helpt om ook aandacht te hebben voor de kwetsbare kant van deze jongeren. In dit hoofdstuk worden vele illustraties gegeven van het werken met schemamodi bij jongeren met gedragsproblemen, waarbij verschillende fases worden onderscheiden: de motivatiefase, diagnostische fase, veranderingsfase en generalisatiefase. Er wordt speciale aandacht besteed aan de verschillende schemamodi die geassocieerd zijn met uitingen van boosheid, zoals de Boos Kind modus, Boze Beschermer en Pest- en Aanvalmodus. Tot slot wordt aandacht besteed aan het betrekken van ouders bij de Schematherapie en het creëren van een Schematherapeutisch behandelklimaat in een residentiële setting.

INLEIDING

Externaliserende gedragsproblemen, zoals opstandig en agressief gedrag, hebben grote gevolgen op het gebied van (psychische) gezondheid, onderwijs, criminaliteit en maatschappelijke participatie. Jongeren met gedragsproblemen hebben bijvoorbeeld een grote kans op het ontwikkelen van een persoonlijkheidsstoornis, het gebruiken van alcohol en drugs, het vroegtijdig verlaten van school, werkloosheid en sociale problemen (Carr, 2006). Het is dus van groot belang dat deze jongeren succesvol worden behandeld.

Het behandelen van jongeren met gedragsproblemen is echter niet gemakkelijk. Evidence-based interventies voor deze doelgroep bestaan uit ambulante systeemtherapie (bijvoorbeeld Multi Systeem Therapie) of vaardigheidstrainingen (zoals sociale vaardigheidstraining of agressieregulatie training). Toch zijn deze interventies maar voor een gedeelte van de jongeren effectief. Zeker wanneer de gedragsproblemen ernstig zijn en er daarnaast sprake is van andere complexe problematiek, zoals emotieregulatiestoornissen of psychopathische kenmerken, blijken bestaande interventies onvoldoende te werken (Masi et al., 2013; Winiarski et al., 2014).

Bestaande interventies richten zich hoofdzakelijk op het verbeteren van het huidige gedrag en huidige gezinsinteracties. Het is echter van belang om ook aandacht te hebben voor vroegere problemen. Problematische ouder-kind interacties in de vroege kindertijd zijn een belangrijke voorspeller van gedragsproblemen (Odgers et al., 2008) en zijn bovendien van invloed op de persoonlijkheidsontwikkeling. Bij veel jongeren met ernstige gedragsproblemen wordt een bedreigde persoonlijkheidsontwikkeling gesignaleerd (Wijk-Herbrink, Roelofs, et al., 2016), maar bestaande interventies voor jongeren met gedragsproblemen richten zich daar over het algemeen niet op. Schematherapie zou dan uitkomst kunnen bieden.

Effectiviteit van Schematherapie

Verschillende onderzoeken tonen aan dat Schematherapie effectief is bij volwassenen met persoonlijkheidsstoornissen en andere therapieresistente problematiek (voor een overzicht, zie Masley et al., 2012). Een recent, grootschalig onderzoek in Nederlandse TBS-klinieken heeft aangetoond dat Schematherapie ook effectief is bij volwassenen met complexe gedragsproblemen en externaliserende persoonlijkheidsstoornissen, zoals Borderline, Narcistische en Antisociale Persoonlijkheidsstoornissen (Bernstein et al., 2017). Door Schematherapie al op vroegere leeftijd in te zetten, namelijk bij jongeren die gedragsproblemen vertonen, is een ontwikkeling richting complexere psychopathologie en andere negatieve uitkomsten wellicht te voorkomen.

Hoewel Schematherapie steeds vaker toegepast wordt op jongeren is er nog maar weinig onderzoek gedaan naar de effectiviteit ervan bij deze doelgroep. De eerste bevindingen laten zien dat Schematherapie een veelbelovende behandeling is voor jongeren met persoonlijkheidsproblematiek, zowel in een ambulante setting (Roelofs et al., 2016) als

in een residentiële setting voor jongeren met ernstige gedragsproblemen (Wijk-Herbrink, Broers, et al., 2017). Daarnaast is uit onderzoek gebleken dat bij jongeren dezelfde onaangepaste schema's, copingstijlen en schemamodi voorkomen als bij volwassenen (Roelofs et al., 2016; Muris, 2006; Wijk-Herbrink, Roelofs, et al., 2016). Deze centrale concepten zijn dus ook van toepassing op jongeren, wat een basis biedt voor het geven van Schematherapie in deze leeftijdsgroep.

Schematheorie en gedragsproblemen

Jongeren met externaliserende gedragsproblemen worden vaak omschreven als temperamentvol. Daarnaast hebben zij veelal negatieve ervaringen gehad in hun kindertijd, waarbij niet of onvoldoende aan bepaalde basisbehoeften is voldaan. Volgens Young en collega's (2005) zorgt de combinatie van temperament en negatieve ervaringen in de kindertijd voor het ontstaan van vroege onaangepaste schema's, bestaande uit heftige emoties, cognities, herinneringen en lichamelijke reacties. Onderzoek heeft aangetoond dat bepaalde schema's inderdaad geassocieerd zijn met gedragsproblemen bij jongeren. Zo zijn bijvoorbeeld de schema's Grandiositeit en Onvoldoende zelfcontrole verbonden met gedragsproblemen. Bij het schema Grandiositeit is een jongere van mening dat hij of zij een uitzondering verdient op bepaalde regels, wat kan leiden tot regelovertredend gedrag. Bij het schema Onvoldoende zelfcontrole is een jongere geneigd om zich te laten leiden door zijn of haar behoeften, in plaats van zich aan de (sociale) regels te houden. Ook meer primaire schema's in de domeinen Onverbondenheid/Afwijzing en Verzwakte autonomie blijken gedragsproblemen te voorspellen (Muris, 2006; Wijk-Herbrink, Bernstein, et al., 2017). Wanneer zulke schema's getriggerd worden, ontstaan er gevoelens van bijvoorbeeld verlating, wantrouwen, schaamte, eenzaamheid, afhankelijkheid en (faal)angst. Jongeren met gedragsproblemen zijn geneigd om met een vermijdende of overcompenserende copingstijl te reageren op dergelijke gevoelens. Dit activeert externaliserende schemamodi, zoals Boos Kind, Pest en Aanval, Manipulatie en Bedrog, Boze beschermer en Roofdier modi. Wanneer men geconfronteerd wordt met het externaliserende gedrag behorende bij deze modi, zal men eerder geneigd zijn om dat gedrag een halt toe te roepen en/of te bestraffen, dan om begrip te hebben voor de (veelal onzichtbare) kwetsbaarheid die eraan ten grondslag ligt.

Bij een Schematherapeutische aanpak wordt geprobeerd die onderliggende kwetsbaarheid geleidelijk naar de oppervlakte te krijgen. Dit is niet zo eenvoudig, aangezien deze jongeren geneigd zijn zich 'stoer' en 'onraakbaar' voor te doen, waarbij ze kwetsbare gevoelens en het bestaan van onaangepaste schema's ontkennen. Schemamodi, vertaald als 'verschillende kanten van jezelf', herkennen ze over het algemeen wel. Daarom is een modusgerichte aanpak naar onze mening beter passend bij deze doelgroep dan een aanpak gericht op de onaangepaste schema's. De meeste jongeren met externaliserende gedragsproblemen erkennen dat er een kant van hen is die anderen liever op afstand houdt (Afstandelijke of Boze Beschermer modus), een kant die agressief kan zijn (bijv. Pest en

Aanval modus), een kant die impulsief is (Impulsief Kind modus) en een kant die goed kan nadenken over zichzelf en gezonde keuzes kan maken (Gezonde Jongere modus). Door te praten over verschillende kanten wordt de jongere als het ware 'ontschuldigd': de jongere *is* niet agressief, maar er is een *kant van hem/haar* die agressief is. En op dezelfde wijze zeg je niet dat de jongere kwetsbaar *is* (wat de jongere wellicht niet zal erkennen), maar dat er een *kant van hem/haar* is die zich wel eens kwetsbaar kan voelen.

Toepassing van Schematherapie bij jongeren met gedragsproblemen

Wanneer ambulante behandelingen onvoldoende effect bieden en de gedragsproblemen dermate ernstig zijn dat ze in de thuissituatie niet te hanteren zijn, is een opname in een (gesloten) jeugdzorginstelling soms onvermijdelijk. De voorbeelden in dit hoofdstuk zijn ontleend aan de behandeling van jongeren in een gesloten jeugdzorg setting, maar alle technieken zijn ook toepasbaar in een ambulante setting. Ambulante Schematherapie bij jongeren met gedragsproblemen zou een opname in een residentiële setting kunnen voorkómen, maar kan ook worden ingezet als vervolg op een residentiële behandeling.

We onderscheiden verschillende fases in de Schematherapie met jongeren met gedragsproblemen. Er wordt gestart met een *motivatiefase.* Jongeren met (ernstige) gedragsproblemen hebben vaak weinig probleeminzicht, zijn niet gemotiveerd voor behandeling en/of hebben al meerdere behandelingen ondergaan zonder succes. De grootste uitdaging is dan ook om een therapeutische relatie met hen op te bouwen en hen te motiveren voor therapie. Vervolgens kan de *diagnostische fase* starten, waarin de schemamodi en hun oorsprong in de kindertijd verder worden verkend. Wanneer de verschillende modi in kaart zijn gebracht, kunnen individuele behandeldoelen worden vastgesteld en begint de *veranderingsfase*. Hierin worden onaangepaste schemamodi bewerkt en wordt de (verdere) ontwikkeling van gezonde schemamodi gestimuleerd. Deze fase loopt over in de *generalisatiefase*, waarin behaalde resultaten worden gegeneraliseerd naar situaties buiten de behandelsetting. Hoewel we de verschillende fases in de Schematherapie apart van elkaar beschrijven, zijn de overgangen niet zo statisch en zullen de fases in elkaar overlopen.

Wij adviseren om in de eerste fases van de Schematherapie een frequentie van twee sessies per week te hanteren. Onze ervaring is dat dit nodig is om tijdens de motivatiefase de basis voor de therapeutische relatie te kunnen leggen en om tijdens de diagnostiek- en veranderingsfase hierop te kunnen voortborduren. Het is aangetoond dat een therapiefrequentie van twee keer per week leidt tot sneller en meer herstel van psychopathologie (Reese, Toland & Hopkins, 2011) dan een frequentie van eens per week. Sneller herstel is uiteraard in alle gevallen wenselijk, maar is van bijzonder belang in een residentiële setting gezien de huidige, politieke tendens om de opnameduur te beperken tot een minimum.

Tijdens alle fases staat de limited reparenting houding van de behandelaar centraal. Deze houding zorgt voor een tegengif voor bestaande schema's (Young et al., 2005). De

jongere ervaart in de therapeutische relatie dat er aan zijn of haar basisbehoeften wordt voldaan, waardoor er een helende werking uitgaat van de limited reparenting. We zullen de verschillende fases beschrijven en een aantal technieken illustreren aan de hand van therapiefragmenten met twee jongeren: Tanya en Jasper (fictieve namen).

Casusbeschrijvingen

Tanya

Tanya is een meisje van 16 jaar. Haar moeder heeft een borderline persoonlijkheidsstoornis en is onvoorspelbaar in het contact met Tanya. Vanuit onmacht stelde zij onredelijke eisen aan Tanya en strafte haar hard wanneer Tanya niet aan die eisen kon voldoen. Tanya's vader was veel van huis in verband met zijn werk. Hij wilde graag dat het gezellig was thuis en probeerde leuke dingen te doen met Tanya, maar ging niet tegen moeder in. Naarmate Tanya ouder werd, is zij zich steeds meer tegen haar ouders gaan afzetten. Zij hing veel op straat, hield zich niet aan de regels thuis of op school, was erg zelfbepalend en gebruikte dagelijks softdrugs. Ook was er een vermoeden, dat zij contacten had met loverboys. Ambulante systeemtherapie kwam niet van de grond, omdat Tanya en haar ouders regelmatig niet op afspraken verschenen. Tanya werd opgenomen in een voorziening voor gesloten jeugdzorg, waar een oppositioneel-opstandige gedragsstoornis en trekken van de borderline persoonlijkheidsstoornis werden vastgesteld.

Jasper

Jasper is een jongen van 17 jaar oud. Er was sprake van huiselijk geweld tussen zijn ouders, die gescheiden zijn toen hij vier jaar oud was. Jasper bleef bij zijn moeder wonen. Zijn moeder moest verschillende baantjes nemen om financieel rond te kunnen komen, waardoor er thuis weinig toezicht en regels waren. Jasper ging na verloop van tijd steeds meer zijn eigen gang en als iemand grenzen stelde aan zijn gedrag, dan werd hij boos. Vanaf zijn elfde jaar bedreigde en intimideerde hij anderen, was regelmatig betrokken bij vechtpartijen, spijbelde, kwam in aanraking met de politie vanwege vechtpartijen en diefstal, en bleef regelmatig nachten van huis weg. Hij weigerde mee te werken aan behandeling. Hij werd opgenomen in een voorziening voor gesloten jeugdzorg, waar een gedragsstoornis en trekken van de narcistische persoonlijkheidsstoornis werden vastgesteld.

Motivatiefase

In de motivatiefase is de belangrijkste taak van de schematherapeut om een therapeutische relatie tot stand te brengen. Zeker wanneer behandeling in een gedwongen kader plaatsvindt, zoals in de gesloten jeugdzorg, is dit een grote uitdaging. Vaak is er bij jongeren met gedragsproblemen sprake van specifieke schema's, die de opbouw van een therapeutische relatie in de weg staan. Een veelvoorkomend schema bij deze doelgroep is bijvoorbeeld Wantrouwen/misbruik (niemand is te vertrouwen / mensen zijn erop uit om

mij kwaad te doen). Een dergelijk schema maakt het voor de jongere uiteraard moeilijk om zich open te stellen voor therapie, want dat zou hem of haar heel kwetsbaar kunnen maken. Vermijding is een veelvoorkomende coping-stijl in deze eerste fase van de therapie. De modi Afstandelijke Beschermer en Boze Beschermer komen dan ook veelvuldig voor. De therapeut (en groepsleiding in geval van een residentiële behandeling) zal eerst met deze vermijdende schemamodi aan de slag moeten gaan, alvorens te kunnen komen tot het maken van een casusconceptualisatie of modusmodel. Hieronder illustreren we aan de hand van een therapiefragment hoe de schematherapeut (TH) een meerstoelentechniek gebruikt om de Afstandelijke Beschermer modus van Tanya (T) te verminderen.

Afstandelijke Beschermer en de meerstoelentechniek.
TH: Ik zie nu een kant van jou, die weinig voelt en mij op afstand houdt. Ik zou daarmee graag een oefening willen doen vandaag (*zet drie stoelen bij elkaar*). Kom maar even hier, alsjeblieft.
T: (*slaakt een diepe zucht en loopt naar de therapeut*)
TH: Oké, nu mag je in die stoel gaan zitten en, als een soort rollenspel, die Afstandelijke kant spelen. Ik weet dat je daar goed in bent!
T: (*gaat in de stoel zitten met de armen over elkaar*)
TH: (*gaat zitten in de stoel tegenover T:*) Juist, heel goed! Zo zou die kant inderdaad tegenover mij zitten, met de armen over elkaar. Die kant van jou wil helemaal niet met mij praten. Maar ik heb wel wat vragen aan die kant van jou, probeer ze maar te beantwoorden vanuit het perspectief van die Afstandelijke kant.
T: (*haalt schouders op*)
TH: Oké, Afstandelijke kant, kun je mij vertellen waarom het belangrijk is voor Tanya dat jij er bent?
T: Nou, gewoon. Ik heb liever dat mensen uit de buurt blijven.
TH: En waarom is het nodig om mensen uit de buurt te houden van Tanya?
T: Omdat ze haar toch niet begrijpen.
TH: Aha, mensen begrijpen haar niet.
T: Nee, dus is het beter om iedereen te vertellen dat het prima gaat, want er is toch niemand die kan helpen. Vroeger dacht ik nog wel dat dat kon, maar dat heb ik allang opgegeven.
TH: Aha, Afstandelijke kant, dus je probeert Tanya te beschermen tegen teleurstelling?
T: Hm, ik denk het.
TH: Waarom ben je er zo zeker van dat andere mensen haar niet zullen begrijpen?
T: Niemand heeft haar ooit begrepen. Of misschien willen ze haar niet begrijpen. Het lijkt niemand iets te kunnen schelen hoe het met haar gaat. Mensen die belangrijk voor haar zijn, gaan uiteindelijk ook altijd weer weg.
TH: Oké, dus je wil niet dat Tanya weer in de steek gelaten wordt. Dat zou heel pijnlijk voor haar zijn. En daarom laat je andere mensen niet te dichtbij haar komen?
T: Ja, ik denk het.

TH: Zijn er nog andere redenen waarom je belangrijk bent voor Tanya?
T: Ja, ik zorg er ook voor dat ze niet teveel aan vroeger denkt. Dat moet ze niet doen, want dan gaat ze zich heel rot gaan voelen en die gevoelens kan ze helemaal niet aan.
TH: Wat denk je dat er gebeurt als ze zich zo rot zou voelen?
T: Weet ik niet, waarschijnlijk gaat ze dan weer door het lint en breekt ze de hele boel af.
TH: Je bedoelt dat ze dan met spullen gaat gooien of anderen gaat slaan?
T: Ja, dat doet ze altijd als ze veel aan vroeger denkt. En dan komt ze weer verder in de problemen.
TH: Dan begrijp ik dat je heel belangrijk voor haar bent: Je beschermt haar niet alleen tegen teleurstelling door anderen, maar je probeert ook te voorkomen dat ze zich zó rot gaat voelen dat ze agressief wordt en in de problemen komt. Dat is inderdaad een heel belangrijke taak.
Luister, Tanya, de Afstandelijke kant van jou kan in die stoel blijven zitten, en kom jij maar even hier in de stoel naast mij zitten.
T: (*wisselt van stoel*)
TH: (*tegen Tanya:*) Ik wil graag even met de Afstandelijke kant van jou praten, je hoeft alleen maar hier te zitten en ernaar te luisteren.
(*praat tegen de stoel waar de Afstandelijke kant denkbeeldig zit*): Afstandelijke kant, zoals ik net zei: Ik denk dat je een belangrijke taak hebt. Je hebt al zo vaak gezien dat Tanya gekwetst werd door anderen en je hebt haar zien worstelen met heel moeilijke gevoelens, zoals teleurstelling en woede. Je hebt gezien hoe ze daardoor steeds meer in de problemen kwam. Geen wonder dat je probeert om haar te beschermen! Ik denk dat dat noodzakelijk is geweest in het verleden. Maar weet je, misschien hoef je haar in de therapiesessies niet zo erg te beschermen als je nu doet. Want ik kan je verzekeren dat ze hier veilig is: Ik ga haar niet kwetsen en ik laat haar ook niet in de steek. Ik wil haar helpen om met die pijnlijke gevoelens om te gaan, zodat ze niet meer zo agressief wordt. Tanya heeft echt iemand nodig die er voor haar is en ik wil die persoon graag zijn. Ze mag alles tegen me zeggen en ik zal ervoor zorgen dat ze zich veilig en begrepen voelt. Ook als ze boos is of een keer agressief wordt, zal ik haar niet in de steek laten.
(*tegen Tanya:*) Hoe voelt dat voor jou als ik dat zeg?
T: (*huilt:*) Het is gewoon zo moeilijk! Soms wil ik je wel iets vertellen, maar het lukt me gewoon niet. Het lijkt wel alsof ik dan blokkeer.
TH: Ik denk dat dat ook zo is: dat is je Afstandelijke kant die jou aan het beschermen is door jou te blokkeren. Maar nu zie ik pas de kant van jou die wil dat ik je help, die mij laat zien hoe je je echt voelt. Nu pas heb ik het gevoel dat we écht contact hebben. Maar de Afstandelijke kant van jou wil dat eigenlijk niet toestaan, want die is bang dat je weer gekwetst wordt of in de problemen komt. Ik begrijp nu ook beter, waarom die kant zo belangrijk voor je is. Ik vraag dan ook niet of die kant weg wil gaan, want ik snap dat je hem soms nodig hebt. Ik vraag alleen of de Afstandelijke kant jou wat meer ruimte wil geven in de therapiesessies, zodat we beter contact kunnen maken en ik er echt voor je kan zijn. Want die andere kant van jou, die eigenlijk heel eenzaam en verdrietig is, heeft dat nodig. Hoe zou je dat vinden?
T: Dat zou wel fijn zijn, maar ook moeilijk.

