The relationship of recalled adverse parenting styles with schema modes throughout inpatient schema therapy: A clinical sample of patients with complex personality disorders.

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Abstract

Background - Personality disorders are complex mental health problems associated with chronic dysfunction in multiple life domains, reduced quality of life, high societal costs, and a 3-15% prevalence rate in the general population. Young hypothesised that the strongest underlying patterns in dysfunctional interpersonal communication, which is associated with personality disorders, arise from the upbringing by the parental family. However, previous research has not explored the influence of adverse parenting styles in context of treatment change. This study includes treatment through schema therapy and the schema mode model, which offer the potential to treat these complex disorders. **Aims** - This study is a first exploration for correlation between adverse parenting styles and changes in schema modes during inpatient treatment. With the present study focusing on patients with complex personality disorders throughout 12-month inpatient schema therapy. **Method** – In total 204 patients completed the Young Parenting Inventory for establishing content validity and reliability. Alongside, 76 patients completed the Schema Mode Inventory at pre-treatment and after the duration of 12-month inpatient schema therapy at post-treatment. **Results** - Exploratory factor analysis of the Young Parenting Inventory resulted in a five-factor model for both paternal and maternal parenting styles, with Cronbach's alpha reliability values ranging from acceptable to excellent. With exception from the Bully and Attack mode and the Self-Aggrandizer mode, moderate to large effect sizes present changes of modes during inpatient treatment. No significant correlations were found between adverse maternal parenting styles and the schema modes. The Belittling father, Perfectionistic and controlling father, and the Permissive father outcomes at pre-treatment significantly correlate with reduction of the dysfunctional child-, coping-, and parent modes together with the increase of functional modes during treatment. **Conclusions** - Findings implicate that the reduction of dysfunctional schema modes, and increase of functional schema modes during treatment is related to three adverse paternal styles measured at pre-treatment. The current study is the first to provide validation of the Permissive Father. Hence, a theoretical concept for attachment between therapist and patient is presented, focussing on a restorative therapeutic relationship through fulfilment of emotional core needs. Future research into the underlying working mechanisms for schema therapy is implied, with addition of adverse parenting styles of patients with (complex) personality disorders, and the creation of a questionnaire for therapists to establish a best-fit practice between therapist and patient.

Contents

Introduction

During the last two decades, research on personality disorder development has received increased attention (Johnson & Vanwoerden, 2021). This created a stimulation of the re-conceptualization of theoretical models, in-depth research of aetiology, application of new advanced methods, and the development of effective treatments. Personality disorders are complex mental health problems associated with chronic dysfunction in multiple life domains, reduced quality of life next to high societal costs (Wilberg, Karterud, Pedersen & Urnes, 2009; Feenstra, Hutsebaut, Laurenssen, Verheul, Busschbach & Soeteman, 2012). In addition, there is a high prevalence rate of personality disorders in the general population (between 3-15%; Huang et al., 2009). Schema therapy developed by Young and colleagues (2003) offers the potential to treat these complex disorders, as it has demonstrated validation through a large range of international randomized control trials (Bamelis, Evers, Spinhoven & Arntz, 2014; Sempértegui, Karreman, Arntz & Bekker, 2013; Masley, Gillanders, Simpson & Taylor, 2011).

Research states an interconnection between childhood adversity and current psychopathology including personality disorders (Lumley, Harkness & Lumley, 2007; Roelofs, Lee, Ruijten & Lobbestael, 2011). However, previous studies have scarcely explored the influence of adverse parenting styles neither in context of schema therapy nor in context of the schema mode model, which are used extensively in the treatment of psychopathology and personality disorders. To gain more knowledge on the effects of parenting styles on personality disorders is not only of interest for the general understanding of psychotherapy. It is also important for future treatment focus, and in specific for the therapeutic approach of each patient.

Emotional core needs

As a continuation on the conceptualization of the attachment theory (Bowlby, 1969), the schema therapy (ST) model has also elaborated the importance of early childhood experiences. The ST model states that in order to ensure psychological health and the ability to adjust later in life, there are five core emotional needs that must be met during childhood (Young, Klosko & Weishaar, 2003). These core emotional needs emphasize a universal concept, indicating the expectancy that all individuals are born with basic emotional needs, some with stronger needs than others. Young and colleagues (2003) described the emotional core needs as following: (1) Secure attachment to others; (2) Autonomy together with

competence and sense of identity; (3) The freedom to express needs and emotions; (4) Spontaneity and play; (5) Realistic limitations next to self-control. An individual whose needs have been met during childhood is expected to develop into a healthy functioning adult in relation to self and others, with the ability to fulfil one's own adult alternation of core needs. Interaction between the early environment experiences and the child's innate temperament can lead to frustration of the core emotional needs. Young and colleagues (2003) consider experiences associated with parental figures to be the most important determining factor for frustration of needs during early childhood.

Early Maladaptive Schemas (EMS)

In case children's emotional core needs are not met during development, early maladaptive schemas (EMS) can arise (Arntz & Jacob, 2013). EMS are defined as "broad pervasive themes regarding oneself and one's relationship with others, developed during childhood and elaborated throughout one's lifetime, that are dysfunctional to a significant degree" (Bach, Lockwood & Young, 2018; p. 332). These schemas are complicated cognitive and emotional patterns that can differ in pervasiveness and severity (Young et al., 2003). Meaning that higher pervasiveness represents a wider range of conditions for triggering the schema. Likewise, higher severity represents greater intensity of the negative emotions, memories, and/or bodily sensations. Young (1990) presumed each maladaptive schema to derive from a particular parenting style through which the child's emotional needs were not met. For example parents that were unpredictable or would abandon the children results in frustration of the core need to securely attach to others, and eventually could lead to children becoming overly sensitive to abandonment.

Young (1990, 1999a) hypothesized EMS to be the core of personality disorders, many chronic Axis-I disorders, and less serious characterological problems. In recent years ST is validated as an effective treatment for a variety of disorders including personality disorders (Arntz & Jacob, 2013; Taylor, Bee & Haddock, 2017). However, underlying mechanisms for change remain unclear. In the initial ST model eighteen schemas were established and divided under five schema domains, corresponding to the five emotional core needs (Young et al., 2003). Bach, Lockwood and Young (2018) re-examined the organization of the eighteen EMS and, instead of the five domains, four higher-order schema domains were found to be most appropriate in terms of interpretability and empirical indices (Figure 1). This four-factor model is also in line with previous studies (Kriston, Schäfer, von Wolff, Härter & Hölzel, 2012; Lockwood & Perris, 2012).

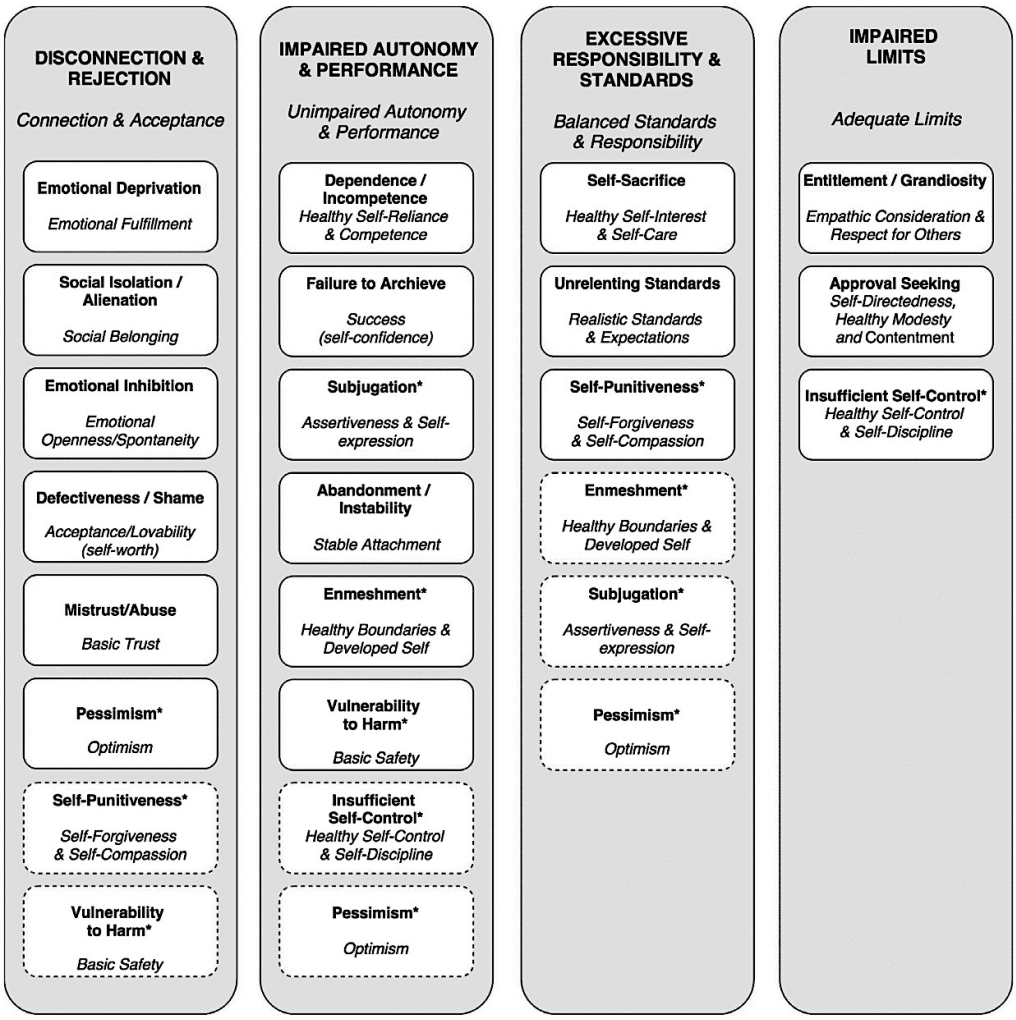

Figure 1. New Proposed Organization of Early Maladaptive Schemas in Four Domains. Reprinted from "A new look at the schema therapy model: organization and role of early maladaptive schemas" by B. Bach, G. Lockwood, and J. E. Young, 2018, Cognitive behavior therapy, *47*, p. 337.

Limited reparenting

The goal of schema therapy is to diminish the schemas by treating the chronic characteristic aspects of long-lasting emotional disorders, by helping patients find adequate ways to meet their emotional needs (Young et al., 2003). Within schema therapy the therapeutic relationship is an important component in the change process (Spinhoven, Giesen-Bloo, van Dyck, Kooiman & Arntz, 2007). The therapeutic relationship is shaped by the principles of limited reparenting, which is considered to be the heart of schema therapy. Limited reparenting is aimed at complementing the underlying basic emotional needs of the patient, for as much as possible within the therapeutic limits. The therapist models functional behaviours and feelings including empathy, protection, and care (Arntz & Jacob, 2012).

EMS's originated from the childhood family are the first to arise throughout development, and therefore have the strongest effect. During ST the patient will pass through a corrective interpersonal relationship, serving as an antidote to traumatic past experiences. Corrective, in this sense, could also stand for setting boundaries or encouraging the patient to become more autonomous (Fassbinder, Schweiger, Jacob & Arntz, 2014). Patients with a schema in the domain Disconnection and rejection have the greatest interest in the therapist becoming a secure base (Young et al., 2003). These patients often endured a traumatic childhood, referring to an unstable parental family that led to the subjective experience of instability in relationships with significant others. Secure attachment can be established through limited reparenting by the therapist (Lockwood & Perris, 2012).

Schema mode model

Complex personality disorders are referred to in case patients experience a high level of suffering together with comorbid disorders, problems in several important areas of life, and in case patients have not benefited sufficiently or have not benefited at all from previous treatment (Wolterink & Westerhof, 2018). For this target group the schema mode model is developed (Young et al., 2003). The schema mode model is the latest development in treatment of personality disorders through schema therapy, and has been referred to as the essence of schema therapy (Fassbinder et al., 2014). Fassbinder and colleagues (2014; p. 81) define a mode as "a combination of activated schemas and coping mechanisms that describes the current emotional-cognitive-behavioural state". In contrast to schemas that are often not clearly visible, these schema modes are visible instantaneous states (Thunnissen & Muste, 2002).

Fourteen schema modes are organized into four categories, and displayed in Table 1 (Mertens, Yilmax & Lobbesteal, 2020, p. 2). Child modes develop when particular attachment needs were not met during childhood. During therapy it is of importance to find out what specific needs were unmet during childhood, and for patients to become aware of their needs in the present. In therapy the needs of different child modes are met by support and comfort of the therapists and group members, including the patient's own healthy adult mode. The dysfunctional parent modes consist of the negative beliefs about the self, comprising self-hatred or high standards. Patients obtained these negative beliefs based on behaviour and responses of significant others during childhood. The goal throughout therapy is to reduce the influence of these dysfunctional parent modes, for example by counteracting the voices through imagery exercises. Coping modes are acquired for self-protection during childhood,

Table 1
Schema Modes Overview

Schema Modes	Description
Child Modes	
Vulnerable Child	Feelings of helplessness and hopelessness, fear of abandonment
Angry Child	Use anger as the first tool to deal with perceived unmet needs or emotional threat
Enraged Child	Intense feelings of anger, being out of control
Impulsive Child	Low frustration tolerance and inability to delay gratification
Undisciplined Child	Acting out in a selfish and spoiled manner, often in combination with anger and rage
Coping Modes	
Compliant Surrender	Submissive, self-deprecating feelings and acts, passive permission for others to mistreat him/her in order to cope with frustration
Detached Protector	Psychologically withdrawn, feelings of emptiness and emotional numbing in order to cope with the pain resulting from experienced vulnerability
Detached Self-Soother	Compulsive engagement in activities in which s/he feels soothed or distracted from the painful emotions
Self-Aggrandizer	Competitive, grandiose, and abusive behaviours to obtain own needs/desires, low levels of empathy, cravings for admiration by others
Bully and Attack	Manipulative and sadistic behaviours to overcompensate potential mistreatment, strategically harmful acts towards others
Parent Modes	
Demanding Parent	Internalized, parents who continually push to meet unrealistic standards, to become 'perfect' at the expense of being spontaneous and expressing feelings
Punitive Parent	Internalized parents who are criticizing, punishing, and unforgiving, which in turn leads to self-criticism and self-destructive behaviours
Healthy Modes	
Happy Child	Experiences of sufficient love, feelings of connectedness, and satisfaction with life
Healthy Adult	Ability to maintain appropriate adult functioning, problem-solving, taking responsibility for own actions, making commitments, and pursuing healthy relationships

Note. SMI = Schema Mode Inventory. Reprinted from "Schema modes mediate the effect of emotional abuse in childhood on the differential expression of personality disorders," by Y. Mertens, M. Yilmaz, J. Lobbestael, 2020, *Child Abuse & Neglect, 104*, p. 2.

and can be described as survival strategies. Coping modes can only be reduced in case the patient feels safe enough in the therapeutic relationship, thereby making limited reparenting an important intervention for dealing with the coping modes (Fassbinder, Schweiger, Martius,

Brand-de Wilde & Arntz, 2016). Relevance of these dysfunctional coping modes in the present is questioned, and is replaced by healthier coping strategies. The overall aim of treatment is to strengthen the healthy adult and happy child mode. The happy child mode associates with joy, playfulness, and spontaneity. The healthy adult mode consists of adequate regulation of emotions, adequate problem solving, and building on healthy relationships. Throughout schema therapy the patient learns to moderate, nurture, or heal the dysfunctional modes, and thereby the healthy modes will grow and increase.

Young Parent Inventory (YPI)

The Young Parenting Inventory (YPI) is an important instrument for identifying the origin of schemas in childhood (Young et al., 2003). The YPI is developed by Young (1994), and is based upon his own clinical experience. In line with the early maladaptive schemas, Young proposed seventeen parenting styles (Table 2). Differentiating between seventeen parenting styles is in contrast with the central view of developmental research that includes only four parenting styles (Shute, Maud & McLachlan, 2019; Baumrind, 1991).

Little research has been performed on the psychometric qualities of the YPI. Sheffield and colleagues (2005) are the only ones that established preliminary validation of the questionnaire. Instead of the seventeen expected parenting styles, Sheffield and colleagues found good test-retest reliability and adequate internal consistency for merely nine parenting styles (YPI-R). An important limitation of the preliminary validation includes the extraction of the YPI items being solely based on eigenvalues >1.0 instead of using Parallel Analysis (PA) (Louis, Wood & Lockwood, 2018). The limitations of the YPI-R result in a high risk of the factor structure not being able to replicate, alongside with the evidence of its reliability and validity. Keeping these limitations in mind, Louis and colleagues demonstrated divergent, convergent, incremental validity and construct validity of the YPI-R2, based on both an Eastern and Western sample (2018). The YPI-R2 consists of six subscales and 36 items of which only 15 items of the YPI (total of 72 items) are used. Although good psychometric validation of the YPI-R2 is presented, an important limitation for this instrument is it to be solely based on non-clinical samples.

Slenders (2014) is the only one that performed validation of the YPI based on a combination of clinical and non-clinical samples. Nevertheless, the seven-factor structure that is presented by Slenders consists of the same limitations as the preliminary validation of Sheffield and colleagues (2005). It is relevant to investigate the factor structure of the YPI

further given the complexity of the questionnaire's structure, and the present study being the first to explore the YPI with a (only-) clinical sample.