TH: Dat snap ik. Kijk eens naar de Afstandelijke kant op de stoel: wat zegt zij? Is zij bereid om mee te werken?
T: Ja, ik geloof dat ze het wil proberen.

In dit therapiefragment lees je hoe de therapeut Tanya stimuleert om twee verschillende kanten van haar (de Afstandelijke Beschermer en het Kwetsbare Kind) van elkaar te onderscheiden. Zo ontdekt zij dat deze kanten verschillende behoeften hebben: De Afstandelijke kant wil voorkómen dat zij zich openstelt, terwijl het Kwetsbare kind in haar behoefte heeft aan verbondenheid met de therapeut. Door Tanya op te laten staan van de stoel, waar de Afstandelijke kant op zit, en haar op een stoel naast zich neer te zetten, wordt er letterlijk afstand gecreëerd tussen de Afstandelijke kant en (de kwetsbare kant van) Tanya. Vervolgens toont de therapeut empathie voor de Afstandelijke kant, maar wijst zij er tegelijkertijd op dat deze kant nu niet meer zo hard nodig is en zelfs nadelig is voor Tanya (*empathische confrontatie*).

Vaak zijn er veel van zulke oefeningen nodig om de Afstandelijke Beschermer daadwerkelijk (voor langere tijd) op afstand te krijgen, zodat overgegaan kan worden tot de diagnostische fase. Ook kan het gebeuren dat de Afstandelijke Beschermer zo hardnekkig is, dat een jongere weigert om van stoel te wisselen of om überhaupt een woord te wisselen met de therapeut. In dat geval moet bovenstaande techniek versimpeld worden en is alleen een empathische confrontatie mogelijk, zoals we hieronder illustreren.

Empathische confrontatie met de Afstandelijke Beschermer
T: (*zit met gesloten houding tegenover de therapeut, maakt geen oogcontact, weigert antwoord te geven op vragen van de therapeut*)
TH: Ik zie nu een kant van jou, die niet met mij wil praten. Daar heb je vast een goede reden voor. Misschien vertrouw je me niet of ben je al vaak teleurgesteld door mensen. In ieder geval zal die kant er niet voor niets zijn. Ik wil je daarom ook laten weten dat ik die kant van jou respecteer. Die kant van jou mag er gewoon zijn. Wel vraag ik me af of er niet een andere kant van jou is, die wel behoefte heeft aan iemand om af en toe mee te praten. Een kant die zich soms alleen kan voelen. Ik wil dat je weet dat ik er echt voor jou wil zijn, dat ik samen met jou wil bekijken of ik iets voor je kan betekenen met therapie. Geloof je me als ik dat zeg?

Meestal lukt het wel om op deze manier een reactie uit te lokken bij de jongere, waardoor er in ieder geval een gesprek op gang komt. Soms haalt de jongere alleen de schouders op en is het nodig om na een dergelijke interventie de therapiesessie af te ronden met de vraag of de jongere erover na wil denken. Het is van belang om respectvol om te gaan met de Afstandelijke kant, maar ook om volhardend te zijn in het proberen contact te

maken met de meer kwetsbare kant van de jongere. Als de behandelaar dit lang genoeg volhoudt, is onze ervaring dat er bijna altijd wel een ingang ontstaat om een therapeutische relatie tot stand te brengen. Het combineren van empathische confrontatie met niet-therapeutische technieken, zoals een stukje gaan wandelen of een spelletje spelen, kunnen daarbij van groot belang zijn. Het maakt de contactmomenten minder beladen en sommige jongeren voelen zich dan meer op hun gemak.

Bij jongeren die in een gedwongen kader worden behandeld kan de therapeut ook te maken krijgen met de modus Manipulatie en Bedrog: een kant van de jongere die *doet alsof* hij/zij gemotiveerd is voor behandeling. Deze kant wordt vaak ingezet om een goede indruk te maken op de kinderrechter, die beslissingen neemt over een strafrechtelijk vonnis of over een uithuisplaatsing van de jongere. Soms kom je er als behandelaar pas in een latere fase achter dat je te maken hebt met de modus Manipulatie en Bedrog, omdat de jongere aanvankelijk gemotiveerd lijkt te zijn en zich in lijkt te willen zetten voor zijn behandeling. Hieronder lees je hoe de Schematherapeut (TH) van Jasper (J) met behulp van de techniek *Limit setting* grenzen stelt aan, onder andere, zijn modus Manipulatie en Bedrog.

Manipulatie en Bedrog modus en stellen van grenzen ("limit setting")
TH: Ik wil het graag even met je hebben over de kanten van jou, die ons in de weg lijken te zitten in de therapie.
J: Wat bedoel je?
TH: Nou, er is een kant van jou die niet altijd de gehele waarheid vertelt. En het is niet gemakkelijk om mensen te manipuleren, maar jij bent er hartstikke goed in! Je had me bijvoorbeeld goed te pakken toen je mij tijdens de eerste sessie vertelde dat je heel erg gemotiveerd bent voor therapie.
J: (*lacht*)
TH: Ik geloofde je echt! Je komt ook altijd netjes op tijd en gaat in gesprek, maar je wil geen therapie-oefeningen doen en je wil me niet vertellen wat er werkelijk in je omgaat. Daarom kreeg ik steeds meer het gevoel dat je vooral je best doet om indruk te maken op de rechter.
J: Misschien, maar ik wil deze therapie wel doen. Ik wil het alleen wel snel doen, want ik wil hier weg.
TH: Ja, je wil erdoorheen jagen, maar dat is niet mogelijk bij therapie. Ik begrijp wel waarom je het snel wil doen, het is niet niks om hier gedwongen te moeten wonen. En ik heb ook gemerkt dat je niet graag herinnerd wil worden aan je verleden, je hebt het vroeger niet gemakkelijk gehad.
J: Nou, het viel wel mee hoor, zo erg was het niet.
TH: Luister, we hebben het al vaker gehad over de kant van jou die problemen ontkent, en ik vind dat het nu een probleem wordt. Zowel je manipulatieve kant als je ontkennende kant staan de therapie in de weg. Deze kanten zorgen ervoor dat ik me machteloos voel als jouw therapeut. Ik weet namelijk dat er ergens, diep weggestopt, een kant van jou moet zijn die zich heel erg alleen voelt. Ik vind dat heel rot, ik wil niet dat die kant alleen is.

J: Maar ik voel dat niet, ik heb niet zo'n kant.
TH: Ik denk dat je die wel hebt, maar dat je het niet meer weet. Die andere kanten zijn zo sterk in het wegstoppen ervan, dat je die gevoelens niet meer ervaart.
J: Tja, zou kunnen…
TH: Je ontkennende en manipulatieve kanten saboteren daarmee de therapie en ik wil echt dat dat stopt. Deze therapie gaat niet werken tenzij je bereid bent om hier samen met mij naar te kijken en te proberen deze kanten wat opzij te zetten. Als je daartoe niet bereid bent, dan moeten we de therapie gaan stoppen, want nu is het voor ons allebei frustrerend en jij schiet er niets mee op.
J: Ik wil het wel proberen.
TH: Dat zou heel goed zijn, dat is ook alles wat ik vraag. Laten we eens samen kijken naar regels of andere afspraken die nodig zijn om deze therapie te laten slagen.

In bovenstaand therapiefragment confronteert de therapeut de jongere met zijn manipulatieve gedrag, maar toont zij ook empathie voor de functie van dit gedrag (het is rot om gedwongen opgenomen te zijn en het is logisch dat Jasper daar zo snel mogelijk weg wil). De therapeut geeft ook een grens aan: Als Jasper niet bereid is om de manipulatieve en ontkennende kanten te verminderen, zal de therapie beëindigd moeten worden. Omdat een dergelijke grens ook zou kunnen stimuleren dat Jasper net doet alsof hij meewerkt (vergroting in plaats van vermindering van zijn manipulatieve kant), worden er vervolgens direct afspraken gemaakt over bijvoorbeeld het doen van therapie-oefeningen (zoals het maken van een tijdlijn met betrekking tot zijn verleden, meerstoelentechnieken en imaginatie-oefeningen).

Zodra een manier is gevonden om met de blokkerende modi om te gaan, kan de diagnostische fase van start gaan. Dat er kan worden overgegaan tot de diagnostische fase betekent niet, dat de jongere vanaf nu altijd gemotiveerd zal zijn voor de therapie. De motivatie van de jongere is meestal wisselend, doordat vermijdende en overcompenserende modi nog regelmatig geactiveerd zullen worden. In elk gesprek zal de behandelaar opnieuw moeten bekijken in welke modus de jongere zit om de therapeutische technieken daarop te kunnen afstemmen.

Diagnostische fase

De diagnostische fase is gericht op het maken van een casusconceptualisatie en op het formuleren van specifieke doelen voor de volgende fases van de Schematherapie. Vroegere en huidige ervaringen, klachten en gedrag van de jongere worden besproken met de jongere zelf, maar idealiter ook met de ouders en/of groepsleiding. Aanbevolen wordt om ter ondersteuning vragenlijsten in te zetten die gedrag meten, zoals de CBCL en YSR (Achenbach & Rescorla, 2001), en vragenlijsten die Schematherapie concepten meten, zoals de Schemavragenlijst voor Jongeren (Vlierberghe, Rijkeboer, Haemers, & Braet,

2004), de Schema Coping Vragenlijst (Rijkeboer, Lobbestael, Arntz, & van Genderen, 2010) en de Schema Modi Vragenlijst (Young et al., 2007).

Nu de blokkerende schemamodi wat verminderd zijn en er een therapeutische relatie tot stand begint te komen, kunnen specifieke technieken worden toegepast om diagnostische informatie te verkrijgen over schema's, copingstijlen en schemamodi. In principe kunnen alle Schematherapeutische technieken die daarvoor bij volwassenen worden ingezet, ook op jongeren worden toegepast. Denk bijvoorbeeld aan het maken van een tijdlijn, diagnostische imaginatie-oefeningen of historische rollenspellen (Arntz & Jacob, 2012; Young et al., 2005). Hieronder illustreren we een diagnostische imaginatie-oefening met behulp van een fragment uit de therapie van Tanya.

Diagnostische imaginatie-oefening
TH: Sluit je ogen en kijk of je een beeld naar boven kan laten komen van jezelf als klein kind in een moeilijke situatie, misschien een beeld van jezelf met één van je ouders of een andere volwassene? Probeer er niet teveel over na te denken, laat het beeld maar gewoon komen. Zie je al een beeld?
T: Ja.
TH: Heel goed. Vertel me maar wat je ziet als je om je heen kijkt in het beeld. Waar ben je? Wie zijn bij je?
T: Ik ben thuis, mijn moeder is er ook. We zijn in de keuken.
TH: Wat zie je als je in de keuken om je heen kijkt? Beschrijf maar wat je allemaal ziet.
T: Ik zie de keukenkastjes, de eettafel, stoelen. Een schilderij, een lamp, een kleedje op de tafel met een asbak erop. Een emmer met een dweil erin.
TH: Hoe oud ben je in het beeld?
T: Ik denk ongeveer zeven jaar.
TH: Zijn er nog andere gewaarwordingen die je hebt? Misschien een bepaalde geur of een geluid?
T: Ik ruik eten, mama heeft net gekookt. Ze staat tegenover me.
TH: Kijk eens naar je moeder, hoe is haar gezichtsuitdrukking?
T: Ze kijkt heel boos. Ze schreeuwt naar me.
TH: Wat schreeuwt ze?
T: Dat ik de vloer niet goed heb gedweild. Dat ik mijn taken goed moet doen, maar dat ik dat nooit doe.
TH: Hoe voelt het voor jou dat ze dat schreeuwt?
T: Ik weet het niet, ik ben boos geloof ik.
TH: Waarom ben je boos?
T: Omdat ze onredelijk is, ze gaf me altijd taken die ik onmogelijk goed kon doen.
TH: Kijk eens goed naar de kleine T., dat meisje van zeven jaar oud, hoe voelt zij zich?
T: Zij is bang.
TH: Wat maakt haar het meest bang?

T: Heel veel dingen. Ze is bang voor haar moeder, bang dat ze geen eten krijgt omdat ze haar taak niet goed gedaan heeft. Mama zegt dat ze waardeloos is, ze voelt zich alsof ze nooit iets goed kan doen. Dat maakt haar ook een beetje verdrietig.
TH: Dus kleine T. voelt zich vooral bang en verdrietig. Ze voelt zich ook waardeloos, omdat haar moeder dat zegt.
T: Ja. Ze begint te huilen, maar dat maakt mama nog bozer. Mama schreeuwt dat ze geen ruggengraat heeft.
TH: Wat voelt de kleine T. nu?
T: Ze is heel erg bang, want ze weet wat er zo gaat komen.
TH: Wat bedoel je?
T: Haar moeder gaat haar zo opsluiten in de kelder en dan moet ze daar misschien wel de hele avond blijven.

In bovenstaand fragment laat de therapeut Tanya zoveel mogelijk details in het beeld beschrijven om de ervaringen en gevoelens van toen te activeren. Omdat Tanya het moeilijk lijkt te vinden om vanuit het perspectief van kleine Tanya te praten (ze noemt in eerste instantie boosheid over de onredelijkheid van haar moeder's opdrachten, welk besef waarschijnlijk pas op latere leeftijd is ontstaan), geeft de therapeut haar expliciet de instructie om naar het meisje in het beeld kijken. Het lukt Tanya dan beter om de gevoelens te beschrijven die de kleine Tanya toen had: angst en verdriet.

Bij het nabespreken van de oefening zal de therapeut proberen om de situatie te koppelen aan het ontstaan van schema's, coping-stijlen en schemamodi. De therapeut legt hypotheses voor aan de jongere. De therapeut kan bijvoorbeeld benoemen dat dit een heel onveilige situatie was voor kleine Tanya en dat er onredelijke eisen aan haar werden gesteld. Dat kleine Tanya zich waardeloos en heel verdrietig voelde, maar dat de situatie verergerde toen ze dit uitte. Als ze deze ervaring vaker heeft gehad, dan kan dit hebben geleid tot een kant van haar die gevoelens van verdriet niet wil uiten en liefst niet eens wil voelen. Er kan worden besproken of dit een éénmalige situatie was of dat er veel van zulke onveilige gebeurtenissen zijn geweest. Als er regelmatig onredelijke eisen aan haar werden gesteld en ze bovendien gestraft werd als ze niet aan die eisen tegemoet kon komen, kan dit hebben geleid tot een geïnternaliseerde Straffende ouder-kant. Of misschien heeft kleine Tanya door deze ervaringen geleerd dat ze moet overcompenseren bij gevoelens van verdriet; dat ze ruggengraat moet tonen door anderen te domineren in plaats van gedomineerd te worden (bijv. Pest en Aanval modus). Afhankelijk van de gedragsproblemen en klachten van de jongere kunnen dit soort hypotheses worden gevormd, die ter verificatie of verfijning worden besproken met de jongere.

Naast experiëntiële technieken, zoals imaginatie, kunnen ook andere technieken behulpzaam zijn in de diagnostische fase. Cognitieve technieken kunnen bijvoorbeeld ingezet worden om de functie van bepaalde onaangepaste schemamodi te achterhalen. De voor- en nadelen van een schemamodus kunnen worden uitgevraagd, al dan niet in

combinatie met een experiëntiële component (bijvoorbeeld in een meerstoelentechniek waar verschillende schemamodi op verschillende stoelen worden gezet en worden geïnterviewd over hun voor- en nadelen).

Aan het eind van de diagnostische fase worden de verschillende schemamodi, hun oorsprong en hun functie weergegeven in een casusconceptualisatie. Dit kan bijvoorbeeld bestaan uit een levensverhaal, waarin duidelijk wordt hoe de verschillende schemamodi zijn ontstaan, en een overzicht van de verschillende kanten van de jongere (modusmodel). Hieronder geven we het levensverhaal en modusmodel van Jasper als voorbeeld.