Table 2

The seventeen parenting styles of the Young Parenting Inventory, in line with the corresponding unsatisfied emotional core needs

Unsatisfied emotional core needs	Parenting style
Domain I	
Disconnection and rejection	Abandonment and instability
	Mistrust and abuse
	Emotional deprivation
	Defectiveness and shame
	Social isolation and alienation
Domain II	
Impaired autonomy and performance	Dependence and incompetence
	Vulnerability to harm or illness
	Enmeshment and undeveloped self
	Failure to achieve
Domain III	
Excessive responsibility and standards	Entitlement and grandiosity
	Insufficient self-control and self-discipline
Domain IV	
Other directedness	Subjugation
	Self-sacrifice
	Approval-seeking and recognition-seeking
Domain V	
Over-vigilance and inhibition	Negativity and pessimism
	Emotional inhibition
	Unrelenting standards and hyper criticalness
	Punitiveness

Note. Adapted from *Schemagerichte therapie: Handboek voor therapeuten* (p. 15-18), by J. E. Young, J. S. Klosko, M. E. Weishaar, 2003, New York: Guilford.

Existing research on adverse parenting styles, EMS, and schema modes

Previous research of Schaap, Chakhssi and Westerhof (2016) examined changes of the YPI between pre- and post-treatment of inpatient schema therapy, and after six months of treatment at follow-up. No significant difference was found between the total mean score of the YPI mother-version and father-version, resulting in the usage of a total averaged score of the mother- and father-version. Outcomes present a small effect size (d=.14) of the YPI

between pre-treatment and follow up. Patients reported significantly more negative experiences of adverse parenting styles at post-treatment. Schaap and colleagues explain this outcome by patients gaining a more realistic view of the relationship with their parents due to experiential techniques.

In the master thesis of Kosters (2015) the relationship between adverse parenting styles (YPI) with schemas (Young Schema Questionnaire) was examined. Strong significant correlations were found between the schema 'Emotional deprivation' and the corresponding adverse parenting style of mother and father. The adverse maternal parenting styles also significantly correspond to the schemas Enmeshment, Mistrust/abuse, Defectiveness/Shame and Subjugation. These results indicate that the adverse maternal parenting styles seem to be of greater influence on the EMS of a patient, than the adverse paternal parenting style. However, these findings are inconsistent with other research that give voice to both parenting figures (father and mother) to be of equal importance in the context of EMS presence (Sheffield, Waller, Emanuelli, Murray & Meyer, 2005; Bach et al., 2018).

Bach, Lockwood and Young (2018) were the first to examine the link between the Vulnerable Child mode (SMI), parenting styles (YPI-R) and schemas (YSQ-S3). Except for a direct association between perfectionistic parenting of mother and the Vulnerable Child mode, other direct effects between adverse parenting styles and the Vulnerable Child mode did not remain significant. Four mediation analyses were performed, with the four domains (see Figure 1) as mediation factors. Outcomes represent mediating associations between adverse parenting styles and the Vulnerable Child mode to be substantially explained by the effect of EMS (Figure 2). There is an indirect positive association between Emotionally depriving parenting and the Vulnerable Child mode, which is predominantly mediated by the domain of Disconnection and Rejection. This indicates that a higher outcome on Emotionally depriving parenting results in higher outcomes on schemas within the Disconnection and Rejection domain (e.g. schema Emotional deprivation or Abandonment). Higher outcomes on the domain of Disconnection and Rejection subsequently lead to a higher frequency of the Vulnerable Child mode. Correspondingly, the domain of Disconnection and Rejection predominantly mediated the association between Belittling parenting and the Vulnerable Child mode. The domain of Impaired autonomy and performance mainly mediates between Overprotective parenting and the Vulnerable Child mode. Perfectionistic parenting and the Vulnerable Child mode were primarily mediated by the domain Excessive responsibility and standards.

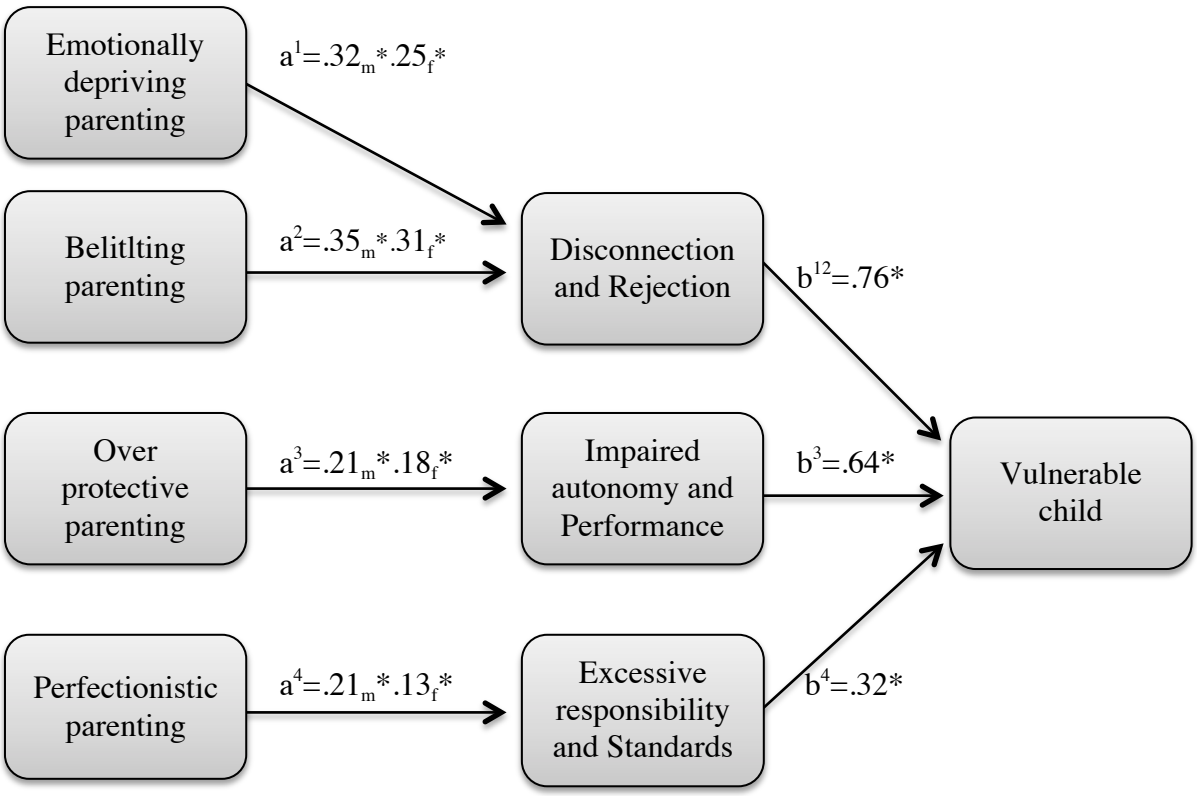

Figure 2. Four major routes from parenting styles to Vulnerable Child Mode through EMS Domains. Adapted from "A new look at the schema therapy model: organization and role of early maladaptive schemas" by B. Bach, G. Lockwood, and J. E. Young, 2018, Cognitive behavior therapy, *47*, p. 341-343. Note:

Another important research to mention is a randomized controlled trial exploring if schema modes are a mechanism for change in ST therapy (Yakin, Grasman & Arntz, 2020). The outcomes presented indicate that the Vulnerable Child mode and Healthy Adult mode have a central role in the change process of personality disorder pathology. The main focus of treatment should be aimed at strengthening the healthy side of the patient and recovering the vulnerable parts. Increased levels of the Impulsive Child mode and the Avoidant Protector mode were found to be predictive for later personality disorder pathology. The Avoidant Protector mode partially moderates the effects of the Healthy Adult and Vulnerable Child mode. Meaning that the positive effect of the Healthy Adult mode and the Vulnerable Child mode on personality pathology was impaired due to relatively high avoidant protector modes. High outcomes on the Avoidant Protector mode could be due to a large proportion of the participants being diagnosed with an avoidant personality disorder (50.9%).

In summary, little research has been conducted into adverse parenting styles, but also in combination with schema modes. Where previous research states that schemas are depicted for the association between childhood adversity and personality disorders, it is of interest to further investigate the relation between adverse parenting styles and schema modes. Accordingly, schema modes are defined as an emotional-cognitive-behavioural 'self-state' due to activated schemas and coping responses. In particular, the relationship between these concepts in the context of treatment is of interest, as it could provide information about the underlying working mechanism of the treatment. Research that focuses on this topic may provide more clarity about important aspects to focus on during treatment, with the result that the complex mental health problems of patients will be reduced.

Aims of the current study

The goal of the present study is to examine the relationship between adverse parenting styles and schema modes by patients with complex personality disorders throughout 12-month inpatient schema therapy. Accordingly, the first aim of the study is to examine the content validity and reliability of the Young Parenting Inventory. The second aim is to investigate the correlation between adverse parenting styles and the schema modes throughout inpatient treatment. The third aim is to examine whether multiple parenting styles correlate with the change of one schema mode, to determine the parenting styles that are particularly related to the inpatient treatment change of schema modes. The overall findings are expected to provide more knowledge on the therapeutic approach for patients with complex personality disorders.

Method

Design

The current study focuses on treatment outcomes of patients with complex personality disorders who received treatment at Expertise centre for personality disorders the Boerhaven clinic, previously known as De Wieke. Data on the schema modes is concurrent with previous research of Wolterink and Westerhof (2018), and Schaap and colleagues (2016). Data research for the current study has been supplemented with addition of new data. Attention is focused on two moments of measurements: pre-treatment and post-treatment.

Participants

To be included for treatment at the Boerhaven clinic, the patients were in need of an IQ larger than 80, and showed to have a sufficient level of the Dutch language. Patients with acute suicidality were excluded from treatment, together with patients that consist of a level of aggressiveness that could lead to the endangerment of fellow patients. Prior to this clinical treatment, patients have already received some form of outpatient-, daytime and/or inpatient treatment from which they have not benefited sufficiently.

For establishing validation of the Young Parenting Inventory, 204 respondents were included that were approached to participate in research during the period of April 2012 until September 2019. Out of these respondents 156 were female (76.5 %, average age of 26 years), and 48 were male (23.5%, average age of 30 years).

During the period of April 2012 until September 2018, 146 patients of De Wieke were approached to participate in research. Out of these 146 participants, 51 patients stopped treatment within the first six months of treatment (drop-outs) and 14 patients completed treatment within the duration of one year. Out of the remaining 81 respondents, 5 patients had not completed the measurements (>50% missing values). This would affect subscales outcomes and result in exclusion of these respondents. 76 patients filled in the pre- and post-treatment measurements of the SMI and were included for the present study. Out of these participants, 56 were female (73.7%) and 20 were male (26.3%), with an average age of 26 years (σ = 6.09). All of the participants completed treatment, with an average inpatient treatment duration of 58 weeks (σ = 13.50).

Clinical inpatient schema therapy

Treatment at Expertise centre for personality disorders clinic De Boerhaven covers a period of one year, with the possibility to shorten or extend the duration. Patients stay at the clinic from Sunday evening to Friday afternoon, where they receive schema therapy for five whole days. There are three basic groups that each consist of a maximum of nine people, resulting in a maximum of 27 patients. Two sessions of schema group psychotherapy take place each week in addition to one session of art therapy, psychodrama therapy, and psychomotor therapy. Besides, there is a session of social orientation, sociotherapy and pharmacotherapy. It is possible for patients to follow other modules in addition to the standard program, including a module of self-control, self-expression, experiential schema therapy, cognitive schema therapy, and case conceptualisation. Sociotherapists are present in the patient's living environment, providing supervision of daily activities, and a safe therapeutic environment.

Treatment follows the same phases set for individual schema therapy developed by Young and colleagues (2003), although it is carried out in the form of group therapy. Treatment starts with a diagnostic phase, resulting in the formation of an individual case conceptualization. The first phase of treatment is called the connection and emotion regulation phase. New relationships are made with fellow group members and fellow residents, but also with the therapists. Patients gain insight in their schemas, schema modes, and how these relate to their complaints. A new view is gained into their own emotions and possibilities to regulate them in a healthy way. The change phase is the second phase of treatment. Here the focus lays on making changes to schemas and schema modes. The last phase is called the autonomy phase, which revolves around the development of autonomy. Patients are stimulated to be open about their thoughts, feelings, and behaviour. Therapists initially put an emphasis on cognitive techniques, followed by an emphasis on the experiential techniques and thereby bringing attention to the schema modes. For a more in detail description of clinical inpatient schema therapy is referred to Wolterink and Westerhof (2018).

Treatment by the schema mode model and limited reparenting

During treatment there are specific goals for every mode (Figure 3). Coping modes have to be addressed first, before getting access to the underlying child modes (Fassbinder et al., 2014). Before addressing the coping modes these have to be identified first, then be placed in the context of upbringing and discussing the pros and cons. The patient can reduce the coping modes in case of a sufficiently safe therapy relationship. Through the therapeutic relationship and group members, the child modes are supported and comforted when activated. By

meeting the frustrated needs of the child modes, new and healthier schemas can be learned. Limited reparenting shapes the therapeutic relationship. Within the Boerhaven clinic there are several therapeutic relationships, other than the relationship with the head practitioner and therapist of the schema group psychotherapy. Limited reparenting is thereby also formed through the context of the living environment, by means of sociotherapists and art-, psychodrama-, psychomotor therapists.

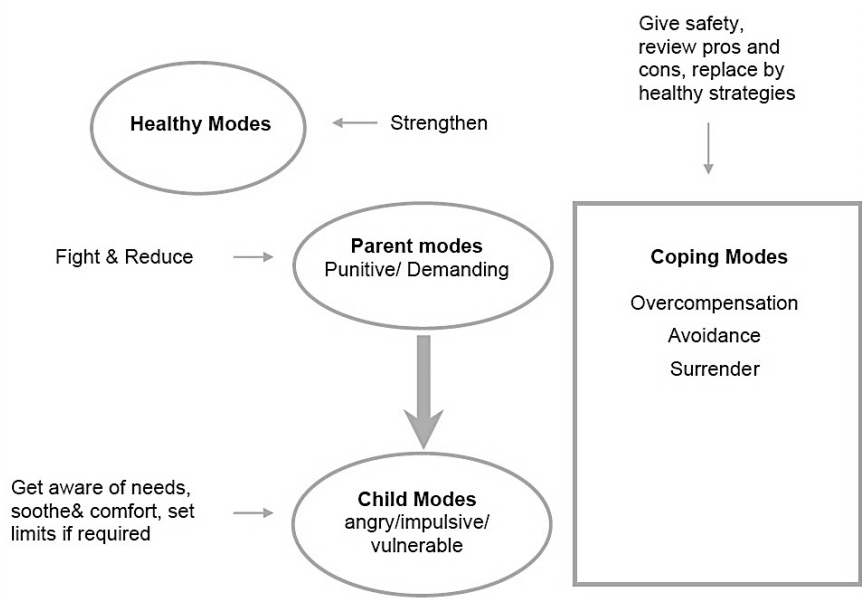

Figure 3. Mode-specific goals of therapy. Reprinted from "The schema mode model for personality disorders." by E. Fassbinder, U. Schweiger, G. Jacob, and A. Arntz, 2014, *Die Psychiatrie, 11*, p.78-86. Copyright 2014 by Die Psychiatrie.

Materials

In the current study adverse parenting styles were measured in terms of self-reported parental behaviour recalled from childhood, and schema modes were investigated in terms of self-reported frequency of emotional states and responses.

Young Parenting Inventory (YPI; Young, 1999b) was developed to identify potential evolutionary roots of the seventeen early maladaptive schemas. This inventory consists of 72 items that each concerns the perception of the maternal and paternal behavior during childhood. The items are answered separately for the father and mother, and are rated on a 6-point Likert scale ranging from 'entirely untrue for me' to 'describes me perfectly'. An example question is 'was warm and physically loving' or 'abused me physically, emotionally or sexually'.

Schema Modi Inventory (SMI; Young, Arntz, Atkinson, Lobbestael, Weishaar, van Vreeswijk & Klokman, 2007) was used to determine the schema modes. This self-report questionnaire consists of 124 items, measuring a total of 14 schema modes. Items are rated on a 6-point Likert scale ranging from 'not at all true' to 'completely true'. An example question is 'I deserve to be punished' or 'I feel loved and accepted'. Lobbestael and colleagues (2010) found the SMI to be a valid instrument, with good internal consistency (ranged from $\alpha = .79$ to $\alpha = .96$), and adequate test-retest reliability (ranged from .65 to .92).

Procedure

Measurements of the parenting styles (YPI) and modes (SMI) took place approximately seven weeks before treatment (pre-treatment) and at the end of treatment after approximately 48 weeks (post-treatment). All patients participating in therapy were asked if they wanted to be part of a broad scientific research. Information was given about the broad scientific research that included information about participation being voluntary, data being processed anonymously, and the ability to stop participation at all times. Informed consent was given after patients were informed. Master-level psychology students, who were under the supervision of clinical psychologists, carried out data collection.