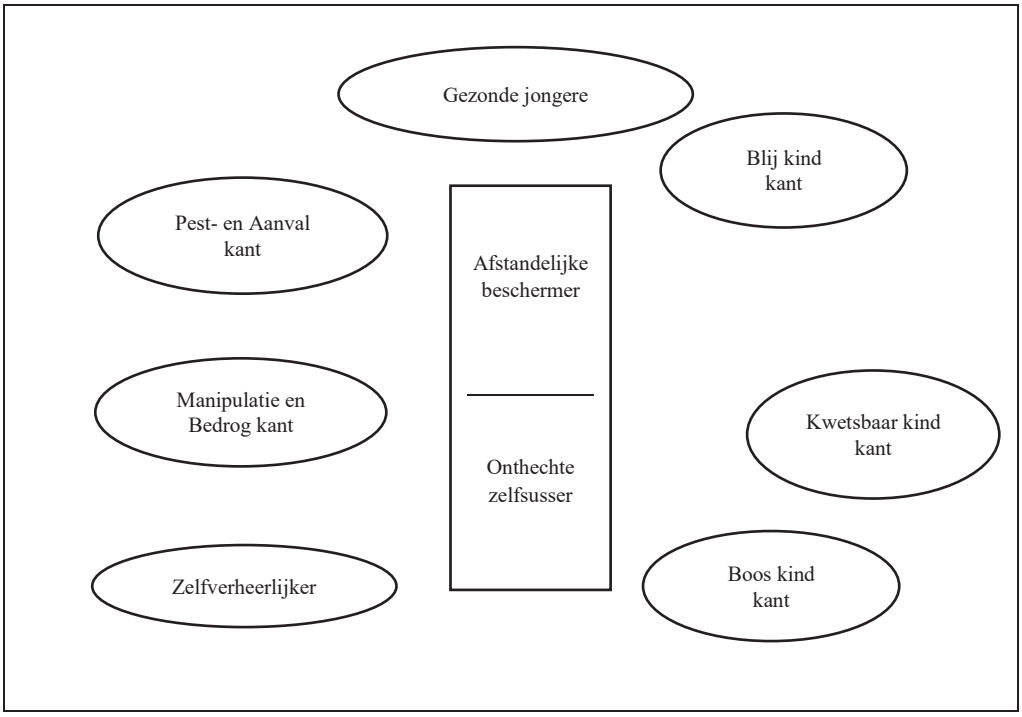
Levensverhaal en modusmodel Jasper

Het was bij kleine Jasper thuis niet altijd veilig. Zijn vader kon zó boos worden, dat hij zijn moeder sloeg. Nadat moeder al verschillende keren bij vader was weggegaan samen met kleine Jasper, zette zij de scheiding door. Zij wilde met Jasper, die toen zes jaar oud was, een nieuw leven opbouwen. Maar dat viel niet mee. Vader kwam hen nog regelmatig in een dronken bui thuis opzoeken. De situatie maakte Jasper angstig en verdrietig (*Kwetsbaar Kind*), maar hij wilde zich groot houden voor zijn moeder en probeerde de rol van "man in huis" over te nemen.

Zijn moeder nam verschillende baantjes aan om rond te kunnen komen. Zij was daardoor veel van huis weg. Jasper leerde al vroeg om zelfstandig te zijn en zijn eigen beslissingen te nemen. Als zijn leraar op school of zijn voetbaltrainer hem corrigeerde, voelde hij zich benadeeld en regelmatig resulteerde dit in een driftbui (*Boos Kind*). Hij werd dan zo boos, dat hij schreeuwde en met spullen gooide. Hij was sterk en merkte dat andere kinderen tegen hem opkeken of zelfs bang voor hem waren. Dat voelde eigenlijk wel fijn, hij voelde zich dan machtig. Op die momenten vergat hij de ellende die de kleine Jasper had meegemaakt.

Hij ging zich daarom steeds vaker "groot maken" door anderen te intimideren en vechtpartijen aan te gaan (*Pest en Aanval*). Dat leverde hem status op. Hij voelde zich superieur en vond dat hij zich niet aan regels hoeft te houden (*Zelfverheerlijker*). Hij ging amper nog naar school en accepteerde geen enkel gezag meer van volwassenen. Hij lichtte regelmatig mensen op om aan geld te komen (*Manipulatie en Bedrog*). Hij werd af en toe opgepakt door de politie, maar werd meestal snel weer vrijgelaten wegens gebrek aan bewijs voor criminele activiteiten. Zijn moeder schakelde jeugdzorg in en probeerde regels in te voeren in het huishouden. Jasper vond dat zij zeurde en er ontstonden steeds vaker ruzies tussen hen. Om weer rustig te worden, gebruikte hij cannabis (*Onthechte Zelfsusser).* Wanneer zijn moeder of een hulpverlener probeerde om hem met de problemen te confronteren, ontkende hij deze en gaf hij aan dat hij geen hulp nodig heeft (*Afstandelijke Beschermer*). Omdat hij hulp bleef weigeren werd hij uiteindelijk gedwongen opgenomen in een JeugdzorgPlus instelling.

- Zie volgende pagina voor modusmodel -



Wanneer de casusconceptualisatie gereed is, kunnen de jongere en schematherapeut samen therapiedoelen opstellen. In het geval van Jasper wordt afgesproken, dat de therapie zich eerst gaat richten op het verminderen van de Afstandelijke Beschermer, want anders zal de therapie stagneren. Daarna worden doelen opgesteld gericht op vermindering van de kanten die hem in de maatschappij het meest in de problemen brengen (Pest en aanval, Manipulatie en bedrog, en Zelfverheerlijker), evenals op het middelengebruik (Zelfsusser). Het Blije kind in Jasper wordt geactiveerd en de Gezonde kant wordt gestimuleerd om meer het heft in handen te nemen.

Veranderingsfase

Wanneer één of meerdere therapiedoelen zijn vastgesteld, kan de veranderingsfase beginnen. Net als in voorgaande fases staat ook in de veranderingsfase de limited reparenting houding van de behandelaar centraal. Van de limited reparenting houding kan een helende werking uitgaan, wat bijdraagt aan de verandering in bepaalde schemamodi. Daarnaast kunnen in de veranderingsfase experiëntiële, cognitieve, en gedragsmatige interventies een rol krijgen.

Een voorbeeld van een experiëntiële techniek is imaginatie met rescripting (Arntz & Jacob, 2012; Young et al., 2005). Het verschil met de diagnostische imaginatie is dat het

een stap verder gaat en de situatie als het ware probeert te herschrijven in de verbeelding ("rescripting"). De therapeut brengt zichzelf in het beeld en biedt het kind veiligheid of troost, komt voor het kind op, of voorziet op een andere manier in de behoeften van het kind in het imaginaire beeld. Op deze manier kunnen onaangepaste schema's bewerkt worden, maar staat de therapeut ook model voor de Gezonde modus van de jongere. De jongere zal de denkwijze en gedrag van de therapeut steeds meer internaliseren, waardoor hij of zij vanuit de Gezonde modus steeds meer zelf in zijn basisbehoeften kan voorzien en tegengas kan bieden aan disfunctionele modi. We beschrijven een voorbeeld van een imaginatie met rescripting, waarbij de therapeut een actieve rol heeft. We borduren daarbij voort op de imaginatie-oefening met Tanya zoals beschreven bij de diagnostische fase:

T: Ik ben bang. Mama komt op kleine Tanya af: ze weet dat ze haar gaat opsluiten in de kelder.
TH: Stop het beeld hier, Tanya. Ik wil niet dat zoiets gebeurt, ik wil dat je veilig bent. Ik ga daarvoor zorgen, dus ik kom in het beeld dat je nu in je hoofd hebt. Ik stap nu de keuken binnen, kan je me zien?
T: Ja.
TH: Ik sta vlak naast je, er kan je nu niets gebeuren want ik ben er om je te beschermen.
T: Je kunt toch niks doen, mama is heel erg boos dat je hier bent, ze zal me alleen maar harder straffen als je straks weer weg bent.
TH: Ik ga nergens heen, ik blijf hier net zolang als jij wil. Ik blijf je beschermen en ik laat je niet in de steek. Ik wil een paar dingen tegen je moeder zeggen, luister maar.
T: Oké…
TH: "Luister, moeder van Tanya, ik denk dat er hier iets heel erg mis is. Kijk eens naar Tanya, ze is heel erg bang voor je. Je mag niet zo tegen haar schreeuwen, ze is pas zeven jaar! Ze is nog maar een kind, je kunt niet van haar verwachten dat ze de vloeren dweilt en al die andere taken voor je doet. Dat is niet eerlijk!"
Tanya, hoe voel jij je als ik dit tegen je moeder zeg?
T: Ik weet het niet, ze lijkt alleen maar kwader te worden.
TH: Wat zegt ze?
T: Dat het jouw zaken niet zijn. En dat je niet over haar kunt oordelen, want je weet niet hoe haar leven in elkaar steekt. Ze heeft het moeilijk, zegt ze.
TH: "Luister, Tanya's moeder, het zijn wél mijn zaken, want ik vind Tanya belangrijk. Ik wil niet dat ze bang voor je is en ik wil zeker niet dat ze wordt opgesloten in de kelder. Ik weet zeker dat jij dat eigenlijk ook niet wil en ik kan me voorstellen dat je het moeilijk hebt. Je ziet er ook gespannen uit. Waarom ga je niet even een stukje wandelen, even nadenken en wat rustiger worden? Ik zorg wel voor Tanya." Tanya, hoe reageert ze in het beeld?
T: Ze doet haar jas aan.
TH: Oké, goed zo. Hoe voelt dat voor jou?

T: Ik weet het niet zo goed, niemand is ooit zo voor me opgekomen. Ik ben opgelucht dat ik niet in de kelder wordt opgesloten.
TH: Mooi. Dat gaat ook niet meer gebeuren, Tanya. Jij hebt, net als ieder ander kind, het recht om je veilig en geliefd te voelen thuis. Ik denk dat je moeder zelf problemen heeft en dat op jou afreageert. Dat heeft niks met jou te maken, het is niet jouw schuld.
T: (*begint zacht te huilen*)
TH: Het is heel belangrijk om te onthouden dat het niet jouw fout is, Tanya. Je bent pas een kind; ze kan niet van je verwachten dat je zulke grote taken doet en ze mag je al helemaal niet zo straffen.
T: (*knikt*)
TH: Is er iets wat je nu zou willen doen in het beeld? We kunnen ergens heen gaan om even wat plezier te maken, of even hier blijven zitten en nog wat praten?
T: Ik zou wel naar de dierentuin willen, daar ben ik nog nooit geweest.
TH: Oké, dan gaan we naar de dierentuin. Kom, voel je hoe ik je hand pak? We lopen nu naar buiten. We stappen mijn auto in en rijden ernaartoe. Kun je ons zien in het beeld?
(*De therapeut laat de imaginatie verder gaan, in ieder geval tot de gevoelens van angst en verdriet zijn gezakt*).

In bovenstaand therapiefragment zie je hoe de therapeut voor Tanya opkomt en haar moeder aanspreekt op haar gedrag. De therapeut blijft daarbij respectvol naar moeder toe en toont ook empathie voor de persoonlijke problemen van de moeder. Zeker in het werken met jongeren, die zowel emotioneel als financiëel vaak nog afhankelijk zijn van hun ouders, is het van belang om af te tasten in hoeverre de therapeut de ouders (al dan niet in imaginatie) kan aanspreken op hun gedrag zonder de jongere in een loyaliteitsconflict te brengen. Daarbij kan het helpend zijn om ook bij de ouder in termen van kanten te praten, bijvoorbeeld: “Jouw moeder heeft een heel lieve kant, die heel zorgzaam voor jou is en van wie jij heel veel houdt. Maar er is ook een kant van je moeder, die dingen kan doen die niet goed voor jou zijn.” Zo voorkom je dat de jongere het gevoel heeft dat je de moeder afwijst.

Daarnaast is in bovenstaand therapiefragment te lezen, dat de therapeut aandacht besteedt aan psychoeducatie over de rechten van een kind. Tanya gaf na de sessie aan, dat ze het meest geraakt werd door de opmerking van de therapeut, dat het niet haar schuld was. Dergelijke psychoeducatie wordt vaak verweven in experiëntiële technieken, zoals imaginatie met rescripting of de meerstoelentechniek, maar kan ook worden ingezet tijdens het nabespreken van dergelijke oefeningen, of als losstaande interventie.

In de veranderingsfase kunnen ook cognitieve interventies en gedragsinterventies worden ingezet om bepaalde cognities behorende bij de verschillende schemamodi te toetsen, of om nieuw gedrag aan te leren en daarmee de Gezonde Jongere modus te vergroten. Vaardigheidstrainingen om emotieregulatie en coping te verbeteren kunnen daarbij behulpzaam zijn.

Generalisatiefase

In de generalisatiefase wordt de frequentie van de sessies over het algemeen afgebouwd. De intensiteit van de therapeutische relatie tussen jongere en schematherapeut neemt af, hoewel de therapeut beschikbaar blijft voor de jongere en blijft voorzien in de basisbehoeften (limited reparenting). De focus in deze fase ligt op het benutten van de nieuwe vaardigheden die de Gezonde kant van de jongere in de afgelopen periode heeft aangeleerd. In deze fase wordt (het voorbeeldgedrag van) de therapeut verder geïnternaliseerd en leert de jongere om, ook zonder de directe nabijheid van de therapeut, in de eigen behoeften te voorzien.

Gedragsinterventies spelen vooral in de generalisatiefase een grote rol, omdat de jongere zijn aangeleerde (coping)vaardigheden steeds meer gaat oefenen in de maatschappij. Er dient te worden gezocht naar ondersteunende volwassenen in het sociale netwerk van de jongere, die de jongere bij zulke 'gedragsexperimenten' kunnen begeleiden. Er is daarnaast nog steeds plek voor experiëntiële technieken. Imaginatie leent zich bijvoorbeeld goed voor het oefenen van gezond gedrag in toekomstige, moeilijke situaties, als het niet mogelijk of niet wenselijk is om die situaties in real-life op te zoeken. De jongere kan zich bijvoorbeeld inbeelden dat hij of zij drugs aangeboden krijgt, dat hij of zij wordt uitgescholden of dat een dierbare wordt uitgescholden, dat hij of zij de dader tegenkomt van een misdrijf dat hem of een dierbare is aangedaan, etc. Hieronder illustreren we een imaginatie naar de toekomst in een fragment uit de therapie van Jasper.

Imaginatie naar de toekomst

TH: Wat denk je dat je in de problemen zou kunnen brengen als je straks weer in je oude buurt woont?

J: Ik denk dat ik op moet passen met harddrugs, maar ik denk dat ik wel heb geleerd om daar "nee" tegen te zeggen. Maar ik weet niet wat ik doe als ik uitgedaagd word op straat, ik heb toch een reputatie hoog te houden.

TH: Wat bedoel je?

J: Nou, iedereen was altijd een beetje bang voor mij. Ze wisten dat er niet met mij valt te sollen. Maar nu is er natuurlijk van alles veranderd en als ik terug kom moet ik weer mijn plek gaan vinden.

TH: Zullen we het eens gaan oefenen in de verbeelding?

J: Oké.

TH: Sluit je ogen en kijk maar of er een beeld opkomt van zo'n situatie, waarvan je denkt dat die je in moeilijkheden kan brengen.

J: (*Sluit zijn ogen:*) Ja, ik zie al iets. Ik zit op de bus te wachten en ik zie ze aankomen. Het zijn de jongens met wie ik vroeger vaak ruzie had op straat. Met één van hen heb ik vroeger drugs gedeald, maar we kregen ruzie over de opbrengst. Hij vond dat ik hem had opgelicht, omdat ik hem minder dan de helft van de opbrengst had gegeven, maar ik had het meeste werk gedaan.

TH: Kijk eens hoe de jongens naar je toe lopen. Hoe voel je je?
J: Een beetje gespannen, maar ik kan ze wel aan. Ik heb geen zin in moeilijkheden, als ze me aanspreken zal ik wel wat terug zeggen, of ze negeren als ze echt vervelend doen. Ik hoop dat de bus snel komt, dan kan ik naar school.
TH: Heel goed, dat is je Gezonde kant die spreekt. Hou dat vast! Wat gebeurt er nu?
J: Ze komen naar me toe en maken grappen over mijn periode in de gesloten jeugdzorg. Ik lach een beetje mee, maak er zelf ook maar een grapje over.
TH: Hoe voelt dat? Is dat wat je wil?
J: Zolang het hierbij blijft vind ik het niet erg. Ik heb hier niet echt last van.
TH: Waar zou je wel last van hebben?
J: Als me echt gaan uitdagen.
TH: Oké, laten we dat oefenen. Je Gezonde kant heeft gelijk: Je kunt ze wel aan, je hebt genoeg vaardigheden om op een goede manier met ze om te gaan, zonder dat het je in de problemen brengt. Ook als ze je uitdagen. Laten we het eens proberen. Beeld je maar in dat ze je uitdagen. Lukt dat? Wat doen ze?
J: Ja, die ene jongen zegt dat hij nog geld van me tegoed heeft van die drugs. Ik zeg tegen hem dat dit iets is uit het verleden en dat hij erover op moet houden. Dat ik geen zin meer heb in problemen en dat ze beter weg kunnen gaan.
TH: Heel goed! Wat gebeurt er nu?
J: Hij zegt dat ik een zwakkeling ben geworden in de instelling en ze lachen me uit.
TH: Wat doet dat met jou?
J: Ik voel woede opkomen, ik ben niet zwak! Ik wil ze laten zien dat ik ze nog steeds aankan, ik kan ze zo in elkaar slaan, allemaal!
TH: Ik hoor nu de Agressieve kant van jou, Jasper. Waarom is die er?
J: Ik laat me toch niet zo behandelen!
TH: Je vindt het moeilijk dat ze zich boven jou plaatsen; je voelt je klein, omdat zij jou uitlachen. In reactie daarop wil je je boven hen plaatsen, hen laten zien dat ze geen macht over jou hebben.
J: Ja, dat klopt. Ik weet dat het me weer in de problemen zal brengen, maar dat maakt me nu eigenlijk niks uit.
TH: Kijk eens naar de kant van jou die zich klein voelt. Wat heeft die nodig? Wat zou jouw Gezonde kant daartegen zeggen?
J: *(denkt even na)* Dat ik die jongens juist macht geef, door me uit mijn tent te laten lokken. Dat ze het niet waard zijn om voor in de problemen te komen. Het geeft niet wat ze over mij denken, ik weet dat ik niet zwak ben. Ik ben juist sterk, want ik probeer iets van mijn leven te maken, terwijl zij hun leven vergooien.
TH: Heel goed, Jasper, ik zou het niet beter kunnen verwoorden! Hoe voelt dat, als je Gezonde kant deze dingen zegt?
J: Eigenlijk wel goed, ik voel me niet meer zo klein en mijn woede zakt.
TH: Dat is fantastisch. Hoe kun je dan nu reageren op het gelach van de jongens?
J: Ik haal mijn schouders op en zeg dat ze kunnen denken wat ze willen.
TH: Goed zo, wat gebeurt er nu?

J: Die jongen zegt dat er niks meer aan is met mij en ze lopen weg. Hij zegt nog wel dat hij dat geld nog wil hebben. Maar als hij het echt zou willen, dan zou hij nu wel door blijven gaan, toch? De bus komt eraan. Ik stap de bus in.
TH: Dat heb je heel goed gedaan, Jasper, ik denk ook dat hij je niet al te veel meer lastig zal vallen over het geld. Eigenlijk heb je hem laten merken dat je boven hem staat, door niet in te gaan op zijn opmerking en hun gelach. Hoe voel je je als je in de bus zit?
J: Ik ben eigenlijk wel trots op mezelf, omdat ik niet agressief ben geworden.

In bovenstaand fragment zie je hoe de therapeut probeert om Jasper in de imaginatie bloot te stellen aan een situatie, waarin hij geneigd is agressief gedrag te vertonen. Wanneer Jasper dreigt terug te vallen in agressief gedrag, laat de therapeut hem reflecteren op de functie van dit gedrag. Het agressieve gedrag is namelijk een overcompenserende reactie op het zich 'klein' voelen. De therapeut laat Jasper vervolgens vanuit zijn gezonde kant reageren op dit gevoel, waarna de weg vrij wordt gemaakt voor een adequate reactie op de situatie. Door op deze manier te oefenen met moeilijke situaties, groeit het zelfvertrouwen van Jasper en zal hij minder snel terugvallen in oud, disfunctioneel gedrag.