Data analyses

Statistical analyses were performed using IBM SPSS Statistics 21. First was examined whether data of the YPI was normally distributed, before analysing the construct validity and reliability values. Exploratory factor analysis (EFA) was conducted for investigating the factor structure of this YPI sample. Based on outcomes of the KMO index and the Bartlett's test of Sphericity were indicated whether the data of the YPI is sufficient for performing factor analyses. In case significant outcomes are presented, the factor structure of the YPI is investigated by means of an Exploratory factor analysis (EFA). In case values of the factor correlations matrix are .32 or above an oblique method (promax) is used rather than an orthogonal rotation (Tabachnick and Fidell, 2001). Parallel Analyses (PA) was used to obtain the number of factors from the data. This method seems to be the most accurate for detecting the true number of factors in comparison to other common used methods (Louis et al., 2018; Zwick & Velicer, 1986). Item selection criteria were used in order to select the most prominent items. Item loadings with an absolute value of .40 or below were not used for further analyses, because in this case the item does not relate to the other items or this item is part of another factor that should be explored (Costello & Osborne, 2005). When an item

presents several cross loadings with other factors, priority was given to items with the highest loading (Bach et al., 2018). And if there are several loaders with an absolute value of .50 or above on more factors this item is dropped from analysis, because the factor structure may be flawed or items could be written deficiently (Costello & Osborne, 2005). A factor with five or more items with absolute values of .50 or above is considered as a solid factor, where a factor of less than three items is considered as weak and will therefore be excluded. Cronbach's alpha reliability values of .60 or greater are viewed as adequate for the factors (Clark & Watson, 1995).

Pearson correlation coefficients (two-tailed) are used to investigate the correlation between adverse parenting styles and the schema modes throughout inpatient therapy. First pre- and post-treatment outcomes of the schema modes are examined through mean-scores and standard deviations. Followed by measuring the differences in outcome between pre- and post-treatment conducting a paired samples *t* test, and measuring effect sizes by calculation of Cohen's *d* (Cohen, 1988). For Cohen's *d* effect sizes of .80 are categorized as large, .50 as moderate, and .20 as small. Residual gain scores were calculated based on the formula $Z_2 - (Z_1 * r_{1\text{-}2})$, and used to control measurement error due to repeated measures by usage of the same instrument (Steketee & Chambless, 1992). Therefore, pre- and post-treatment scores are converted into Z scores, and Pearson correlations between pre- and post-treatment scores are conducted. Pearson correlation is performed using these residual gain scores, and the number of the factors based on previously performed factor analyses. Interpretations of the Pearson correlation coefficients are based on the stratification of Schober and colleagues (2018).

In line with the third aim of the current study, multiple regression analyses are conducted for investigating to what extent the YPI outcomes at baseline are related to changes in the modes during treatment. To examine changes in SMI outcomes during treatment, residual gain scores of the SMI are entered as dependent variables. The YPI outcomes for Mother and Father are the independent variable, and entered (stepwise) in a regression model. Herewith, the number of parenting styles that are related to change of one schema mode is examined.

Results

Phase 1. Exploratory factor analyses of the Young Parenting Inventory

In order to measure the construct validity of the YPI, exploratory factor analysis was carried out using SPSS. A KMO index of .89 was presented for the YPI-father, next to a statistically significant Bartlett's test of Sphericity $\chi^2\,(2556, n = 204) = 9245.99, p < .001$. For the YPI-Mother a KMO index of .91 was presented, together with a statistically significant Bartlett's test of Sphericity $\chi^2\,(2556, n = 204) = 10888.77, p < .001$. The two basic assumptions for performing factor analyses were indicated by these results.

Exploratory factor analysis resulted in fourteen factors for the YPI-Mother with explained variance of 32.31%, and eigenvalues ranging from 1.03 to 23.27. Exploratory factor analysis for the YPI-Father resulted in a presentation of seventeen factors, with 27.51% explained variance, and eigenvalues ranging from 1.02 to 19.81. However, based on Parallel Analyses (PA) five factors were extracted, both for the YPI-father and YPI-mother. For the YPI-mother this five-factor model explains 63.34% of the variance with eigenvalues ranging from 1.42 to 16.30. Alongside, a five-factor model explains 58.00% of the variance for the YPI-father with eigenvalues ranging from 1.62 to 14.27. Based on these values, the five-factor model is a satisfactory solution for explaining the adverse parenting styles (Hair, Black, Babin & Anderson, 2014).

Item selection was administered for the creation of factors with the most representative items. Items were not used for further analyses in case item loadings were below .40 and had cross loadings of .50 with multiple factors. A factor was excluded when it consisted of less than three items, and if Cronbach's alpha reliability values were below .60. Based on these selection criteria, a robust five-factor model is composed for the YPI-Mother and YPI-Father (Figure 4). For example, for the YPI-Mother the first factor '*Belittling mother'* is a composition of the items derived from the following YPI-subscales: Defectiveness/Shame, Failure to achieve, Subjugation, Pessimism, and Self-Punitiveness. '*Belittling father'* is based on the same items as Belittling mother, with the addition of items from the subscale Mistrust/abuse. *'Over Protective father'* is the least robust factor of the presented model. Although the item values are considered moderate to high with factor loadings ranging from .69 to .78, this factor consists of only three items (Appendix A). For the YPI-Mother, the *'Abusive mother'* is considered least prominent, with a composition of four items with moderate factor loadings ranging from .46 to .64. Other factors are more robust with a minimum of five, and a maximum of eighteen items.

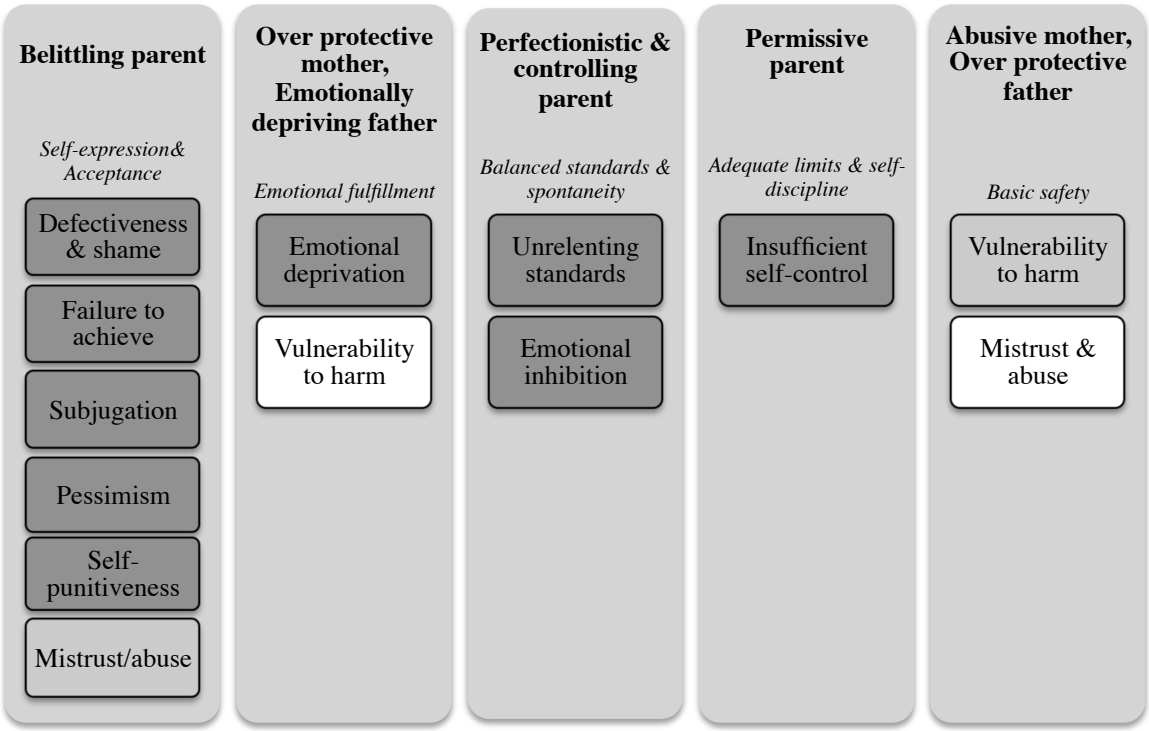

Figure 4. New proposed five-factor model for the YPI-Mother and YPI-Father

Note: Dark coloured boxes represent items of the YPI-subscales applying for Mother and Father. Light grey boxes only apply for father, and white coloured boxes only apply for mother.

Figure 4 definitions in italic present new proposed expected adaptive characteristics to evolve in case core emotional needs are to be met, based on Figure 1 (Bach et al., 2018). Furthermore, the definitions of the adverse parenting styles presented in Figure 4 are displayed. A '*Belittling parent'* is defined as a parent who had a lot of criticism. He/she rejected the child or made the child feel ashamed about oneself. In case the child did something wrong the belittling parent would punish him, call him names or was disparaging. It seems like this parent took pleasure in hurting others. An *'Overprotective parent'* is defined as a parent who overprotected the child. He/she worried disproportionately that the child would get hurt, or worried excessively about the child getting sick. An *'Emotionally depriving father'* is a father who was not warm or physically affectionate. He spent little time with the child, paid little attention to him/her. This father did not listen, understand or share feelings with the child. He did not give helpful guidance or treated the child as if he/she was someone special. A *'Perfectionistic and controlling parent'* is a parent who was a perfectionist in many areas. This parent is structured, organized, and he/she assumes that things should 'just be that way'. In addition, this parent was uncomfortable by expressing affection and vulnerability,

speaking little about his/her feelings. A *'Permissive parent'* is defined as an undisciplined parent. It concerns a parent who offered very little discipline and structure to the child. In addition, this parent imposed few rules and responsibilities for the child to live by. The *'Abusive mother'* is defined as a mother who used the child to satisfy her own needs. She abused the child physically, emotionally, or sexually. This mother seemed to get pleasure from hurting people, and she could lie, deceive or betray the child.

For measuring the reliability of the YPI, Cronbach's alpha values were conducted. With Cronbach's alpha reliability values ranging from good to excellent for YPI-Mother (α = 83 to .96), and from acceptable to excellent for YPI-Father (α = .74 to .95: Table 3). Results indicate that an Overprotective mother and a Perfectionistic and controlling father are the most common in the population studied. A Perfectionistic and controlling mother, and an Emotionally depriving father follow this.

Table 3
Descriptives of the YPI for father and mother (n=204)

	Mother			Father		
YPI	M	SD	α	M	SD	α
Belittling parent	2.57	1.28	.96	2.51	1.16	.95
Over prot $_{M}$ Emo depr $_{F}$	3.42	1.19	.87	3.04	1.33	.91
Perfectionistic parent	3.24	1.21	.83	3.50	1.34	.83
Permissive parent	2.24	1.21	.83	2.31	1.17	.78
Abusive $_{M}$ Over prot $_{F}$	1.84	1.22	.84	1.90	1.03	.74
Total	2.75	.70	.89	2.74	.72	.91

Note. $_{M}$ = Mother, $_{F}$ = Father.

Phase 2. Investigating the correlation between adverse parenting styles and the changes in schema modes throughout inpatient therapy

To investigate the correlation between the YPI-factors and the changes in SMI modes, first pre- and post-treatment outcomes of the SMI modes are examined (Table 4), next to the differences in outcomes between measurement moments (paired samples *t* test), and effect sizes (Cohen's *d*).

All paired samples t test outcomes are found to be statistically significant, with exception of the Bully and Attack mode. The effect sizes for the changes of modes during inpatient treatment were small for the Bully and Attack mode and the Self-Aggrandizer mode (*d* <-.26). For other SMI modes, the effect sizes were moderate to large (ranging from -.45 to 1.09).

Table 4
Pre- and Post-treatment Mode outcomes (n = 76)

SMI mode	Pre-treatment M (SD)	Post-treatment M (SD)	Post-Pre-treatment M (SD)	*t*	*d*
Vulnerable child	39.18 (7.52)	28.95 (11.01)	-10.4 (12.38)	-7.21**	-0.83
Angry child	30.67 (8.53)	26.41 (8.88)	-4.26 (8.71)	-4.27**	-0.49
Enraged child	17.13 (6.46)	14.57 (6.58)	-2.57 (5.71)	-3.92**	-0.45
Impulsive child	23.17 (7.59)	20.07 (7.39)	-3.11 (6.78)	-3.99**	-0.46
Undisciplined child	20.43 (5.09)	17.07 (5.42)	-3.37 (5.38)	-5.46**	-0.63
Compliant or surrender	26.22 (5.31)	19.84 (6.13)	-6.38 (7.99)	-6.96**	-0.80
Detached protector	29.67 (7.65)	23.35 (10.06)	-6.40 (9.14)	-6.07**	-0.70
Detached self-soother	14.99 (3.49)	11.32 (4.35)	-3.67 (4.53)	-7.07**	-0.81
Self-aggrandizer	24.41 (7.54)	22.80 (6.65)	-1.61 (6.19)	-2.26*	-0.26
Bully and attack	16.59 (5.89)	15.33 (6.04)	-1.26 (5.71)	-1.93	-0.22
Punitive parent	29.99 (9.08)	23.64 (11.26)	-6.34 (10.47)	-5.28**	-0.61
Demanding parent	37.00 (9.57)	32.13 (8.99)	-4.87 (9.65)	-4.40**	-0.50
Happy child	24.87 (5.64)	34.88 (9.48)	10.01 (9.21)	9.48**	1.09
Healthy adult	33.36 (6.10)	40.26 (6.51)	6.91 (8.40)	7.17**	0.82

Note. *p<.05. **p<.001. *d* = M/SD based on paired differences

Table 5 is an overview of the Pearson correlations between the residual gain scores of the SMI modes and the mean scores of the YPI-Father factors at baseline. No significant Pearson correlations were found between the mean scores of the YPI-Mother factors, and the residual gain scores of the SMI. Negative associations were found between Belittling father and change during treatment in the Impulsive Child mode, Undisciplined Child mode, and the Detached Self-Soother mode. Indicating that higher scores on the Belittling father factor at baseline, result in significant decrease of the Impulsive Child, Undisciplined Child, and the

Detached Self-Soother mode during treatment. The Perfectionistic and controlling father is negatively associated with changes during treatment in the Angry Child mode, Self-Aggrandizer mode, and the Bully and Attack mode. Indicating that higher scores on the Perfectionistic and controlling father factor at baseline result in significant decrease of the Angry Child mode, Self-Aggrandizer mode, and the Bully and Attack mode during treatment. The Perfectionistic and controlling father presents a positive association with the Healthy Adult mode, meaning that a higher score on this YPI-father factor is related to significant increase in the Healthy Adult mode during treatment. Scores on the Permissive father factor at baseline are significantly associated with most changes in modes throughout treatment. Significant negative associations are displayed between the Permissive father factor and the Vulnerable Child mode, the Compliant or Surrender mode, the Punitive Parent, and the Demanding Parent. This signifies that a high score on the Permissive father factor at baseline indicates a significant decrease in the Vulnerable Child mode, the Compliant or Surrender mode and the Dysfunctional Parent modes. Next, a significant positive association is presented between the Permissive father and the Happy Child mode, meaning that a high score on the Permissive father indicates a significant increase in the Happy Child mode during treatment.

Table 5

Pearson correlations between residual gain scores of the SMI modes and the YPI Father factors (n=76)

	Belittling father	Emotionally depriving father	Perfectionistic/ controlling father	Permissive Father	Over protective father
Vulnerable child	-.17	.02	-.14	**-.29***	-.02
Angry child	-.22	.08	**-.32****	-.09	.03
Enraged child	-.10	.03	-.19	-.11	.06
Impulsive child	**-.23***	.15	-.17	-.14	.02
Undisciplined child	**-.23***	.05	-.12	-.06	.09
Compliant or surrender	-.09	-.01	-.08	**-.36***	-.06
Detached protector	-.12	.08	.20	.05	.01
Detached self-soother	**-.24***	.14	-.21	-.14	.09
Self-aggrandizer	-.21	.11	**-.26***	.03	.10
Bully and attack	-.10	.04	**-.26***	.03	.10
Punitive parent	-.14	.00	-.16	**-.24***	.00
Demanding parent	-.02	.02	-.07	**-.23***	.09
Happy child	.22	.02	.14	**.24***	.05
Healthy adult	.20	.00	**.23***	.16	.12

Note. *p<.05. **p<.01 (two-tailed).

Within this research, the Permissive father is related to the most variables, among which the strongest relationship is shown with treatment change of the Compliant or Surrender mode (r = -.36). The found significant relationships are estimated as weak correlations, also in case of treatment change of the Vulnerable Child, the Happy Child and the Dysfunctional Parent modes in relation to the Permissive father. Subsequently, the Perfectionistic and controlling father shows weak relationships with most variables (Table 5). Finally, the Belittling father accounts for weak significant relationship with treatment change for three of the schema modes. No linear relationships were found for change in schema modes of the Enraged Child, and the Detached Protector in correlation to the adverse parenting styles.

Phase 3. Investigating to what extent the Young Parenting Inventory outcomes at baseline are related to changes in the modes during treatment.