Hanteren van 'boze' schemamodi

Na het bespreken van de verschillende fases van Schematherapie bij jongeren met gedragsproblemen, willen we extra aandacht besteden aan het omgaan met uitingen van boosheid. Dergelijke uitingen zijn natuurlijk inherent aan deze doelgroep, maar worden vaak gezien als ongewenst. Ze lokken over het algemeen straffende reacties uit van de omgeving, zeker wanneer er sprake is van verbale of fysieke agressie. Hulpverleners zijn geneigd om aan dergelijke uitingen van boosheid consequenties te verbinden. Binnen de reguliere GGz en Jeugdzorg zijn ze soms zelfs reden om behandeling te beëindigen.

Uitgaande van de Schematherapeutische opvatting dat uitingen van boosheid (overcompenserende) reacties kunnen zijn op geactiveerde vroegkinderlijke schema's, is het niet verstandig om uitingen van boosheid in alle gevallen in te perken. Het risico bestaat dat vroegkinderlijke schema's van de jongere (bijv. Emotioneel tekort, Wantrouwen/misbruik) dan juist bevestigd worden, terwijl een adequate reactie van de hulpverlener juist kan zorgen voor een ingang tot de onderliggende kwetsbaarheid. Dit geeft de ouder of hulpverlener de gelegenheid om tegemoet te komen aan de werkelijke behoefte van de jongere (welke gemaskeerd werd door de vermijdende of overcompenserende reactie), waardoor er een helende werking uit kan gaan van de huidige interactie.

Uitingen van boosheid kunnen een gevolg zijn van activatie van verschillende schemamodi, die allemaal om een andere benadering vragen. Het is daarom van groot belang om te kunnen herkennen vanuit welke schemamodus de boosheid geuit wordt. De eerste vorm van boosheid is wanneer de jongere het gevoel heeft compleet overspoeld te

worden door de boosheid, gelinkt aan de boosheid die de jongere als klein kind ervoer (Boos Kind). De jongere gedraagt zich dan als een klein, boos kind, of zelfs als een razend kind, dat de controle over zichzelf volledig verliest. Bij een tweede vorm van boosheid wordt de boosheid ingezet als een vermijdende coping stijl met het doel iemand op afstand te houden (Boze Beschermer). De jongere straalt dan boosheid uit, maar het is meer ingehouden boosheid. Deze modus beschermt de jongere tegen activatie van onderliggende gevoelens van kwetsbaarheid. Een derde vorm van boosheid is een uiting van overcompensatie voor onderliggende gevoelens van kwetsbaarheid, waarbij de jongere doelbewust anderen pest, vernedert of aanvalt en hier lustgevoelens bij ervaart (Pest- en Aanvalmodus). Uiteraard zijn niet alle uitingen van boosheid altijd te wijten aan bovenstaande, 'ongezonde' schemamodi. Een jongere kan ook boosheid vertonen vanuit de Gezonde modus. Deze boosheid is voor de hulpverlener te herkennen doordat de boosheid meer invoelbaar is (d.w.z. het is een logische reactie op omstandigheden), op adequate wijze wordt geuit en doordat de gezonde kant van de jongere de boosheid zal kunnen nuanceren. Omdat deze laatste boosheid geen speciale aanpak vereist en vaak niet als een probleem wordt ervaren, besteden wij hieronder alleen aandacht aan de drie vormen van boosheid die vanuit 'ongezonde' schemamodi worden vertoond.

Boosheid vanuit Boos Kind-modus

Wanneer de boosheid een uiting is van de modus Boos Kind, dan ervaart de jongere oprechte, heftige boosheid en is het belangrijk dat hij/zij de ruimte krijgt om deze gevoelens te kunnen ventileren. Het is daarom van belang om de jongere te laten uitrazen, hem daarbij te ondersteunen en serieus te nemen (ook al berust zijn boosheid op een verkeerde interpretatie van de situatie). Ter illustratie staat hieronder een fragment uit een therapiesessie, waarin de Boos Kind-kant van Tanya wordt geactiveerd door een opmerking van de therapeut.

Laten uitrazen van Boos kind modus
TH: Zullen we samen kijken naar hoe je gisteren in dat conflict terecht kwam? Ik wil je graag helpen om te begrijpen hoe het kwam dat het zo uit de hand liep.
T: (*staat abrupt op en schreeuwt:*) Hoezo wil jij me helpen, dat zeggen jullie allemaal! Weet je wel hoe vaak ik dat te horen krijg? En waar was je gisteren dan toen ik door de beveiliging werd vastgepakt en naar mijn kamer werd gebracht? Toen was je er toch ook niet om me te helpen? Je doet gewoon je werk en als je dienst erop zit, ga je naar huis.
TH: Je bent boos, omdat ik er gisteren niet voor je was toen je in de problemen zat.
T: (*staat nog steeds:*) Ja, je zegt altijd wel dat je me wil helpen, maar als het echt belangrijk voor me is dan ben je er niet. Ik heb al zo vaak gehoord dat mensen me willen helpen, maar niemand doet echt iets voor me!
TH: Je vindt dat niemand echt in jou is geïnteresseerd of jou belangrijk genoeg vindt om je echt te willen helpen.

T: (*iets rustiger:*) Ja, dat is toch ook al vaak genoeg bewezen!
TH: Heb ik nog meer dingen gedaan of gezegd die je boos maken?
T: (*is even stil en gaat weer zitten*): Nee, ik geloof gewoon niet dat je het echt meent als je zoiets zegt.
TH: Het spijt me dat ik er niet voor je was gisteren. Ik vind het heel erg als je in zo'n situatie terecht komt en natuurlijk zou ik er dan graag zijn om je te helpen. Als ik had geweten dat dit zou gebeuren, dan was ik waarschijnlijk nog niet naar huis gegaan. Maar ik wist het niet. Ik vind het heel naar dat je je in de steek gelaten voelde door mij.
T: Ik snap ook wel dat je niet 24 uur per dag hier kan blijven.
TH: Ja, dat snap je nu, maar gisteren was je gewoon heel erg boos op me en denk je daar niet over na. Ik vind dat ook wel begrijpelijk, want je stond er vroeger zo vaak alleen voor. Jouw ouders hadden hun eigen moeilijkheden, waardoor ze er niet genoeg voor je konden zijn en je niet hebben kunnen beschermen. Ik denk dat deze situatie, waarin ik er niet bij was toen je in dat conflict terecht kwam, bij jou die oude gevoelens van boosheid en pijn weer naar boven liet komen.
T: Ja, ik voelde me inderdaad in de steek gelaten. Toen je zei dat je me wilde helpen, geloofde ik je niet.
TH: Waarschijnlijk is er een kant van jou, die mij heel graag wil geloven als ik zeg dat ik je wil helpen en dat het mij raakt als het niet goed met jou gaat. Want dat is precies wat je vroeger gemist hebt: iemand die echt in jou geïnteresseerd is en er voor je wil zijn. Maar er is ook een kant van jou die denkt dat ik zomaar wat zeg, dat ik het helemaal niet meen.

In bovenstaand fragment laat de therapeut Tanya eerst uitrazen, om pas daarna in te gaan op het onderwerp van haar boosheid. Door haar te laten uitrazen neem je haar serieus en geef je de boodschap dat haar boosheid er ook mag zijn, dat deze begrijpelijk is. Merk op dat de therapeut zichzelf niet meteen verdedigt, ook al is de boosheid van Tanya misschien niet zo reëel. Zodra de jongere de gelegenheid heeft gehad om diens boosheid te uiten, geeft de therapeut pas uitleg en, indien gepast, kan de therapeut excuses aanbieden. Daarna maakt de therapeut een koppeling tussen de boosheid en de onderliggende gevoelens van emotioneel tekort bij Tanya, zodat zij beter begrijpt waar haar boosheid vandaan komt.

Boosheid vanuit Boze beschermer-modus

Jongeren met gedragsproblemen kennen, naast een Afstandelijke Beschermer modus, vaak ook een Boze Beschermer modus. Boosheid wordt dan ingezet in een poging om anderen op afstand te houden. De Boze Beschermer komt het vaakst voor in de motivatiefase van de therapie, maar kan ook in andere fases de kop opsteken. Hieronder lees je een fragment uit één van de eerste therapiesessies met Tanya:

Empathische confrontatie met Boze Beschermer modus
TH: Ik vind het fijn dat je met me mee bent gekomen, ook al wil je niks zeggen. Ik wil dat je weet dat ik dat oké vind.
T: (*zit met de armen over elkaar onderuitgezakt op een stoel, staart naar de grond met een norse uitdrukking op haar gezicht*)
TH: Weet je waarom ik dat oké vind? Ik denk dat je heel goede redenen hebt om niets te willen zeggen. Ik weet nog niet zoveel over je, maar ik weet wel dat als iemand niks wil zeggen, dat meestal komt doordat diegene van alles heeft meegemaakt in het verleden.
T: (*maakt vluchtig oogcontact en zegt:*) Denk maar niet dat ik je daar iets over ga vertellen, hoor.
TH: Je hoeft me niks te vertellen als je dat niet wilt, maar….
T: (*onderbreekt de therapeut en roept op boze toon:*) Ik heb toch al gezegd dat ik geen therapie wil? Je kunt wel gaan, hoor!
TH: Ik zie nu een kant van jou die erg boos doet en mij op afstand wil houden. En ik vind het heel erg logisch dat jij zo'n kant hebt ontwikkeld. Jij hebt waarschijnlijk vroeger zoveel meegemaakt en andere mensen hebben jou al zo vaak pijn gedaan, dat je mensen liever op afstand houdt. En je kent me helemaal niet, hoe moet je nou weten of ik te vertrouwen ben? Ik snap daarom heel goed dat je mij op afstand wil houden.
T: (*haalt schouders op*)
TH: Maar weet je, er is waarschijnlijk óók een kant van jou, die zich heel erg eenzaam en rot voelt doordat je anderen altijd op afstand houdt. Dat vind ik naar en ik wil die kant van jou echt heel graag helpen. Maar ik snap dat je dat niet zomaar toe kan laten. Ik hoop dat die boze kant van jou, die mij op afstand wil houden, op de langere termijn af en toe een klein stapje opzij durft te doen. Misschien kan dat wel, als je me wat langer kent. Ik wil dat je weet, dat ik die boze kant alle tijd zal geven die het nodig heeft. Want ik begrijp heel goed dat die kant jou altijd beschermd heeft en dat nog steeds wil doen. Ik hoop alleen, dat je ooit zult merken dat ik echt het beste met je voor heb en dat je die kant in de therapie misschien niet zo hard nodig hebt als vroeger.
T: (*kijkt de therapeut aan en knikt haast onmerkbaar*)

Zoals beschreven in de paragraaf over de motivatiefase, zijn er vaak veel van zulke (korte) sessies nodig, voordat de boze, beschermende kant van de jongere een stapje opzij wil doen. In die sessies probeert de therapeut vooral de functie van de beschermende kant te valideren en de jongere het inzicht te geven dat dit slechts één van zijn of haar kanten is. De therapeut is dan voornamelijk aan het woord, terwijl de jongere zwijgend tegenover hem zit. De therapeut geeft dan uitleg over de basisbehoeften van ieder mens en over de gevolgen, wanneer er niet aan die basisbehoeften is voldaan tijdens de (vroege) kindertijd en/of adolescentie.

Boosheid vanuit Pest- en Aanvalmodus

In de Pest- en Aanvalmodus zet de jongere agressief of intimiderend gedrag neer om te krijgen wat hij/zij wil. De boosheid kan gericht zijn op de therapeut of op een ander. Bij deze Pest- en Aanvalmodus is het van groot belang om het gedrag te begrenzen, maar wel op een empatische en realistische wijze. In onderstaand fragment schiet Jasper in zijn Pest- en Aanvalmodus wanneer de therapeut hem confronteert met een leugen.

Limit setting bij Pest- en Aanvalmodus

TH: Ik wil het even met je hebben over ons gesprek gisteren. Je hebt na afloop tegen je groepsleiding gezegd dat je van mij een rondje moest gaan lopen om je hoofd leeg te maken. Dat is niet waar en je hebt momenteel geen toestemming om zelfstandig buiten rond te lopen. Ik vind het vervelend dat je mij hebt gebruikt om toch dat rondje te kunnen lopen.
J: (*schuift stoel achteruit en duwt daarbij de tafel in de richting van de therapeut:*) Wie denk je wel dat je bent dat je zo tegen me kan praten! Begin jij nu ook al? Jullie spannen allemaal samen tegen mij!
TH: Jasper, laat die tafel staan en laten we hier rustig over praten.
J: Alsof er met jou te praten valt! Jij denkt dat je heel wat bent, maar je bent gewoon een – (*scheldwoord*)!
TH: Jasper, stop!
J: Ik stop niet, ik ben boos en dat mag ik toch altijd laten zien in de therapie? Nou, laat maar zien dat je het aankan dan, nu ik echt boos ben!
TH: Jasper, stop. Op deze manier kan ik niet met je praten. Dit is niet alleen maar boosheid, dit is jouw agressieve kant en als die er is, dan heb ik geen gelegenheid om iets te zeggen. Die kant drukt mij in een hoek en dat wil ik niet.
J: Dan moet je een keer écht naar me luisteren in plaats van te doen alsof. Ik zei toch dat het voor mij belangrijk is om wat meer vrijheid te krijgen en als ik jou daarvoor moet gebruiken, dan doe ik dat!
TH: Jasper, ik wil dat je mij nu even laat praten. Ik wil het graag hebben over je boosheid en je behoefte aan meer vrijheid, maar je moet me wel wat ruimte geven. Bovendien voel ik me onveilig als jij de tafel zo naar me toe schuift en op dreigende toon tegen me praat en naar me kijkt, dat wil ik niet. Ik wil graag naar je luisteren, maar jouw agressieve kant maakt me dat nu erg moeilijk.
J: (*schuift de tafel terug en kijkt de hulpverlener wat uitdagend aan:*) Praat maar!
TH: Oké. Ik wil afspreken dat we zorgen voor elkaars veiligheid; wij moeten ons allebei veilig voelen hier. Daarnaast wil ik net als jij respectvol behandeld worden, dus ik wil niet dat je me uitscheldt. Laten we even rustig praten over wat er gebeurde en wat jouw agressieve kant activeerde, goed?
J: (*knikt onwillig*)
TH: Goed. Toen ik hoorde wat je gedaan had, voelde ik me een beetje gebruikt. Ik snap dat het niet gemakkelijk is om hier te wonen en om je altijd maar aan de regels te moeten houden, maar ik vind het naar dat je mij gebruikte om meer vrijheid af te dwingen. We

hebben juist zo'n goede band opgebouwd samen en juist daarom raakt het me dat je dit zo hebt aangepakt.
J: Dat snap ik ook wel en dat had ik misschien ook niet moeten doen, maar de manier waarop je dat net tegen me zei maakte me wel heel erg boos.
TH: Wat was het precies dat jou boos maakte? Was het bijvoorbeeld de toon waarop ik het zei of de woordkeuze?
J: Ik denk de stelligheid, ik kreeg niet de kans er iets over te zeggen. Ik krijg zo vaak de schuld overal van en vaak is het niet eens terecht. Daar word ik dan heel boos van.
TH: Dat snap ik, het is heel pijnlijk om altijd maar de schuld te krijgen, zeker als je het niet gedaan hebt. In dit geval was het dan wel terecht, maar het triggerde bij jou toch het gevoel van: Ik krijg altijd maar de schuld, anderen moeten mij altijd hebben?
J: Ja, dat klopt, daarom deed ik zo agressief.

Uit bovenstaande illustratie blijkt dat het in dit geval toch mogelijk is om in gesprek te blijven, ook al vertoont Jasper intimiderend en agressief gedrag. De therapeut geeft aan wat het met haar doet als Jasper zo agressief tegen haar doet en geeft hem op die manier inzicht in het effect van zijn agressieve kant op anderen. Als er sprake is van hevige agressie of als de situatie echt onveilig is, dient er uiteraard resoluter begrensd te worden. In een gesloten jeugdzorg setting kan dat resulteren in bijvoorbeeld een kamerplaatsing of in het uiterste geval zelfs een fixatie, maar alléén als het niet anders kan. Dit dient dan gepaard te gaan met de uitleg dat de agressieve kant van de jongere de situatie zo onveilig maakt, dat een andere oplossing niet mogelijk is. Achteraf kan dan in een gesprek met de jongere alsnog worden geprobeerd om contact te krijgen met de onderliggende gevoelens van kwetsbaarheid waarvoor overcompenserend gedrag werd vertoond.

Hulpmiddelen

In de verschillende fases van de Schematherapie kunnen hulpmiddelen worden ingezet. Eerder is al genoemd dat het spelen van een spelletje, een wandeling of een andere activiteit de therapeutische relatie kunnen bevorderen. In de diagnostische fase, waar de verschillende schemamodi van de jongere en hun oorsprong verkend worden, kan gebruik worden gemaakt van creatieve opdrachten. Zo kan de behandelaar de jongere vragen om een tekening te maken van een bepaalde modus of om plaatjes, die met de modus te maken hebben, in een werkboek te plakken. Het gebruik van modikaarten, zoals de iModes (Bernstein, van Oorsouw, Candel, Clercx, & Alberts, 2017), verdient een bijzondere vermelding. Deze kaarten bevatten plaatjes en omschrijvingen van alle schemamodi en kunnen op verschillende manieren, en in alle fases van de Schematherapie, worden gebruikt. Aan het begin van de therapie kan de jongere gevraagd worden om de kaarten door te nemen en om die kaarten, die op hem of haar van toepassing zijn, op tafel te leggen. Modikaarten kunnen ook gebruikt worden om situaties, waarin probleemgedrag zich voordoet, te verhelderen door te bekijken welke schemamodi tijdens die situatie geactiveerd

worden en in welke volgorde. Het leggen van de modikaarten in de juiste volgorde kan veel inzicht geven in de oorzaken en functies van problematisch gedrag. Als er iemand anders bij een probleemsituatie betrokken is, bijvoorbeeld een ouder of een groepsleider, kan die persoon ook met behulp van de modikaarten aangeven welke kanten hem of haar worden geactiveerd, zodat ook naar de interactie tussen de (modi van de) personen in de probleemsituatie gekeken kan worden. Daarnaast kunnen de modikaarten ondersteunen bij interventies zoals empathische confrontatie en bij het uitleggen van de verschillende schemamodi van een jongere aan groepsleiding, ouders en eventueel andere betrokkenen.

Rol van ouders

Het is van belang om, waar mogelijk, ouders in de behandeling te betrekken, aangezien zij vaak nog een grote rol spelen in het leven van de jongere. Bovendien kunnen bepaalde interactiepatronen tussen de jongere en zijn of haar ouders leiden tot het in stand houden van onaangepaste schema's, of tot de activatie van disfunctionele schemamodi en daaraan gerelateerde gedragsproblemen. Anderzijds kunnen gezonde interactiepatronen juist bijdragen aan de vermindering van de gedragsproblemen van de jongere.