In order to investigate the predictive value of the YPI at baseline, multiple regression analyses were conducted. With the residual gain scores of the SMI as dependent variable, and the factors of the YPI-Father and YPI-Mother as independent variables. Multiple regression analyses presented absence of statistically significant outcomes between the YPI-Mother factors and changes in modes during inpatient treatment. For the YPI-Father factors several significant outcomes were found, corresponding with outcomes of the Pearson regression analyses (Table 5). Performing the stepwise multiple regression analyses does not appear to be of greater suitability in the current study, given that the significant correlations concern one-on-one relationships. Meaning that, for example, a correlation has been found between the YPI-Father factor 1 (Belittling father) and specific modes, but adding the other four YPI-Father factors does not present greater significant value.

Discussion

The presented study is the first to examine the relationship between adverse parenting styles and schema modes. This study is aimed at patients with complex personality disorders, and their change in schema modes throughout 12-month inpatient schema therapy. First, the Young Parenting Inventory was examined for its content validity and reliability. Second, it was investigated if changes in schema modes were related to the adverse parenting styles of patients. Third, it was examined whether multiple parenting styles correlated with the change of one schema mode. By the results of this research, the importance of the therapeutic relationship is explored in supplementing emotional core needs of patients through limited reparenting.

Potential link between the adverse parenting styles and the emotional core needs

The Young Parenting Inventory questionnaire was initially investigated for its validity and reliability, since little research has been performed on this before. In the present study a five-factor structure was found to be representative, for both paternal and maternal parenting styles (Figure 4). This five-factor structure fits the original theoretical framework of Young (2003) that adverse parenting styles correspond to the five emotional core needs. The items that shape these factors are consistent with findings from previous research (Slenders, 2014; Sheffield et al., 2005), with exception of items from the subscale 'Seek approval' for which no firmness was found in the current study. And, in contrast to preliminary validation of the questionnaire performed by Sheffield and colleagues (2005), the current study presents enough strength for items of the subscale 'Mistrust and abuse'. These differences in outcomes are most likely due to the only-clinical target group of the current study, and the link between neglecting behaviour of parents in childhood and the development of personality disorders in adulthood (Batool, Shehzadi, Riaz & Riaz, 2017). Alongside, the present study introduced The Permissive parent as a new concept for validation of the Young Parenting Inventory. The Permissive father is a prominent factor formed by five items with factor loadings ranging from moderate to high. Items that are part of the Permissive parent weren't validated in previous research or correlated negatively with a factor named 'Upbringing with excessive rules and structure', which is apposite as a contrary concept of the permissive parent (Slenders, 2014; Sheffield et al., 2005).

The content of the parenting styles that emerged from the analyses in this study do not immediately overlap with the content of the five emotional core needs proposed by Young.

The Permissive parent is an exception to this, given the direct overlap with the core need of impaired limits (Figure 1). However, the structure of the five overarching parenting styles concerns the composition of different sub-parenting styles, and the associated entanglement as a result of disruption within the emotional core needs. Table 6 provides an overview of the various adverse parenting styles, including the associated subscales from the Young Parenting Inventory that emerged from this study. Adaptive parenting styles are added to the table with corresponding emotional core needs. The specific emotional core needs to result from adaptive parenting are based on previous research into Early Adaptive Schemas (EAS) (Louis, Wood, Lockwood, Ho & Ferguson, 2017).

Research on the factor structure of the Young Parenting Inventory has not been unambiguous. However, outcomes of the current research are a first presentation of the adverse parenting styles of patients with complex personality disorders. Accordingly, patients with a complex personality disorder mainly grew up with a perfectionistic and controlling parent, an overprotective mother or an emotionally depriving father. This means that most of the patients seem to benefit from a restorative relationship with a parental figure who is accepting the individual for its whole being, and shows to be caring and protective (Table 6). This is also consistent with finding from research on the effective factors of clinical schema therapy from the perspective of patients and therapists (Wonnink, 2019). The participants surveyed indicated 'awareness and expression of emotions' as an important treatment factor. Where many clients described the Boerhaven clinic as one of the first places they could express their emotions and receive acceptance on their expressions.

Adverse parenting styles in relation to changes in schema modes

Changes in schema modes were compared for their outcomes before and after treatment. Results indicate that after one year of treatment the dysfunctional child-, coping- and parent modes were reduced. In addition, the functional modes increase and thereby strengthen as a result of the treatment. The effect of these changes are moderate to large, with exceptions for the Bully and Attack mode and the Self-Aggrandizer mode that presented small changes over the duration of one year treatment. For the Self-Aggrandizer mode this outcome is consistent with previous findings (Yakin et al., 2020). The small treatment change of the Bully and Attack mode cannot be explained by outcomes of previous performed research, where this specific mode has not been included in previous research or has been merged with other coping modes (Videler, Rossi, Schoevaars, van der Feltz-Cornelis & van Alphen, 2014).

Table 6

Proposed theoretical links between parenting styles, emotional core needs, EMSs and EASs

Unsatisfied emotional core needs	Maladaptive parenting style	*In case core needs are met by primary caregiver*	Adaptive parenting style
Belittling & rejection	**Belittling Parent** Defect Failure Subjugation Pessimism Self-Punitiveness Mistrust & Abuse [F]	*Self-expression & acceptance*	**Constructive Parent** Self-Acceptance & Lovability Success Assertiveness & Self-expression Optimism & Hopefulness Self-Compassion Basic trust
Disconnection & deprivation	**Overprotective mother & Emotionally depriving father** Emotional deprivation Vulnerability to Harm [M]	*Connection & Emotional fulfilment*	**Caring & Protective parent** Emotional fulfilment Basic health & Safety
Exaggerated Expectations	**Perfectionistic parent** Unrelenting standards Emotional Inhibition	*Balanced standards & Spontaneity*	**Accepting Parent** Realistic expectations Emotional Openness & Spontaneity
Impaired limits	**Permissive Parent** Insufficient Self-control	*Adequate limits & Self-Discipline*	**Limit-imposed Parent** Healthy self-control & Self-Discipline
Detachment	**Abusive Mother & Overprotective Father** Vulnerability to harm [F] Mistrust & Abuse [M]	*Basic Safety*	**Humanitarian parent** Basic Health & Safety Basic Trust

Note. [F] = YPI-Father, [M] = YPI-Mother

The relation between patients' adverse parenting styles and treatment change by means of schema modes was investigated, and one-on-one relationships were found with treatment change of twelve schema modes. The absence of significant correlations between the maternal parenting styles and changes in the schema modes indicate that a positive change occurs during treatment regardless of the adverse maternal parenting style. Differences in significant outcomes between paternal and maternal parenting styles cannot be explained by the extent in which these parenting styles are present in the studied population (Table 2). A possible reason for these outcomes could be that the population studied largely consists of female participants.

And it is possible that for this main female population it is of greater importance to bond with a father figure in order to fulfill one's emotional core needs and change underlying patterns of psychopathology. At the time of the study, there were also few male therapists present at the Boerhaven clinic. It could be that due to the limited number of paternal figures, attachment to the few of them became of greater importance. Where the presence of many female and maternal figures in the environment possibly led to easier access of a corrective maternal relationship.

However, change in twelve of the fourteen schema modes do relate to the paternal parenting styles measured before treatment. This concerns the parenting styles of the Belittling father, the Perfectionistic and controlling father, and the Permissive father. Within this study, a Belittling father was defined as "a father who had a lot of criticism. He rejected his child or made the child feel ashamed about himself. In case the child did something wrong the belittling father would punish him, call him names or was disparaging. It seems like he took pleasure in hurting others" (p. 20). In case a patient would start treatment at the Boerhaven clinic and presented a high outcome on the Belittling father, during the inpatient treatment of one year this patient would show significant reduction on the Impulsive and Undisciplined Child modes and the Detached Self-Soother mode. A possible explanation for this could be that the patients who grew up with a Belittling father received rules and criticism from outside. These children may not have learned to control their impulses enough on their own, or in the absence of their father, or did not learn to tolerate boredom and frustration enough to complete tasks. However, through inpatient treatment at the Boerhaven clinic these patients seem to be learning how to self-regulate and self-discipline, or that short-term gratification can be delayed to pursue long-term goals.