Bij de start van de Schematherapie is het van belang om ouders uitleg te geven over de therapie en de theoretische concepten die eraan ten grondslag liggen. Informatie van ouders kan ook waardevol zijn in de diagnostische fase, zodat er meer zicht verkregen kan worden op het ontstaan van de onaangepaste schema's en disfunctionele schemamodi van de jongere. Aan het eind van de diagnostische fase kan de behandelaar, bij voorkeur samen met de jongere, uitleg geven aan ouders over de verschillende schemamodi van de jongere, het ontstaan hiervan, en daarmee gepaard gaande gedragsproblemen in het hier en nu. De opvoedingsstijl van de ouders zal in veel gevallen (onbedoeld) hebben bijgedragen aan het ontstaan van de schema's, schemamodi en gedragsproblemen van de jongere. De behandelaar dient de jongere te ondersteunen in het, op adequate wijze, uitspreken van de gevoelens die hij of zij in de kindertijd had, van wat hij of zij gemist heeft vroeger. Vaak is hier in het gezin nog nooit over gesproken. Soms is het nodig dat de behandelaar dit op voorhand bespreekt met de ouders alleen, zonder de jongere erbij, zodat de ouders de tijd hebben om hierover na te denken. Hierdoor is de kans groter dat zij empathisch kunnen reageren op het moment dat de jongere zijn of haar gevoelens uitspreekt, in plaats van dat zij mogelijk afwijzend reageren omdat ze erdoor worden overvallen. Een afwijzende reactie zou bepaalde onaangepaste schema's (bijvoorbeeld Emotioneel tekort) kunnen versterken, terwijl een empathische reactie de kans vergroot dat de gesprekken resulteren in wederzijds begrip voor elkaars gedrag en reacties. Hierdoor ontstaat er ruimte om gezondere interactiepatronen tot stand te gaan brengen.

In de veranderingsfase kunnen dergelijke gezonde interactiepatronen worden gestimuleerd door conflictsituaties tussen de jongere en ouders gezamenlijk te analyseren en bespreken. Bepaalde schemamodi van de ouders kunnen namelijk leiden tot versterking van bepaalde schemamodi van de jongere, en vice versa. Dit wordt ook wel *modusclash*

genoemd (Loose, Graaf & Zarbock, 2015). We geven een voorbeeld van een conflictsituatie tussen Jasper, zijn moeder en zijn stiefvader:

Jasper wil naar een feest. Moeder is bang dat hij daar drugs gaat gebruiken en verbiedt hem om te gaan. Jasper vindt dit oneerlijk en wordt boos (Boos Kind). Als zijn moeder voet bij stuk houdt, begint hij tegen haar te schreeuwen. Stiefvader reageert daarop door te zeggen dat hij onmiddellijk op moet houden, anders kan hij naar zijn kamer vertrekken (Straffende Ouder). Jasper wordt nog bozer en schreeuwt tegen stiefvader dat hij zich nergens mee moet bemoeien (Boos Kind versterkt). Stiefvader roept dat hij nu direct naar boven kan gaan en dat hij hem anders een handje zal helpen (Straffende Ouder versterkt). Uiteindelijk escaleert het in een fysiek incident, waarbij zowel Jasper als stiefvader intimiderend en agressief gedrag vertonen (Pest en Aanval modi die elkaar versterken).

Bij het analyseren van dergelijke conflictsituaties kan het helpend zijn om de verschillende schemamodi van de betrokken gezinsleden te visualiseren. Dit kan bijvoorbeeld met behulp van de modikaarten (iModes; Bernstein, van Oorsouw, et al., 2017), zoals eerder beschreven, of met poppetjes (bijvoorbeeld van Duplo). De interacties tussen de schemamodi van de betrokken gezinsleden worden zo in beeld gebracht, waardoor voor de gezinsleden duidelijk wordt welke reacties hun verschillende kanten bij de ander oproepen. Ook wordt dan duidelijk op welke momenten de Gezonde kant van één van hen had kunnen ingrijpen om escalatie te kunnen voorkomen en het conflict op te lossen. Door conflictsituaties op deze manier systematisch te blijven bespreken met de jongere en zijn of haar ouders, zullen zij meer inzicht krijgen in elkaars behoeften en zullen zij vaardigheden ontwikkelen om conflicten te voorkómen.

Schematherapeutisch behandelklimaat

Indien Schematherapie wordt aangeboden binnen een residentiële setting is het van belang om het behandelklimaat af te stemmen op de principes vanuit de Schematherapie. Door pedagogisch medewerkers op te leiden in de basisprincipes van de Schematherapie en het werken met schemamodi, kan het effect van de Schematherapie gemaximaliseerd worden. Belangrijk uitgangspunt is dat de basishouding van de pedagogisch medewerkers gebaseerd is op limited reparenting: binnen de grenzen van de behandelrelatie proberen de pedagogisch medewerkers te voldoen aan de basisbehoeften van de jongere. Zij tonen betrokkenheid op de jongeren, zijn belangstellend naar de beweegredenen van hun gedrag(sproblemen) en zorgen voor een veilig behandelklimaat waarin jongeren hun gedachten en gevoelens bespreekbaar durven te maken.

Het behandelklimaat zorgt dus voor een veilige en stevige basis, waarbinnen de Schematherapie kan plaatsvinden. Pedagogisch medewerkers zijn een belangrijke bron van informatie voor de therapeut. Over het algemeen zien zij meer verschillende kanten van een

jongere, dan de therapeut binnen de beperkte tijd in de therapiesessies. Een Pest- en Aanval modus wordt, bijvoorbeeld, over het algemeen vaker geactiveerd op de behandelgroep (in reactie op groepsgenoten of op gestelde grenzen door pedagogisch medewerkers) dan binnen de therapiesessies.

Pedagogisch medewerkers leveren daarnaast ook een actieve bijdrage aan de behandeling. Waar de Schematherapie zich tot één of enkele uren per week beperkt, is het mogelijk om op de behandelgroep de therapeutische behandeling voort te zetten. Pedagogisch medewerkers zijn goed op te leiden tot het werken met de verschillende modi van de jongere, waarbij zij technieken zoals empathische confrontatie en limit setting veelvuldig kunnen toepassen. Daarnaast kunnen zij (eventueel met behulp van de modikaarten) met de jongere bespreken welke kanten van hem/haar die dag zichtbaar zijn geweest en wat deze kanten nodig hebben van de pedagogisch medewerkers. Samen met de jongere kunnen zij een bepaalde modus verder gaan onderzoeken (wanneer wordt die kant geactiveerd, wat is de trigger, wat voelt, denkt en doet die kant?). Bovendien kunnen zij in een later stadium van de behandeling de jongere helpen om te experimenteren met alternatief (coping)gedrag.

Het Schematherapeutisch model geeft pedagogisch medewerkers houvast in het omgaan met uitingen van boosheid en agressie door jongeren (zie paragraaf ‘Hanteren van boze modi’). In een behandelklimaat dat gebaseerd is op principes uit de Schematherapie zullen pedagogisch medewerkers niet alleen reageren op het zichtbare gedrag, maar zullen zij ook begrip tonen voor onderliggende schema’s of gefrustreerde basisbehoeften van de jongere. Grenzen worden dus niet gesteld op basis van ‘de regels’ of ‘macht’, maar omdat grensoverschrijdend gedrag de behandelrelatie tussen groepsleiding en jongere, of andere relaties van de jongere, beschadigt.

Het Schematherapeutisch werken vraagt vaak een omslag in het denken van een behandelteam en management van een residentiële instelling, en in het bijzonder een gesloten jeugdzorginstelling waar strakke kaders vaak de boventoon voeren. We geven een voorbeeld. Als een jongere wegloopt, kan dit verklaard worden vanuit verschillende schemamodi. Het kan gaan om onder andere een Afstandelijke Beschermer modus (“Ik heb me nu te kwetsbaar opgesteld, dat kan ik niet meer aan”), een Ongedisciplineerd Kind modus (“Jullie ontnemen mij mijn vrijheid en dat pik ik niet”) of een Straffende Ouder modus (“Van mij komt toch niks meer terecht, ik verdien het niet om zorg en behandeling te krijgen”). Als een residentiele instelling dan het beleid hanteert, dat wegloopgedrag altijd op dezelfde wijze gesanctioneerd dient te worden, gaat dit voorbij aan de verschillende mogelijke verklaringen voor wegloopgedrag. Waar een Ongedisciplineerd Kind modus duidelijke grenzen nodig heeft, heeft een Afstandelijke Beschermer eerder behoefte aan begrip en hulp om anders om te gaan met gevoelens van kwetsbaarheid, en dient het zelfbeeld versterkt te worden van een jongere met een sterke Straffende Ouder modus. Een standaard sanctie op wegloopgedrag kan in sommige gevallen disfunctionele schema’s versterken.

Het is van belang om pedagogisch medewerkers goed op te leiden in het herkennen van verschillende modi en in het omgaan met deze modi. Frequente training en coaching van pedagogisch medewerkers draagt bij aan een succesvolle implementatie van een Schematherapeutisch behandelklimaat (zie Bernstein, van Oorsouw, et al., 2017). Het aanleren van de Schematherapeutische principes en technieken alleen is niet voldoende. Pedagogisch medewerkers dienen zich daarnaast ook bewust te worden van hun eigen disfunctionele schema's en van hun eigen schemamodi, die geactiveerd kunnen worden door (problematisch) gedrag van jongeren. Dit vraagt om bepaalde competenties van de pedagogisch medewerker, zoals voldoende reflectiemogelijkheden.

Het gezamenlijk werken aan het veranderen van schemamodi en probleemgedrag is van grote meerwaarde voor zowel de jongere als het behandelteam. Schematherapeutische behandeling is niet afhankelijk van beperkte therapie-uren en iedereen spreekt dezelfde (modi-)taal. Door de intensieve samenwerking is er minder kans op 'splitsing' tussen therapeut en groepsleiding door de jongere. Er ontstaat een geïntegreerd behandelprogramma, waarin de jongere zich meer begrepen en gesteund voelt. De belangrijkste focus ligt op het tegemoetkomen aan de basisbehoeften van de jongere, waarbij de behoefte aan duidelijke, maar rechtvaardige grenzen net zo belangrijk is als de behoefte aan verbinding en begrip.

Dankwoord
Met dank aan de jongeren en groepsleiding van de Ottho Gerhard Heldringstichting: Zonder hen had ik niet de kennis en ervaring gehad om dit hoofdstuk te kunnen schrijven. Daarnaast wil ik in het bijzonder mijn collega's Elke Gijsbers, Belinda Ester, Peter van der Sanden en Titina Chabot bedanken voor hun suggesties voor verbetering van dit hoofdstuk.

CHAPTER 9

General Discussion

Although diagnosing personality disorders (PDs) in adolescents is controversial, ignoring the presence of PDs in this age group may negatively impact treatment outcomes. When treatment is focused solely on seemingly more prominent behavioral or emotional problems, such as externalizing behavior disorders, repetitive maladaptive patterns of personality functioning may become more and more rigid and inflexible to change (Chanen, 2015). Thus, it is important to recognize and diagnose (traits of) PDs in adolescents, and to have evidence-based treatments available to treat them.

The theoretic framework and effectiveness of Schema Therapy (ST; Young, Klosko, & Weishaar, 2003) has been greatly supported by research with adults with PDs, yet little is known about ST with adolescents. This dissertation investigated schema coping and schema modes in adolescents, and tested ST's theoretic framework by investigating relationships between its core constructs and behavior problems. Furthermore, this dissertation aimed to address the application of ST to adolescents with PD traits and disruptive behaviors, and to cover first attempts in investigating the effectiveness of both individual ST and Safe Path, a milieu based approach, for this population.

SHORT SUMMARY OF RESULTS

Part I: ST Theory in Adolescents

We found that schema coping and schema modes are valid and reliable constructs in adolescents (Chapter 2). The same schema coping styles (i.e., surrender, avoidance, and overcompensation) and schema modes that have been found in adults were distinguished in adolescents. We could not confirm higher-order factor models of schema modes based on theory or previous research, but found preliminary evidence for an alternative model of internalizing modes, externalizing modes, overachieving modes, and healthy modes. The results provided initial validation of the Schema Coping Inventory and the 80-item Schema Mode Inventory in adolescent populations.

When investigating the relationships between EMSs related to disconnection and rejection, schema coping, and schema modes in adolescents (Chapter 3), we found convincing evidence that schema coping styles were the mechanisms through which EMSs relate to schema modes (mediation). We found that some relationships between EMSs and schema modes were also dependent on the extent of schema coping (moderation). For example, the relationships between disconnection and rejection EMSs and the Abandoned Child mode were not only *explained by* surrendering coping, but were also *dependent on* the level of surrendering coping.

When linking ST's core constructs to behavior problems, we found that schema coping and schema modes mediate the relationships between EMSs related to disconnection and rejection and behavior problems. Surrendering coping and internalizing modes were the mechanisms through which these EMSs were related to internalizing behavior problems, such as depression and anxiety. On the other hand, overcompensatory coping

and externalizing modes were the mechanisms through which these same EMSs were related to externalizing behavior problems, such as oppositional and aggressive behaviors. Thus, the same EMSs of disconnection and rejection statistically predicted both internalizing and externalizing behavior problems.

Additional evidence for EMSs to predict externalizing behaviors came from our experimental study on aggression in male adolescents in secure residential youth care (Chapter 4). The results showed that, after inducing feelings of unfairness, the occurrence of anger and subsequent aggression was increased when the patient had higher levels of the EMSs Abandonment and Entitlement.

Part II: Effectiveness and Clinical Application of ST in Adolescents with Externalizing Behavior Problems

With our multiple case study (Chapter 5), we were the first to investigate the feasibility and effectiveness of ST with adolescent patients with PD traits and severe disruptive behaviors. We found support for the feasibility of delivering ST within a residential treatment setting, and the results also provide preliminary evidence for the effectiveness of ST interventions with this population. From these promising results, we concluded that the application of ST to this population deserves further study. We designed a Randomized Controlled Trial (RCT) to compare the effects of individual ST delivered in an ST-based treatment milieu with treatment as usual (cognitive-behavioral therapy or trauma therapy in a treatment milieu based on cognitive and behavioral principles). Inclusion of patients is slower than expected and therefore still continuing. So far, 69 patients were included in the RCT, and we aim to include 128 patients in total.

Chapter 7 includes a preliminary report on the effectiveness of Safe Path, a team-based intervention for group care workers of a secure residential treatment facility. Preliminary results showed that, during the four months after implementation, there was some increase in staff's use of the schema mode language, but that implementation was far from complete. It was too premature to draw any conclusions on the effectiveness of Safe Path on group climate, patients' aggressive incidents, staff's team functioning, and severe interventions carried out by staff (e.g., physical interventions, seclusion, transfer to more restrictive treatment unit). Data collection will be continued for a full year after start of implementation, because that is the time it usually takes to successfully implement Safe Path (D. P. Bernstein, personal communication, September 15, 2017).

Research findings were combined with clinical experience to describe the application of ST to adolescents with PD traits and externalizing behavior problems in Chapter 8. This chapter includes many illustrations of ST techniques, and aims to guide therapists in working with schema modes that are associated with anger expression in adolescents.

GENERAL DISCUSSION

Part I: ST Theory in Adolescents

The finding that schema coping and schema modes are valid and reliable constructs in adolescents is consistent with other studies on ST constructs in adolescents (Muris, 2006; Roelofs, Lee, Ruijten, & Lobbestael, 2011; Roelofs, Muris, & Lobbestael, 2016; Van Vlierberghe, Braet, Bosmans, Rosseel, & Bögels, 2010). This supports the notion that maladaptive and persistent patterns of emotions, cognitions, and behaviors, characterizing patients with PDs, are already present in adolescence. EMSs, schema coping, and schema modes meaningfully relate to each other, and differences in these relationships seemed to exist neither between adults (Rijkeboer & Lobbestael, 2012) and adolescents, nor were they found between a clinical and community sample of adolescents. Thus, our research strongly supports the broad applicability of ST's theoretic framework.

An important finding of our research is that the same EMSs of disconnection and rejection seem to be at the core of both internalizing and externalizing behavior problems. This implies that, for patients both with internalizing problems and with externalizing problems, treatment interventions should address EMSs that are related to early attachment experiences of disconnection and rejection. Additional evidence for the importance of a treatment focus on underlying EMSs comes from our experimental study showing that even the Abandonment EMS, which is usually associated with internalizing emotions and behaviors, can predict externalizing emotions and behaviors, such as anger and aggression. Patients with high levels of Abandonment and other disconnection and rejection EMSs need warmth and support to provide them with correctional experiences in professional and personal relationships, yet research has shown that patients displaying externalizing behaviors often get the least of such positive attention (Moses, 2000; Wigboldus, 2002). Furthermore, in current clinical practice, interventions targeting aggression and other disruptive behaviors typically do not include a focus on underlying EMSs.

ST could be a promising treatment for adolescents with both personality disorder traits and disruptive behaviors. As an early intervention for PDs, it could prevent maladaptive patterns of emotions, cognitions, and behaviors to become even more chronic and inflexible in adult life (Chanen, 2015; Fonagy et al., 2015). Because our results provide initial validation of the SCI and 80-item SMI in adolescents, these instruments (as well as the Schema Questionnaire for Adolescents; Van Vlierberghe et al., 2010) may guide the establishment and pursuit of individual treatment goals in ST.

Part II: Effectiveness and Clinical Application of ST in Adolescents with Externalizing Behavior Problems

The findings of our multiple case study are consistent with the results of another multiple case study, which found preliminary evidence for the effects of group ST with adolescent patients with PD traits and internalizing problems (i.e., mood disorders) (Roelofs et al., 2016). The preliminary support for the effectiveness of ST for these populations is in line

with our research finding that EMSs, coping responses, and schema modes relate to both internalizing and externalizing behaviors in adolescents.

The four patients in our multiple case study all seemed to benefit from our use of the schema mode language and associated ST interventions. Rather than being criticized for their disruptive behaviors, patients were provided with an explanatory framework for their behaviors based on their childhood experiences. The therapist used limited reparenting, empathic confrontation, and limit setting combined with schema mode work and other techniques. When showing compassion for their reasons for developing disruptive behaviors in the past, patients are more prone to acknowledge the current, problematic character of their behaviors. Acknowledging the downsides of their behaviors will increase the likelihood of becoming intrinsically motivated for change (Miller & Rollnick, 1991), which is a critical issue in secure residential youth care where treatment is mandated by court.

The development of a therapeutic relationship and patients' true engagement in their treatment costs energy and time. To speed things up, which is essential in Dutch secure residential youth care where patients stay six to nine months on average, therapy sessions should occur twice a week rather than once a week. A higher session frequency leads to higher amounts of recovery at a faster rate (Jacob & Arntz, 2013; Freedman, Hoffenber, Vorus, & Frosch, 1999; Reese, Toland, & Hopkins, 2011). Nevertheless, even with a higher session frequency, changing pervasive patterns of maladaptive functioning takes time. Several issues in secure residential care may jeopardize the time needed to establish such changes. First, 20% to 35% of the patients leave the secure residential facility before treatment is completed (Boendermaker & Uit Beijerse, 2008; van Dam et al., 2010), for example when patients run away or when unexpected decisions are made by court. Second, over the past years there have been political tendencies to minimize duration of residential treatment, which influences court decisions.

The limited treatment duration requires the development of a continuity of care model, in which the same theoretical basis and approach will guide treatment both during and after a patient's stay in secure residential youth care. Secure residential treatment may be necessary to temporarily offer the patient a secure environment in which he or she cannot retract from treatment (Harder et al., 2006), but after discharge some patients quickly relapse into old, maladaptive behaviors (Harder, Knorth, & Kalverboer, 2011). Aftercare is moderately effective in preventing such relapse, but patients often experience sudden transitions and discontinuity from residential treatment to aftercare (Garner et al., 2007; Harder et al., 2006; 2011). Stein (2006) defined three groups of patients leaving residential care: Those 'moving on', who are able to maintain and continue treatment gains during their transition into the community, 'survivors', who can just about cope when personal and professional support is effective, and 'strugglers', who still are severely impaired and need sustained care well into adulthood. Adolescents of the latter two groups, who have experienced more instability and discontinuity in life than those moving on

(Stein, 2006), may specifically benefit from a continuity of care model. A consistent approach throughout various stages of treatment, based on the same theoretic framework, may support their transition back into the community.

Safe Path, the team-based intervention based on ST principles we implemented in treatment teams, can also be applied to the social network of a patient (Bernstein, van Oorsouw, Candel, Clercx, & Alberts, 2017). It could serve as the basic intervention that is delivered to parents and other significant persons throughout treatment, regardless of whether the patient is in secure residential treatment, other residential treatment, independent living programs, or living back at home. During secure residential care, a Safe Path coach could stimulate the patient's network to work together as a team, using the mode language, in order to help the patient maintain and expand treatment gains (Bernstein, van Oorsouw, et al., 2017). Research has shown that interventions focused on both the individual patient and his or her social network leads to higher improvements in patients' behavior problems, retention in treatment, and parental stress (Geurts, 2010; Hair, 2005).

Our preliminary report on the effectiveness of Safe Path with secure residential treatment teams indicated that it is yet premature to draw conclusions. Effective implementation of new methods in secure residential youth care is difficult, because it may be opposed by safety and security policies of the treatment facility, or by the tension between care and control (Bijl, Eenshuistra, & Campbell, 2010). Staff's interventions regularly differ from the methodology that should be used in theory, especially in case of severe disruptive behaviors that are typically treated in a controlling fashion (Andersson & Johansson, 2008; Harder, 2011). Such a controlling approach reduces the quality of the relationship between staff and patients, which is an important issue because a good quality relationship predicts positive outcomes (Harder, Kalverboer, Knorth, & Zandberg, 2008). Thus, it is important to provide not only basic training when implementing new methods, but to also offer regular and ongoing supervision for the group care workers who deal with this complex patient population. The full data-set (one year after implementation) on Safe Path should answer questions about its effect on the group climate, incidents of aggression, staff's team functioning, and staff's use of severe interventions.

STRENGTHS AND LIMITATIONS

The main strength of this dissertation is that it combines research on both theory and clinical effectiveness of ST in adolescents, and that it also includes a chapter illustrating the use of ST with adolescents with severe externalizing behaviors. The dissertation includes the first attempts to validate theoretic constructs and questionnaires for use in adolescents, and to test the application of ST principles in both individual ST and team-based interventions in residential treatment for disruptive behaviors. We used a variety of methods, such as an experimental design, a large survey, and clinical trials, to test our

hypotheses. For the survey, we obtained a large sample size including both referred and non-referred adolescents.

There are also some limitations that need to be addressed. First, some studies investigating the effectiveness of ST-based interventions are still continuing with data collection, which makes it impossible or premature to draw conclusions. Second, our survey generated cross-sectional data only, hampering definite causal inferences from the theory-based mediation models linking ST's core constructs with behavior problems (Chapter 3). Third, our studies measured the constructs by only one instrument at the time, whereas the use of multiple measures (e.g., self-report, informant-report, observational measures, implicit measures) may generate more knowledge about the constructs. Fourth, generalizability of some findings may be impaired by small sample sizes, specifically in the multiple case study (Chapter 5), but also, albeit to a lesser extent, in our experimental study (Chapter 4). Furthermore, the experimental study included male adolescent patients in secure residential care only, so we do not know whether the findings can be generalized to females or to patients in other forms of youth care.

SUGGESTIONS FOR FUTURE RESEARCH

Future research should use and compare several measures of ST's core constructs to gain more insight in certain aspects of these constructs. For example, differences have been found between self- and other-reported measures of internalizing and externalizing problems (with patients reporting more internalizing problems and others reporting more externalizing problems; Achenbach & Rescorla, 2001), and the same may hold for internalizing and externalizing schema modes. Also, further research is necessary on the dimensions of schema modes. In this dissertation, we could not confirm hypothesized models from both theory and research, and rather we explored a model of internalizing, externalizing, overachieving, and healthy modes. Future research should investigate if this four-factor model can be confirmed in adolescent and adult populations. Furthermore, longitudinal studies or studies with experimental designs, allowing inferences about causality, may contribute to our understanding of the theoretic framework of ST and the relationship with internalizing and externalizing behavior problems.

For clinical practice in residential care, it would be of interest to investigate whether certain staff interventions activate certain schema modes: Which interventions are most successful in triggering, and comforting, the Vulnerable Child mode? Which interventions are most successful in activating and strengthening the Healthy adolescent mode? Which interventions unnecessarily activate maladaptive surrendering, avoidant, or overcompensatory modes, and should be eliminated from treatment? For individual ST, there is a lack of research about the effectiveness of specific ST interventions (e.g., empathic confrontation, multiple chair technique, imagery) in both adults and adolescents with PD traits. Future research should examine the different elements of ST and their

effectiveness on improvements in schema modes or behavior problems. Finally, additional (randomized controlled) clinical trials should be conducted to investigate ST's effectiveness in adolescent samples, as well as to examine the mechanisms through which changes in PD traits and behavior problems are established. For the delivery of ST treatment in residential care, research should examine applications of ST, both during and after residential treatment, within a continuity of care model.

SUMMARY

In this dissertation, the theoretical framework and effectiveness of Schema Therapy (ST) is tested in adolescent samples. ST is an effective treatment for adult patients with personality disorders (PDs), and this dissertation is based on the controversial premise that PDs or PD traits, if appropriate, can and should be diagnosed in adolescents. In **Chapter 1**, the general introduction of this dissertation, scientific support for this premise is discussed. Early diagnosis of PDs or PD traits creates an opportunity for early intervention, for example, using ST. The theoretical framework of ST is presented, discussing the relationships between early maladaptive schemas (EMS), schema coping, and schema modes. Furthermore, attention is paid to the use of ST principles in (secure) residential treatment, where group care workers face the great challenge of keeping a balance between a flexible therapeutic environment and control. The aims of this dissertation are twofold:
(1) testing the validity of constructs and theoretical basis of ST in adolescents, and
(2) addressing the clinical application and effectiveness of ST with adolescent (in)patients displaying severe externalizing behavior problems, including both individual ST and Safe Path, a milieu-based ST approach.

PART I: ST THEORY IN ADOLESCENTS

The construct of EMSs has been tested before in adolescents, but research on schema coping and schema modes in adolescents is scarce. **Chapter 2** tests the validity of these constructs, and the self-report instruments measuring these constructs, in samples of referred (n = 122) and non-referred (n = 577) adolescents. Referred adolescents were patients receiving treatment for severe externalizing behavior problems. Results indicated that the same three schema coping styles (surrender, avoidance, and overcompensation) can be distinguished in adolescents as in adults. We also found the same schema modes as previously found in adults. With respect to the higher-order factors of schema modes, we could not confirm two hypothesized models based on theory and previous research. With some exploratory adaptations, we found a good fit for a higher-order model of internalizing, externalizing, overachieving, and healthy modes. Future research should try to replicate this model. This study provides evidence that schema coping and schema modes are valid constructs in adolescents, and that the Schema Coping Inventory and the 80-item Schema Mode Inventory generally are reliable and valid instruments to assess these constructs in adolescent samples.

In **Chapter 3,** the theoretical framework of ST is tested in adolescents. Previous research in adults has found that schema coping mediates the relationship between specific EMSs and specific schema modes, and we tried to replicate these results in the combined sample of referred and non-referred adolescent from Chapter 2 (N = 699). We also tested a moderating role of schema coping, because from schema theory, it could be hypothesized that the relationships between EMS and schema modes are dependent on the style of schema coping. Furthermore, we tested the combination of such mediating and moderating

roles of schema coping in moderated mediation models. We found significant mediated effects for all hypothesized relationships. Significant moderated effects were found in half of the hypothesized relationships, and moderated mediation appeared significant in all but one of these relationships. Thus, our findings suggest that schema coping styles are the mechanisms through which EMS activate schema modes, and that sometimes these mechanisms are also influenced by the level of that specific schema coping style. For example, the EMS Abandonment (i.e., the belief that one will always be abandoned by significant others) activates the Abandoned Child mode (i.e., a mode in which one feels abandoned and lost) through a surrendering coping style, and this mechanism is stronger if one tends to use higher levels of surrendering coping. Furthermore, we found that the same EMS can also lead to other schema modes through different coping styles. For example, the EMS Abandonment may also activate a Detached Protector mode (i.e., a mode in which one feels disconnected from others and own needs or feelings) through avoidant coping, and the Angry Child mode (i.e., a mode in which one feels and ventilates uncontrolled anger in response to unmet basic needs) through overcompensatory coping. We also tested higher-order models including relationships between EMSs related to disconnection and rejection experiences (i.e., Abandonment, Mistrust, Defectiveness, Social isolation, and Emotional deprivation), schema coping styles, (surrender vs. overcompensation), schema modes (internalizing vs. externalizing), and behavior problems (internalizing vs. externalizing). We found that the same disconnection and rejection EMSs, through different mechanisms of schema coping and schema modes, may lead to both internalizing and externalizing behavior problems. This suggests that externalizing behavior problems are just as much a manifestation of EMSs related to disconnection and rejection experiences as are internalizing behavior problems. Both adolescents with internalizing (e.g., depression, anxiety) and with externalizing (e.g., oppositional behavior, aggression) problems may possibly benefit from interventions targeting EMSs, schema coping, and schema modes.

In **Chapter 4**, an experimental study tested the influence of EMSs on the occurrence of negative affect and aggression in response to perceived injustice. Our final sample consisted of 37 boys with severe behavior problems treated in court-mandated, secure residential youth care. In a random selection of these boys, we induced a feeling of unfairness by interviewing them about a recent, personal experience of perceived injustice (experimental condition). The other boys were interviewed about a recent, neutral experience (control condition). We hypothesized that the experimental manipulation would lead to negative affect (anger and/or vulnerable feelings of abandonment and mistrust), which would subsequently lead to aggression, and that this mechanism would be moderated by (i.e., be dependent on the level of) specific EMSs (i.e., Abandonment, Mistrust, Entitlement, and Insufficient Self-control). EMSs and negative affect were measured through self-report, and for vulnerable feelings of abandonment and mistrust we also used an implicit measure. Aggression was measured by a task based on the Taylor Aggression

Paradigm, distinguishing between unprovoked and provoked (i.e., after hearing sound blasts) aggression. We found that higher levels of the EMS Abandonment increased the effects of perceived injustice on self-reported vulnerable feelings of abandonment and mistrust (no effects were found on implicit vulnerable feelings of mistrust), and that both the EMSs Abandonment and Entitlement increased the effects of perceived injustice on self-reported anger. Furthermore, higher levels of the EMSs Abandonment and Entitlement strengthened the effects of perceived injustice on anger and subsequent unprovoked aggression (no effects were found on provoked aggression). The results suggest that even a vulnerable EMS, such as Abandonment, which is usually associated with internalizing problems, may underlie anger and aggression. These results support the findings in Chapter 3 that interventions targeting EMSs, such as ST, may help ameliorate adolescents' externalizing behavior problems, including aggression.

PART II: EFFECTIVENESS AND CLINICAL APPLICATION OF ST IN ADOLESCENTS WITH EXTERNALIZING BEHAVIOR PROBLEMS

Chapter 5 includes a multiple case study of four patients with PD traits and severe disruptive behaviors receiving ST in court-mandated, secure residential youth care. We developed an ST treatment protocol for this population, which includes at least 40 individual ST sessions, an ST approach by group care workers, and several ST family sessions. The chapter includes both qualitative and quantitative results of the ST treatment. The qualitative results comprise case narratives describing the techniques we used, working on treatment goals for each patient. The quantitative results comprise tests of changes in behavior problems (reported by patient and by mentor group care worker), self-reported EMSs, and self-reported schema modes. The results support the feasibility of delivering ST in a secure residential treatment center: The therapist was able to use the full range of ST techniques (i.e., working in the here and now with schema modes, experiential techniques, and cognitive-behavioral techniques) with all four patients. We trained and coached treatment teams in ST theory and treatment approach, and were partially successful in involving parents in the ST treatment. We found that all four patients improved in their behavior problems, either reported by the patient or by the mentor care worker, and that most patients also showed significant improvements in schema modes and EMSs. This is the first study providing preliminary evidence for the feasibility and effectiveness of ST for adolescents with PD traits and disruptive behaviors.

Encouraged by the results of the multiple case study, we designed a quasi-randomized, controlled trial comparing ST treatment with treatment as usual (TAU) for patients with PD traits and disruptive behaviors in court-mandated, secure residential youth care. The study protocol is described in **Chapter 6**. We aim to include 128 adolescent patients who: (a) are 14 years or older, (b) are expected to stay in secure residential treatment for at least six months, (c) have at least five PD traits, (d) have an IQ above 70

and are not referred to a special treatment unit for mentally disabled patients, and (e) are not suffering from acute psychosis or severe autism. Practical issues prevent us from using randomization, so we use quasi-randomization. An independent committee allocates patients to the TAU or ST conditions based on availability of beds and opening slots in caseloads of ST therapists. TAU comprises a therapeutic environment and additional psychotherapy or training based on cognitive-behavioral theory. ST comprises a therapeutic environment in which ST principles are also integrated, and additional individual ST sessions on a twice-per-week basis. At baseline and every three months during treatment, patient's primary group care worker (mentor) completes a checklist on patient's behavior problems (primary outcome). Patients complete self-report instruments on behavior problems, ST-related constructs, quality of life, and group climate (secondary outcomes) at these time points and additionally at three and 12 months after discharge. We expect patients in ST to show greater improvements in outcomes over time, and to better maintain these gains at follow-up than patients in TAU. We also expect ST to be superior with respect to dropout, no shows for individual therapy sessions, and group climate. This chapter describes the analyses we will use for these data (mixed regression analyses), and discusses the relevance of this study, along with its strengths and limitations.Although we aimed to finish this study within three years, we encountered some setbacks that slowed down the rate of patient inclusion. After three years of running this study, we included 69 patients. With this rate of inclusion, we would have to continue data collection for the next 2,5 years to achieve a sample size of 128 patients.

Chapter 7 includes the preliminary results of Safe Path, a milieu-based ST approach, on incidents of aggression (primary outcome), group climate, staff's severe interventions, and staff's team functioning. Over a period of six months, incidents of aggression and severe interventions (i.e., physical interventions, seclusion, and transfer to a more restrictive unit) were coded from daily reports. At a two-month interval, group climate was rated by patients, and team functioning was rated by group care workers. We hypothesized that Safe Path units would show higher or faster improvements in these outcome measures over time (condition * time interaction) than treatment units providing care as usual (CAU; based on cognitive-behavioral principles). The chapter incorporates the aims and content of the Safe Path intervention, and investigates staff's use of the schema mode language (which is one of the main goals of Safe Path) four months after implementation. We found that the implementation process was far from complete (staff from the Safe Path units used the schema mode language in only 9% - 11% of the daily reports after two to four months), which could account for the absence of significant interaction effects in our study. We conclude that it is premature to draw conclusions on the effects of Safe Path. A complete analysis of outcomes will be conducted one year after implementation. The preliminary report in this chapter includes examples of Safe Path interventions, and discusses issues arising in the Safe Path coaching.

Chapter 8 is a Dutch practical manual addressing the application of ST to adolescents with externalizing behavior problems and PD traits. It distinguishes four phases of treatment: a motivation phase, a diagnostic phase, a phase of change, and a phase of generalization, and it places special emphasis on handling schema modes associated with anger (e.g., Angry Child, Angry Protector, Bully and Attack modes). The chapter offers many illustrations of ST techniques, which could support clinicians using ST with this complex population. The chapter also discusses the involvement of parents in the ST treatment, and how to create a ST-based therapeutic environment in residential youth care.

DISCUSSION AND CONCLUSION

In **Chapter 9**, the results of all studies in this dissertation are briefly summarized and integrated in a general discussion. The findings support the validity of ST theory in adolescents, and suggest (with preliminary evidence) that adolescent patients with externalizing problems may benefit from ST. This chapter includes methodological considerations and future directions for further research.

SAMENVATTING

[Dutch summary]

In dit proefschrift worden het theoretisch model en de effectiviteit van Schematherapie (ST) getoetst in adolescenten. ST is een effectieve behandeling voor volwassen patiënten met persoonlijkheidsstoornissen. Dit proefschrift is gebaseerd op het omstreden uitgangspunt dat het diagnosticeren van (trekken van) persoonlijkheidsstoornissen bij adolescenten toegestaan is en zelfs van groot belang is. In **Hoofdstuk 1**, de algemene inleiding van dit proefschrift, wordt dit uitgangspunt toegelicht op basis van de wetenschappelijke literatuur. Het diagnosticeren van (trekken van) persoonlijkheidsstoornissen maakt vroege interventie mogelijk, bijvoorbeeld met ST. Het theoretisch model van ST wordt uitgelegd, waarbij de relaties tussen vroege, maladaptieve schema's (hierna kortweg schema's genoemd), coping en schema modi worden besproken. Ook wordt er aandacht besteed aan het gebruik van ST principes in de (gesloten) residentiële jeugdzorg, waar groepsleiding moet zien te schipperen tussen een flexibele therapeutische aanpak en controle. Het doel van dit proefschrift is tweeledig:

(1) Het testen van de validiteit van het theoretisch model van ST en de bijbehorende constructen, en

(2) Het onderzoeken en beschrijven van de klinische toepassing en effectiviteit van ST bij jongeren met externaliserende gedragsproblemen en (trekken van) persoonlijkheidsstoornissen. Hierbij wordt aandacht besteed aan individuele ST en aan ST geïntegreerd in het therapeutische klimaat (Safe Path).