Patients that presented to have grown up with a highly perfectionistic and controlling father experienced a significant reduction in the Angry Child mode, Self-Aggrandizer mode, and the Bully and Attack mode during inpatient treatment. A Perfectionistic and controlling father was defined as "a father who was a perfectionist in many areas. This father is structured, organized, and he assumes that things should 'just be that way'. In addition, this father was uncomfortable by expressing affection and vulnerability, speaking little about his feelings" (p. 20). It is noticed that the change in the associated schema modes appears to be mainly states of externalizing and overcompensating behaviour. These findings are concurrent with previous studies documenting the possibility that the father figure could be the most important source in the future development of externalizing symptoms (Gallarin & Alonso-Arbiol, 2012). Although a specific link between a perfectionistic father and externalization

behavior has not been established before, as well as lack of previous research into the relationship between growing up with a perfectionistic father and a reduction in externalizing behaviours as a result of inpatient treatment. Throughout the inpatient treatment, a patient that grew up with a perfectionistic and controlling father may have learned healthier ways to express underlying frustration and anger. These patients may have learned to reflect on their own inner experiences and were accepted despite their imperfections. Hence, eliminating the need to enter an emotional-cognitive-behavioural state of externalization in order to overcompensate some form of discomfort.

In addition, patients that had grown up with a highly permissive father experienced a significant reduction in the Vulnerable Child mode during treatment, but also a reduction of the Compliant or Surrender mode and both of the Dysfunctional Parenting modes. A Permissive father was defined as "an undisciplined man. It concerns a father who offered very little discipline and structure to the child. In addition, this father imposed few rules and responsibilities for the child to live by" (p. 21). A possible explanation for this outcome could be that children who grew up with a parent that imposed few rules, structure and responsibilities from outside found a solution to fulfil their own emotional core needs. Possibly they internalized their need for rules and structure by strengthening their demanding and Punitive Parent mode. Through the inpatient treatment these patients received clear structure, rules and responsibilities, which could possibly result in lowering of these Dysfunctional Parent modes. For as far as known, previous research of Bach and colleagues (2017) were the only ones to investigate the link between adverse parenting styles and the Vulnerable Child mode. However, they did not include investigation of the relationship between the Vulnerable Child mode and the domain of 'Impaired limits' based on the assumption there would be no relationship to find. Answers explaining why the Permissive father is of importance cannot be given on the basis of this research. Partially, because this study is the first to find sufficient validation for the Permissive father (YPI subscale 'Insufficient Self-Control'). However, these findings do indicate that it is of relevance to perform more research on the Permissive father in the context of personality disorders and treatment.

Potential role of the therapeutic relationship and change in schema modes

Young (2003) hypothesized that the strongest early maladaptive schemas, and thus the strongest underlying patterns in interpersonal communication arise from the upbringing by the parental family. Through inpatient group therapy an own cosmos is created in which

situations occur that are experienced as reminiscent of parental situations (Yalom, 1984). Additionally, a unique interpersonal context is formed by the therapist' specific qualities in combination with the patient's specific qualities (Steel, Macdonald & Schröder, 2018). Previous research empowers the importance of attachment between therapist and patient, and knowledge is gained on certain therapist factors that strengthen the quality of the therapeutic relationship among which dependability, warmth and responsiveness (Ackerman & Hilsenroth, 2003). Based on the current study the importance of the therapeutic relationship in the context of attachment is highlighted again. However, next to the model of attachment theory there are few theoretical tools for attachment development between therapist and patient (Berant & Obegi, 2008). The current study presents a theoretical concept for attachment, focussing on a restorative therapeutic relationship wherein previously disrupted emotional core needs are fulfilled. When performing therapy among patients with complex personality disorders this focus can be shaped by strengthening and fulfilling the following core needs: (1) Self-expression and acceptance; (2) Connection and emotional fulfilment; (3) Balanced standards and spontaneity; (4) Adequate limits and self-discipline; (5) Basic safety. In addition to knowledge on the upbringing of patients, it must be made clear how a therapist meets the fulfilment of these emotional core needs. Where treatment selection can be based on this concept, with complementary styles between therapist and patient working more effectively together (Steel et al., 2018). For example, a patient that grew up with a highly belittling parent receiving treatment from a therapist who satisfies the patient's fulfilment of self-expression and acceptance.

Strengths and limitations

The major strength of the current study is the inclusion of only clinical respondents, where this study is the first to examine the factor structure of the Young Parenting Inventory with a clinical sample of patients with complex personality disorders. This is a strength, given that previous limited psychometric validation of the YPI was based on non-clinical respondents that mainly consists of student populations, with exception of the YPI validation presented by Slenders (2014), and Bach, Lockwood and Young (2018). The current study is the first in examining the relationship between adverse parenting styles and schema modes in general, but also in specific for changes in schema modes during a 12-month inpatient schema therapy. Another strength is the detailed view on the subject, given the examination of all fourteen-schema modes, and the examination of the factor structure of the YPI. However, limitations of the current study should also be emphasized.

In general it is found difficult to measure parenting-psychopathology relationship by means of valid and reliable measurements (Sheffield et al., 2005). First, participants need to reflect on a period of time long ago before answering the questions of the YPI. This retrospective reporting is more likely to be influenced by state-dependent memory and recall bias. Second, some participants may not be able to truly reflect on experiences during childhood, due to for example traumatic experiences. Questions of the YPI (e.g. item 11: "Father/Mother abused me physically, emotionally or sexually") could trigger EMS or coping modes, and eventually result in avoidance or idealization. Another limitation within this study is that for validation of the YPI, respondents were included who did not complete treatment but filled in the YPI at pre-treatment. This could lead to some distortion of the results, when the YPI scores are analysed in comparison to SMI scores of patients who did complete treatment.

Recommendations for future research

Due to the explorative character of the present study, it is recommended for future research to replicate the research design in context of other clinics treating personality disorders. Future research should focus on the specific and underlying working components of schema therapy, including the therapeutic relationship. New findings within this study also indicate the relevance to research on adverse parenting styles as mediator or moderator between EMS, schema modes, symptoms representation and well-being. Where previous research on this matter has shown interesting findings (e.g. Bach et al., 2018). The Boerhaven clinic is recommended to create a balance between male and female therapists, for patients to experience both as role models. Finally, it is recommended to develop a questionnaire for therapists by which can be investigated to what extent they can provide fulfilment of the emotional core needs, and thereby creating a best-fit practice between therapist and patient.

Conclusions

Findings of the current study present a five-factor structure in terms of adverse father and mother parenting styles, for the comprehension of parenting styles of patients with complex personality disorders. Through inpatient treatment with the duration of one year, the dysfunctional child-, coping-, and parent modes of these patients were reduced. Alongside, an increase and thereby strengthening of the functional modes took place. These changes in schema modes can in general be described as moderate to large, and occurred regardless of the maternal parenting that took place during the childhood of these patients. In contrast,

changes in certain schema modes were found to depend on paternal parenting styles including upbringing with a belittling father, perfectionistic and controlling father or the permissive father. The current study is the first to provide validation of the permissive father. Besides the permissive father was found to be of greatest interest in relation to changes in schema modes. Findings imply that the population studied has mostly grown up with a perfectionistic and controlling parent, an overprotective mother and an emotionally depriving father. Implicating that most of the patients seem to benefit from a restorative relationship with a paternal figure that is accepting the individual for its whole being, and shows to be caring and protective. How the underlying mechanisms precisely work in relation to schema mode change remains unclear. In conclusion, these findings support the implication for further research into the underlying working mechanisms of schema therapy, focusing on the adverse parenting styles of patients with (complex) personality disorders.

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Appendix

Appendix A: Factor structure of the Young Parenting Inventory

		Factor									
Subscale	Item	1		2		3		4		5	
		M	F	M	F	M	F	M	F	M	F
Emotional Deprivation	1*	-,517		,416	,705						
	2*			,504	,818						
	3*			,432	,730						
	4*			,548	,779						
	5*			,564	,795						
Mistrust/ Abuse	10		,645							,455	
	11		,696							,574	
	12		,597							,635	
	13		,793							,541	
Vulnerability to harm	14			,908							,740
	15			,777							,780
	17			,772							,690
Defective-ness/shame	21	,840	,850								
	22	,710	,652								
	23	,909	,730								
	24	,700	,792								
Failure to achieve	26	1,014	,676								
	27	,723	,466								
	28	,970	,628								
Subjugation	29	,818	,756								

	30	,471	,637						
	31	,527	,665						
	32	,639	,745						
Unrelenting standards	37				,725	,558			
	38				,696	,615			
	39				,825	,720			
	43				,570	,526			
Insufficient self-control	47						,776	,614	
	48						,875	,899	
	49						,948	,782	
	50						,740	,442	
	51						,731	,763	
Pessimism	57	,728	,644						
	58	,464	,341						
	59	,410	,531						
Emotional Inhibition	60		,425		,718	,541			
	61				,721	,744			
	62				,751	,751			
	64			-,450	,408	,730			-,433
Self-punitiveness	65	,893	,736						
	66	,770	,792						
	67	,948	,846						
	68	,810	,625						

Note. * Revised items, M = Mother, F = Father.