DEEL I: ST THEORIE IN ADOLESCENTEN

Er is al veel onderzoek gedaan naar schema's in adolescenten, maar onderzoek naar schema coping en schema modi is schaars. **Hoofdstuk 2** toetst de validiteit van deze twee constructen, en van de zelfrapportage instrumenten die deze constructen meten, in klinische (n = 122) en niet-klinische (n = 577) groepen adolescenten. De klinische groep bestond uit adolescenten die in behandeling waren voor ernstige externaliserende gedragsproblemen. Uit de resultaten blijkt dat dezelfde drie coping stijlen (overgave, vermijding en overcompensatie) kunnen worden onderscheiden in jongeren als in volwassenen. Ook vonden we dezelde schema modi die eerder bij volwassenen zijn gevonden. We hebben twee hogere-orde modellen met domeinen van schema modi getoetst (modellen waren gebaseerd op theorie en eerder onderzoek), maar konden deze niet bevestigen. Na een aantal exploratieve aanpassingen aan het model vonden we een goede fit voor een alternatief, namelijk een model met internaliserende, externaliserende, overpresterende en gezonde modi. Toekomstig onderzoek zal moeten proberen om dit model te repliceren. Dit onderzoek laat zien dat schema coping en schema modi valide constructen zijn in adolescenten, en dat the Schema Coping Vragenlijst en 80-item Schema Modi Vragenlijst over het algemeen betrouwbare en valide instrumenten zijn om deze constructen te meten bij adolescenten.

In **Hoofdstuk 3** wordt het theoretisch model van ST getoetst bij adolescenten. Eerder onderzoek bij volwassenen heeft laten zien dat schema coping de relatie tussen schema's en schemamodi mediëert. Wij probeerden deze bevinding te repliceren in de gecombineerde groep van klinische en niet-klinische jongeren zoals beschreven in Hoofdstuk 2 ($N = 699$). We hebben ook modellen getoetst waarbij schema coping werd meegenomen als moderator in plaats van mediator, omdat je vanuit de ST theorie zou kunnen beredeneren dat de relaties tussen schema's en schemamodi afhankelijk zijn van de coping stijl. Daarnaast hebben we modellen getoetst waarbij schema coping tegelijkertijd als mediator en als moderator fungeerde, de zogeheten "moderated mediation models" (conditionele processen). In alle gehypothetiseerde relaties tussen schema's en schema modi was er sprake van mediatie door coping. Significante moderatie door coping werd gevonden in de helft van de gehypothetiseerde relaties, en met uitzondering van één was er in al die relaties ook sprake van "moderated mediation" (conditionele processen). Onze bevindingen suggereren dus dat schema's bepaalde schema modi activeren door middel van bepaalde copingstijlen en dat, in sommige gevallen, dit mechanisme ook beïnvloed kan worden door de mate van die bepaalde copingstijl. Een voorbeeld: het schema Verlating (de overtuiging dat je altijd in de steek zal worden gelaten door mensen die belangrijk voor je zijn) activeert de Verlaten Kind modus (een modus waarin je je in de steek gelaten en verloren voelt) door middel van overgave als copingstijl, en dit mechanimse is sterker naarmate men meer geneigd is om overgave als copingstijl te hanteren. Bovendien bleek dat eenzelfde schema ook andere schemamodi kan activeren door middel van andere copingstijlen. Het schema Verlating kan bijvoorbeeld ook de Onthechte Beschermer (een modus waarin je je niet verbonden voelt met anderen of met je eigen gevoelens of behoeften) activeren door middel van een vermijdende coping stijl, of het kan de Boze Kind modus (een modus waarin je ongevontrolleerde boosheid/woede voelt en uit in reactie op onvervulde basisbehoeften) activeren door middel van een overcompenserende copingstijl. Vervolgens hebben we hogere-orde modellen getoetst met daarin schema's gerelateerd aan ervaringen van onverbondenheid en afwijzing (Verlating, Wantrouwen, Tekortschieten, Sociaal Isolement en Emotioneel tekort), schema coping (overgave versus overcompensatie), schemamodi (internaliserend versus externaliserend) en gedragsproblemen (internaliserend versus externaliserend). Hieruit bleek dat dezelfde schema's gerelateerd aan onverbondenheid en afwijzing, door middel van verschillende copingstijlen en schemamodi, uiteindelijk tot zowel internaliserende als externaliserende gedragsproblemen kunnen leiden. Dit suggereert dat externaliserende gedragsproblemen net zo goed een uiting kunnen zijn van schema's, gerelateerd aan onverbondenheid en afwijzing, dan internaliserende problemen. Zowel adolescenten met internaliserende gedragsproblemen (bijv. depressie, angst) als met externaliserende gedragsproblemen (bijv. opstandigheid, agressiviteit) kunnen mogelijk profiteren van interventies gericht op het bewerken van schema's, coping en schema modi.

Hoofdstuk 4 bevat een experimenteel onderzoek waarin de invloed van schema's op het optreden van boosheid en agressie wordt getoetst in situaties van ervaren onrecht. Het onderzoek is uitgevoerd onder 37 jongens die voor ernstige, externaliserende gedragsproblemen waren opgenomen voor gedwongen behandeling (opgelegd door de rechtbank) in een gesloten jeugdzorg instelling. Bij een willekeurige groep van deze jongens hebben we een gevoel van onrechtvaardigheid geïnduceerd door ze te interviewen over een recente, persoonlijke ervaring met onrecht (experimentele conditie). De andere jongens werden geïnterviewd over een recente, neutrale ervaring (controle conditie). Onze hypothese was dat het induceren van het gevoel van onrechtvaardigheid zou leiden tot negatief affect (boosheid en/of kwetsbare gevoelens van verlating of wantrouwen), wat vervolgens weer zou leiden tot agressie. Dit mechanisme zou dan gemodereerd worden door (d.w.z. afhankelijk zijn van) bepaalde schema's (Verlating, Wantrouwen, Grandiositeit en Onvoldoende zelfcontrole). Schema's en negatief affect werden gemeten via zelfrapportage, waarnaast voor kwetsbare gevoelens van wantrouwen ook een impliciete maat werd gebruikt. Agressie werd gemeten aan de hand van het "Taylor Agression Paradigm", waarbij onderscheid werd gemaakt tussen ongeprovoceerde en geprovoceerde (na het horen van harde geluiden) agressie. De resultaten laten zien dat een hogere mate van het schema Verlating zorgde voor een groter effect van ervaren onrecht op zelf-gerapporteerde, kwetsbare gevoelens van verlating en wantrouwen (er zijn geen effecten gevonden op de impliciete maat voor gevoelens van wantrouwen). Daarnaast zorgde een hogere mate van zowel de schema's Verlating als Grandiositeit voor een groter effect van ervaren onrecht op boosheid. Bovendien bleek dat deze schema's de effecten van ervaren onrecht op boosheid en opeenvolgende agressie versterkten. Deze resultaten suggereren dat zelfs een kwetsbaar schema zoals Verlating, welke gewoonlijk geassocieerd wordt met internaliserende problemen, ten grondslag kan liggen aan boosheid en agressie. Deze resultaten ondersteunen de bevindingen in Hoofdstuk 3 dat interventies gericht op schema's, zoals ST, kunnen helpen om externaliserende gedragsproblemen, waaronder agressie, te verminderen.

DEEL II: EFFECTIVITEIT EN KLINISCHE TOEPASSING VAN ST BIJ JONGEREN MET EXTERNALISERENDE GEDRAGSPROBLEMEN

Hoofdstuk 5 omvat een multiple case study van vier jongeren met (trekken van) persoonlijkheidsstoornissen en ernstige gedragsproblemen, die behandeld worden met ST in de gesloten jeugdzorg. Voor deze doelgroep hebben we een behandelprotocol ontwikkeld, die bestaat uit tenminste 40 individuele ST sessies, een ST benadering door groepsleiding en een aantal sessies gezinstherapie. Het hoofdstuk bevat zowel kwalitatieve als kwantitatieve resultaten van de ST behandeling. De kwalitatieve bevindingen beslaan beschrijvingen van het therapieproces voor elke jongere, met daarin de gebruikte technieken waarmee aan de therapiedoelen gewerkt werd. De kwantitatieve bevindingen

toetsen of er sprake is van veranderingen in gedragsproblemen (beoordeeld door zowel de jongere zelf als door de mentor groepsleider), zelf-gerapporteerde schema's en zelfgerapporteerde schemamodi. De resultaten laten zien dat het bieden van ST behandeling binnen de gesloten jeugdzorg haalbaar is: De schematherapeut kon alle ST technieken (werken in het hier en nu met schemamodi, experiëntiële technieken en cognitieve-gedragstechnieken) gebruiken bij alle vier de jongeren, we konden behandelteams trainen en coachen in de ST theorie en benadering, en het lukte gedeeltelijk om ouders te betrekken bij de ST behandeling. Daarnaast bleek dat bij alle vier de jongeren verbeteringen optraden in gedragsproblemen (gerapporteerd door de jongere zelf of door de mentor), en dat bij de meeste jongeren ook sprake was van significante verbeteringen in schema modi en schema's. Dit is het eerste onderzoek dat voorlopig bewijs levert voor de haalbaarheid en effectiviteit van ST bij jongeren met (trekken van) persoonlijkheidsstoornissen en ernstig externaliserend gedrag.

Aangemoedigd door de resultaten van de multiple case study hebben we een quasi-gerandomiseerd, gecontroleerd onderzoek opgezet waarin de ST behandeling wordt vergeleken met standaardbehandeling (TAU; "treatment as usual") bij jongeren met (trekken van) persoonlijkheidsstoornissen en ernstige gedragsproblemen in de gesloten jeugdzorg. Het design van dit onderzoek wordt beschreven in **Hoofdstuk 6.** We streven ernaar om 128 jongeren, die voldoen aan volgende criteria, in dit onderzoek te includeren: (a) 14 jaar of ouder, (b) verwachte verblijfduur in gesloten jeugdzorg is minimaal zes maanden, (c) tenminste vijf trekken van persoonlijkheidsstoornissen, (d) IQ boven de 70 en niet verwezen naar een behandelunit speciaal voor jongeren met een lichte verstandelijke beperking, en (d) geen accute psychotische symptomen of ernstig autisme. Omdat er praktische bezwaren kleefden aan randomisatie, hebben we quasi-randomisatie gebruikt. Een onafhankelijke commissie wijst jongeren toe aan ST of TAU behandelunits op basis van beschikbare bedden en beschikbaarheid van ST therapeuten. TAU bestaat uit een therapeutisch milieu en aanvullende therapie of vaardigheidstraining gebaseerd op de cognitieve-gedragstheorie. ST bestaat uit een therapeutisch milieu waarin ook ST principes zijn geïntegreerd en aanvullende, individuele ST sessies met een frequentie van tweemaal per week. Bij aanvang van de behandeling, en elke drie maanden daarna, vult de mentor groepsleider van de jongere een vragenlijst in over de gedragsproblemen van die jongere (primaire uitkomstmaat). Op dezelfde momenten, en bovendien drie en twaalf maanden na ontslag uit de gesloten jeugdzorg, vult de jongere vragenlijsten in over zijn of haar gedragsproblemen, ST-gerelateerde constructen, kwaliteit van leven en groepsklimaat (secundaire uitkomstmaten). Onze hypothese is dat jongeren in de ST conditie grotere verbeteringen laten zien in de uitkomstmaten over de tijd heen, en dat zij deze verbeteringen beter weten vast te houden na ontslag dan jongeren in de TAU conditie. We verwachten ook dat de ST conditie minder dropout en no shows van individuele therapiesessies laat zien, en dat ST behandelunits een beter groepsklimaat hebben dan TAU units. Dit hoofdstuk beschrijft welke analyses we zullen gebruiken voor deze data (mixed

regressie-analyse) en behandelt de relevantie van dit onderzoek, inclusief de sterke aspecten en de beperkingen van het onderzoeksdesign. Hoewel we van plan waren om dit onderzoek binnen drie jaar af te ronden, hebben we wat tegenslagen gehad die de inclusie van jongeren in dit onderzoek hebben vertraagd. Na drie jaar zijn er 69 deelnemers aan dit onderzoek. Met deze snelheid van inclusie zullen we het onderzoek nog 2,5 jaar moeten continueren om de beoogde steekproefgrootte van 128 jongeren te behalen.

Hoofdstuk 7 gaat over de voorlopige resultaten van Safe Path, een ST interventie in het therapeutisch milieu, met betrekking tot aggressieve incidenten (primaire uitkomstmaat), groepsklimaat, forse interventies (zoals jongeren fysiek vastpakken, in de afzondering plaatsen of overplaatsen naar een andere unit) en teamfunctioneren van groepsleiding. Over een periode van zes maanden is de aanwezigheid van agressie en forse interventies gecodeerd op basis van dagrapportages over jongeren op vier behandelunits. Elke twee maanden hebben jongeren een vragenlijst ingevuld over het groepsklimaat, en groepsleiding over het teamfunctioneren. Onze hypothese was dat de Safe Path units grotere of snellere verbeteringen zouden laten zien met betrekking tot deze uitkomsten over de tijd (conditie * tijd interactie) dan behandelunits die standaardzorg (CAU; care as usual) boden. Dit hoofdstuk beschrijft de inhoud en doelen van de Safe Path interventie en onderzoekt het gebruik van modi-taal door groepsleiding (wat één van de doelen is van Safe Path) gedurende de eerste vier maanden na implementatie van Safe Path. Het implementatieproces bleek nog verre van compleet (groepsleiding van de Safe Path units gebruikte de modi-taal slechts in 9%-11% van de dagrapportages na twee tot vier maanden), wat zou kunnen verklaren waarom we geen interactie-effecten vonden gedurende die eerste vier maanden. We concluderen dat het nog te vroeg is om conclusies te trekken over de effecten van Safe Path. Een complete analyse van uitkomstmaten zal één jaar na implementatie worden uitgevoerd. Het voorlopige rapport in dit hoofdstuk bevat voorbeelden van Safe Path interventies en beschrijft kwesties die gedurende de Safe Path coaching naar voren komen.

Hoofdstuk 8 is een Nederlandse, praktische handleiding over het toepassen van ST bij adolescenten met externaliserende gedragsproblemen en (trekken van) persoonlijkheidsstoornissen. Er worden vier fasen van behandeling onderscheiden: een motivatiefase, diagnostische fase, veranderingsfase en generalisatiefase. Daarnaast legt dit hoofdstuk extra nadruk op het omgaan met schemamodi die geassocieerd zijn met boosheid (Boos Kind, Boze Beschermer, Pest- en Aanval modi). Het biedt vele illustraties van ST technieken als ondersteuning voor clinici die ST willen inzetten bij deze complexe doelgroep. Dit hoofdstuk bespreekt ook de rol van ouders in de ST behandeling, en beschrijft hoe ST-principes kunnen worden geïntegreerd in de residentiële jeugdzorg.

DISCUSSIE EN CONCLUSIE

In **Hoofdstuk 9** worden de resultaten van alle onderzoeken in dit proefschrift kort samengevat en geïntegreerd in een algemene discussie. De bevindingen bieden ondersteuning voor de validiteit van de ST theorie in adolescenten, en suggereren (met voorlopig bewijs) dat adolescenten met externaliserende problemen kunnen profiteren van ST. Dit hoofdstuk omvat methodologische overwegingen en aanwijzingen voor toekomstig onderzoek.

ADDENDUM:

Valorization

RELEVANCE

This dissertation focused on bridging theory and practice of Schema Therapy (ST; Young, Klosko, & Weishaar, 2003) with adolescents, specifically those in court-mandated, secure residential treatment. Questions have been raised about the effectiveness and cost-effectiveness of residential treatment, given the paucity of well-designed (randomized) controlled studies on this topic, the typical one-size-fits-all approach, and the high costs involved. Moreover, questions have been raised about the coerciveness of residential care, whether coercive treatment detracts from treatment effectiveness, and ethical issues regarding confining adolescents against their will.

However, review studies and meta-analyses have suggested that residential treatment is a moderately effective and necessary component of a comprehensive care system for adolescents with severe behavior problems and their families (Frensch & Cameron, 2002; Hair, 2005; Knorth, Harder, Zandberg, & Kendrick, 2008). They all show that the effectiveness of residential treatment is increased when patients' families are involved in treatment, and when aftercare services are provided. One meta-analysis, based on 27 controlled studies including 17,038 youths in both secure and non-secure residential treatment, showed greater effects of residential treatment when it incorporated evidence based treatments, such as cognitive behavior therapy but not skills training (de Swart et al., 2012). Regular group care, however, did not seem to be effective and the authors suggested that it might even increase behavior problems. Given the potential disadvantages of (court-mandated) residential treatment, such as high costs and ethical issues of confinement and coercion, residential care must demonstrate evidence of effectiveness in order to be justified. If regular group care is not effective, we should develop and test alternatives that integrate evidence based interventions in residential treatment.

A treatment focusing both on PDs and behavior problems could mitigate a variety of negative outcomes and could make a difference for the lives of patients and their families. Youth living in residential care perceive their quality of life to be low (Jozefiak & Kayed, 2015), and patients with severe externalizing behavior problems and personality disorders (PDs) or PD traits often face a lifetime of difficulties, struggling with social skills, academic functioning, and relationships (Chanen, Jovev, & Jackson, 2007; Levy et al., 1999).

This dissertation is also of economical relevance. Implementing evidence-based treatment in secure residential youth care contributes to a higher quality of care (de Swart et al., 2012). Scientists have estimated that $3.2 to $5.8 million could be saved each time an adolescent with disruptive and criminal behaviors is successfully treated (Cohen & Piquero, 2009). The high societal costs are spent on juvenile justice, damage to persons and property, special education, and mental health care. ST treatment, preferably in a continuity of care model, has the potential to help patients return safely to the community, and may prove to be an effective and cost-effective intervention.

FOR WHOM ARE THE FINDINGS OF THIS DISSERTATION RELEVANT?

First of all, the findings emphasize some important issues for treatment providers, such as the need for PD diagnosis in adolescents when appropriate, for early intervention during this age period, and for the implementation of evidence-based treatments in secure residential youth care. It includes the first studies focusing on the validity of ST's framework in adolescents, and on the feasibility and effectiveness of ST for patients with severe disruptive behaviors and PD traits in secure residential youth care. Our findings, and qualitative descriptions of ST for patients with externalizing behavior problems, may encourage treatment providers to consider implementing ST in their treatment services.

Second, the dissertation is also of interest to policy makers. In the Netherlands, recently a shift has been made towards decentralization of responsibilities and finance of youth mental health care. This places a tremendous responsibility on municipalities, who have to decide to what extent they will continue to financially support secure residential care. The promising findings of this dissertation are consistent with findings from previous research that secure residential treatment is effective, especially when evidence-based interventions are incorporated (Hair, 2005; Knorth et al., 2008; de Swart et al., 2012).

ACTIVITIES / PRODUCTS

The findings of the studies in this dissertation are disseminated through scientific papers published in international and national journals. Also, book chapters are written on the application of ST to adolescent patients with PD traits and externalizing behavior problems, such as Chapter 8 of this dissertation. These papers and book chapters will not only make clinicians and policy makers aware of the results, they may also provide guidance in how to implement and apply ST treatment to this complex patient group. Of course, for a full understanding and use of ST techniques, certified training is necessary. In the Netherlands, several certified training programs in basic and advanced ST are available for clinicians working with adults and adolescents (e.g., www.schematherapieopleidingen.nl). There also is a certified training for ST for PDs, aggression, and addiction (www.akkerdistel.nl/opleiding), which is open to clinicians working both with adults and adolecents, but does not focus on adolescents per se. As a follow-up to the work we have done for this dissertation, I am considering developing a specialized course for clinicians working with adolescents with externalizing behavior problems and PD traits. I am also considering the development of video material illustrating ST with externalizing adolescents to use as a supporting material for such a training course. Once this course is developed, it could also be distributed internationally (for example through the International Society of Schema Therapy; ISST). To our knowledge, such a specialized course is also lacking in other countries.

Furthermore, the findings of this dissertation are spread when providing Safe Path (Bernstein, Kersten, van den Broek, & Gelissen, 2014) training and supervision in youth

care settings. Safe Path has been implemented in secure residential youth care, including wards for high risk forensic youth, and child protective services supporting youth returning to the community after discharge from secure residential care (Bernstein, van Oorsouw, Candel, Clercx, & Alberts, 2017).

Based on the findings of this dissertation, we are developing an outpatient form of ST for externalizing adolescents so that continuity of care can be ensured after discharge from (secure) residential youth care. We aim to use a consistent ST approach throughout various stages of treatment, making use of patients' networks, to support their transfer back into the community. In fact, such an outpatient form of ST may also prove effective in the prevention of the need for (secure) residential treatment when it is applied as an early intervention for adolescent patients with PD traits and mild to severe externalizing behaviors.

Another way of disseminating the findings of this dissertation is through a symposium, to which we will invite treatment providers of both secure and open residential treatment, court staff (e.g., judges, lawyers), youth protective services, municipal officials, youth clinicians, and group care workers. Presentations about ST may also be offered to patients and their families.

INNOVATION

These products and activities are innovative, because there are few products and activities that focus on ST with adolescents. Moreover, the focus on ST with an externalizing group of adolescent patients is completely new. Although still controversial, we stress the importance of diagnosing PDs or PD traits in adolescents, especially in secure residential youth care where PD traits are highly prevalent (**Chapter 2**). Only if clinicians recognize that patients' problematic behavior is part of complex and persisting PD patterns can we provide adequate treatments to them.

Thus far, one treatment manual on ST with adolescents has been published. This treatment manual (Roelofs et al., 2013) describes the application of individual and group ST with adolescents with PD traits. Chapter 8 of this dissertation extends the use of ST to a complex and often resistant subgroup of adolescents with externalizing behaviors, and a treatment protocol is included in Chapter 5. These products may be combined to write a full treatment manual for ST with these adolescents. Our aim for adopting a continuity of care model, using the ST approach throughout various stages of treatment, is also very innovative in secure residential youth care.

Finally, although demand of certified ST training for clinicians working with adolescents is increasing, no ST training specifically for clinicians working with externalizing adolescents has been developed. With this dissertation and our clinical experience, we have acquired sufficient knowledge to fill this gap. Video illustrations will

support the learning of ST techniques with adolescents, as currently only video materials of ST with adults are available.

REALIZATION & TIME PLAN

The Ottho Gerhard Heldringstichting, where most of the research in this dissertation was conducted, is part of a holding company (Conrisq Group). The Conrisq Group includes several treatment centers for youth and adults with externalizing behaviors, facilitating the spreading of knowledge and methods of ST to bring them to a larger group of users.

With regard to the time plan, the chapters of this dissertation are either published, submitted to international peer-reviewed journals, or in preparation to be submitted. Then, our first priority is to develop and realize an outpatient form of ST for patients with externalizing behaviors. This should be effectuated in 2018. The O.G. Heldringstichting / Conrisq Group will financially support this project, although external funding may be searched to facilitate research on its effectiveness.

Safe Path trainings and supervision are currently being supplied, and may also be provided to other (secure) residential treatment centers on demand. The ST symposium for treatment providers, court staff, youth protective services, municipal officials, youth clinicians, and group care workers will be held in the spring of 2018. This symposium will be facilitated by the O.G. Heldringstichting / Conrisq Group.

Ideas concerning the development of a ST course and supporting video materials for clinicians working with externalizing adolescents will be further explored in 2018.

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DANKWOORD

[acknowledgements]

Vier jaar en vier maanden. Een periode waarin ik mijn onderzoeksvoorstel schreef, waarin ons gezin werd aangevuld met onze lieve Lana, waarin veel leuke maar ook heel nare dingen gebeurden, en waarin ik mijn proefschrift afrondde. Een periode waarin veel mensen met me meeleefden, meelachten, meehuilden, en ervoor zorgden dat ik niet compleet overspannen raakte ☺. Een aantal van jullie wil ik in het bijzonder bedanken.

Maar allereerst mijn grote dank aan alle mensen, zowel jongeren als groepsleiding, die hebben deelgenomen aan de studies in dit proefschrift. Zonder jullie was dit proefschrift er niet gekomen. Er werd af en toe diep gezucht als ik weer eens met vragenlijsten op de groep kwam, maar toch was jullie inzet groot. Dank jullie wel, jongeren, ik hoop dat het goed met jullie gaat! En dank jullie wel, groepsleiding, voor het invullen van de vragenlijsten tijdens jullie toch al zo drukke werkzaamheden. Dat waardeer ik enorm!

En dan het promotieteam: David, Arnoud, Jeffrey en Nick. Ik had de luxe om van wel vier (co-)promotoren te mogen leren. Jullie hebben allemaal op jullie eigen wijze een enorme bijdrage aan dit proefschrift en mijn professionele ontwikkeling geleverd.

David, first of all you have taught me the skills to be a schema therapist. Thank you for the numerous supervision sessions; It still amazes me how you seem to 'grasp' the patients' pain, without ever meeting them, after I've said just a few sentences about them. Your advice often has helped me to get past all kinds of coping modes and to really connect with the patient. Second, you have given me the opportunity to write my own research proposal and conduct the studies in this dissertation. What a journey! Thank you for your critical eye, which helped me improve my scientific writing skills. I am also grateful for your reassurance whenever I was stressing out over the amount of work or obstacles we encountered. You'd put things into perspective, and would usually finish off with the phrase: "Never a dull moment at the OGH!". I hope that we will continue working together; We have ideas enough about the future of Schema Therapy in youth care to keep us busy for the next couple of years!

Arnoud, wat bewonder ik jouw enorme diversiteit aan kennis en vaardigheden. Bovenal ben ik je dankbaar voor je beschikbaarheid; na het sturen van een mailtje hoefde ik niet veel langer dan een paar uur op jouw reactie te wachten. En als het dan een keer toch een dag duurde, verontschuldigde je je voor de relatief late reactie! Ook je feedback op manuscripten was altijd snel en zorgvuldig, jouw opmerkingen zetten altijd aan tot nadenken en verdere verbeteringen van een manuscript. Dankjewel, ook voor de tijd die je hebt genomen om mee te denken en me te adviseren over mijn verdere loopbaan.

Jeffrey, vooral in de eerste jaren hebben we veel samen overlegd. Wat was het fijn voor mij om, als 'bleue' onderzoeker in de academische wereld, met al mijn praktische vragen bij jou terecht te kunnen. We hebben samen ook veel gebrainstormd over de opzet van de studies, en jouw hulp bij de aanvragen voor de ethische commissie was zeer

welkom. Daarna stond je wat meer aan de zijlijn, maar ook daar bleef je betrokken en heb ik je support gewaardeerd. Dankjewel!

En 'last, but not least': Nick. Als ik je weer eens belde voor statistisch advies, nam je meestal op met: "Ha, Marjolein!". Of ik mijn belletje nu wel of niet had aangekondigd, je zag aan een afwijkende vermelding op het display van je vaste telefoon al dat ik het was. Ik denk dat de telefoontjes nog geen verleden tijd zijn, want ik waardeer je adviezen enorm. Je bent altijd bereid om statistische vraagstukken uit te pluizen, en je laat me weten wanneer je verwacht daar een terugkoppeling over te kunnen geven. Dankjewel voor je heldere uitleg met betrekking tot die statistische vraagstukken en voor je adviezen over onderzoeksdesigns!

Conrisq Groep en O.G. Heldringstichting, bedankt dat jullie mij in staat stelden om de studies in dit proefschrift uit te voeren. Sanne, elk jaar was het weer spannend of het financiëel haalbaar was om het onderzoeksproject voort te zetten. Dankjewel dat je elke keer opnieuw de financiële middelen hebt weten vrij te maken en dat het aantal onderzoeks-uren over de jaren heen heeft mogen groeien. En wat geweldig dat we nu de Schematherapie verder kunnen gaan verspreiden binnen de Conrisq Groep. Bedankt voor je vertrouwen!

Jean-Paul, jou ben ik dankbaar voor je steun en inzet om de Schematherapie op de OGH tot iets moois te maken. Waar mogelijk faciliteer je de ideeën om de Schematherapie steeds beter te implementeren en wetenschappelijk onderzoek ernaar uit te voeren. Ik wil je bedanken voor je support met betrekking tot mijn professionele ontwikkeling, maar ook voor je flexibele opstelling en belangstelling in een voor mij persoonlijk moeilijke tijd.

Bijzonder Jeugdwerk Brabant en Elzendaalcollege Boxmeer, dankjewel dat jullie je medewerking hebben verleend aan het vragenlijstonderzoek waar enkele hoofstukken in dit proefschrift op gebaseerd zijn.

Beste collega's, dank jullie wel voor je interesse en je steun gedurende dit project. Marieke, Chantal, Kristel en Marrit, bedankt voor het screenen van de jongeren voor de controlled trial. Het is niet makkelijk om je eigen professionele oordeel opzij te moeten zetten en een jongere op basis van 'toevalsfactoren' aan Schematherapie of standaardbehandeling te laten toewijzen. En dan duurt het ook nog eens allemaal langer dan verwacht! Bedankt voor jullie begrip en toewijding. Manita, dankjewel voor je inzet om rekening te houden met de controlled trial bij het plaatsen van jongeren. Ik weet dat dit de toch al ingewikkelde puzzel nog ingewikkelder maakt. Marije, bedankt voor je tips en voor de gezellige momentjes op kantoor van de Rooyse Wissel. Tessa, Sharon, Anke en Latifa: bedankt voor jullie hulp bij de dataverzameling, jullie hebben mij veel werk uit handen genomen. Team Hoefijzer en Team Klomp, wat zijn jullie keien! Jullie hebben je het Schematherapeutisch denken en werken zo eigen gemaakt de afgelopen jaren, ik ben

supertrots op jullie. Net als alle andere behandelteams van de OGH zetten jullie je elke dag weer met hart en ziel in voor de jongeren, chapeau! Elke en Elianne, wat was het fijn om met jullie de Schematherapie op Hoefijzer en Klomp te mogen vormgeven. Ik vind het zo jammer dat jullie op korte termijn allebei weg zijn van de OGH, ik ga jullie missen! Nienke, volgens mij gaan wij een vliegende doorstart maken, de Schematherapie past jou helemaal! Lieve Titina, voor jou een speciaal woord van dank. Ik waardeer jou enorm als naaste collega en sparringpartner. We kunnen samen flink wat afbomen, en dan niet alleen over werkgerelateerde zaken, maar ook over tal van andere dingen, zoals wat die kleine boefjes van ons nu weer uitgespookt hebben. Je kent mijn zwakke plekken, je hebt me gesteund in moeilijke tijden, en we hebben gelukkig ook heel veel gelachen. Ik hoop dat we nog lang blijven samenwerken!

Lieve vrienden en vriendinnen, misschien heb ik jullie een ietsjepietsje verwaarloosd de afgelopen jaren (en met name de laatste maanden vóór de deadline van dit proefschrift). Gelukkig was er af en toe tijd voor gezellige etentjes, wijntjes en heerlijk kletsen. Bedankt voor de relativerende gesprekken, jullie steun en de gezelligheid. En nu tijd voor een feestje!!

Lieve familie Herbrink, bedankt voor jullie interesse en warmte. Wat ben ik gezegend met een plekje in deze familie. Hans en Francien, bedankt voor jullie betrokkenheid de afgelopen jaren, dat heeft mij veel goed gedaan. Een speciaal woord van dank voor Hans, die de afbeelding op de kaft van dit proefschrift heeft getekend. Ik bewonder je gave om op basis van mijn omschrijving van de Schematherapie zo'n treffende illustratie te maken. Lieve schoonfamilie, ook jullie bedankt voor je interesse en steun. Hettie, ik had geen betere schoonmama kunnen treffen!

En zo kom ik steeds dichter bij de belangrijkste personen in mijn leven. Heleen, dankjewel voor al het werk dat je me uit handen hebt genomen, maar bovenal bedankt voor het feit dat je gewoon mijn lieve, grappige, gekke zus bent. We kunnen samen lachen en huilen, en we delen een bijzondere humor (die niet altijd door iedereen begrepen wordt, maar wij komen niet meer bij!).

Papa en mama, dankzij jullie ben ik wie ik ben. Jullie hebben me de ruimte gegeven om mijn eigen fouten te maken in het leven, waarbij ik er op kon vertrouwen dat ik altijd op jullie terug kon vallen. Lieve papa, ik denk dat ik een beetje van jouw vasthoudendheid en arbeidsethos heb ☺, wat heeft bijgedragen aan de totstandkoming van dit proefschrift. Ik ben blij dat je weer gezond bent, wat ben ik bang geweest om ook jou kwijt te raken. Dankjewel voor je steun en liefde. Lieve mama, ik heb zoveel aan jou te danken dat het niet in woorden valt uit te drukken. Je was er altijd voor me. En wat had je hier graag bij willen zijn, je hebt het jezelf zelfs als doel gesteld na die vreselijke prognose. Het mocht niet zo

zijn. Daarom draag ik dit proefschrift aan jou op. Dankjewel lieve mama, voor alles. Ik mis je zo.

En tot slot mijn eigen, geweldige gezinnetje: mijn lieve Djimmie, Noa en Lana. Lieve Djimmie, wat is het leven heerlijk met jou aan mijn zij. Ik kan alles met je delen, je weet bijna overal antwoord op (zelfs de meest onzinnige feitjes reproduceer jij moeiteloos) en je staat altijd achter me. Je bent een fantastische man en een fantastische papa, ik ben trots dat wij bij elkaar horen. Dankjewel voor je liefde, begrip en onvoorwaardelijke steun. Lieve Noa en Lana, ik kan niet in woorden uitdrukken wat jullie voor mij betekenen. Ik ben zo trots op jullie! De zorg voor, en het samenzijn met jullie heeft in de afgelopen jaren ook een hoop werk-stress gerelativeerd: uiteindelijk draait alles om jullie en om ons gezin. Ik hou van jullie!

CURRICULUM VITAE

ABOUT THE AUTHOR

Marjolein van Wijk-Herbrink was born in IJsselstein, the Netherlands, on May 25th, 1983. She has spent most of her youth in Haaren, a small village near 's-Hertogenbosch. In 2001, she graduated from secondary school, Durendael, in Oisterwijk. She started studying Psychology at the Radboud University Nijmegen, and spent a year of clinical internship and thesis research in a forensic psychiatric hospital in Stafford (South Staffordshire NHS Trust Mental Health Care), England. She obtained her master's degree in 2005, and started working as a junior researcher and psychologist (research and clinical hours [1:1]) at De Viersprong in Halsteren. In 2007, she changed jobs and started working as a psychologist at Bureau Jeugdzorg Gelderland, department "jeugdreclassering" (youth probation office). At the same time, she worked as a psychologist for Stichting Ambulatorium of the Ottho Gerhard Heldringstichting. In 2009, she started two years of full time clinical training at the O.G. Heldringstichting to become a health care psychologist ("Gezondheidszorgpsycholoog") in 2011. In that same year, her son Noa was born, and Marjolein was trained in Schema Therapy (ST) by Truus Kersten and David Bernstein. She contributed to the implementation of ST at two wards of the O.G. Heldringstichting, and was granted permission by the Conrisq Group and David Bernstein (Maastricht University) to write a PhD proposal in 2013. This proposal was accepted by the Dutch-Flemish post-graduate school of Experimental Psychopathology (EPP). After her daughter, Lana, was born, she started conducting the studies from the research proposal. After finishing her PhD project, she continued to work at the O.G. Heldringstichting as a therapist (ST, EMDR, cognitive-behavioral therapy), ST trainer and coach for treatment teams, and as a researcher.

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PRESENTATIONS / WORKSHOPS

Van Wijk-Herbrink, M. F., & Chabot, T. (2017). Schematherapeutisch werken met (moeilijke) jongeren, hun ouders en behandelteams. Workshop at the conference of the Dutch society of Schema Therapy, Amsterdam, the Netherlands.

Van Wijk-Herbrink, M. F. (2017). Schematherapie bij jongeren met gedragsproblemen [schema therapy with adolescents with behavior problems]. Oral presentation at the annual conference of "Jeugd in Onderzoek" [youth in research], 's-Hertogenbosch, the Netherlands.

Van Wijk-Herbrink, M. F. (2016). Schema Therapy for adolescents with disruptive behavior disorders. Oral presentation at the conference of the International Society of Schema Therapy (ISST), Vienna, Austria.

Van Wijk-Herbrink, M. F. (2015). Effectiviteit van Schema Therapie bij adolescenten met ernstige gedragsstoornissen en persoonlijkheidsproblematiek: een pilotstudie gevolgd door een controlled trial [Effectiveness of Schema Therapy for adolescents with severe behavior disorders and personality pathology: a pilot study followed by a controlled trial]. Oral presentation at the conference of the Dutch society of Schema Therapy, Amsterdam, the Netherlands.

Van Wijk-Herbrink, M. F. (2015). Schematheorie en gedragsproblemen bij adolescenten [Schema theory and behavior problems in adolescents]. Oral presentation at the conference of the Dutch society of Schema Therapy, Amsterdam, the Netherlands.

TRAINING / COACHING ACTIVITIES

Safe Path training and coaching at the O.G. Heldringstichting	2017-present
ST training and coaching at the O.G. Heldringstichting	2011-2017
ST training at Juzt, Breda	2013-2014

CLINICAL COURSES TAKEN

Eye Movement and Desensitization Reprocessing (EMDR)	
4 days, Nederlands EMDR instituut	2017
Schematherapie bij persoonlijkheidsstoornissen, agressie en verslaving [Schema Therapy for personality disorders, aggression and addiction]	
50 uur, Expertisecentrum Forensische Psychiatrie	2011
Opleiding tot Gezondheidszorgpsycholoog BIG [registered health care psychologist]	2009-2011