

Masterthesis

Positive Psychology and Technology

**Schema modes and patient
characteristics as predictors of
treatment outcome in a Schema
therapy-based treatment for
inpatients with personality disorders**

Selena Marissink

S1483730

University of Twente

Supervisor 1: Gerben Westerhof

Supervisor 2: Gert-Jan Prosman

External supervisor: Karin Timmerman

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Samenvatting

Inleiding Persoonlijkheidsstoornissen komen vaak voor en zijn duur voor de samenleving, hierom is de juiste behandeling belangrijk. Schematherapie is een effectieve behandeling voor persoonlijkheidsstoornissen gebleken. Er is echter weinig bekend over welke patiëntkenmerken en schemamodi voorspellend zijn voor de uitkomst van behandeling. Het doel van dit onderzoek is om hier meer informatie over te verkrijgen zodat de behandeling nog effectiever kan worden. In dit onderzoek is het resultaat van behandeling gebaseerd op de twee dimensies van geestelijke gezondheid: welbevinden en psychopathologie. *Methode* De steekproef bestond uit 146 patiënten van Mediant de Boerhaven, een expertisecentrum voor personen met persoonlijkheidsstoornissen. Er werd een within-subjects design studie uitgevoerd zonder controlegroep. Metingen vonden plaats aan het begin van de behandeling en aan het einde van de behandeling. Patiënten die vroegtijdig de behandeling verlieten ($N = 51$), hadden wel de mogelijkheid om de metingen in te vullen. De Schema Mode Inventory (SMI-1), de Brief Symptom Inventory (BSI) en de Mental Health Continuum-Short-Form (MHC-SF) werden uitgevoerd. De SMI-1 werd gebruikt om de schemamodi te meten, de BSI werd gebruikt om symptomen van psychopathologie te meten en de MHC-SF werd gebruikt om de het welbevinden te meten. Beschrijvende analyse, Pearson's r , gepaarde t -toets en stapsgewijze meervoudige regressieanalyse werden gebruikt om te beoordelen of er een verband is tussen de pre-meting en de post-meting en of er variabelen zijn die de uitkomst van behandeling voorspellen. *Resultaten* Het voltooien van de behandeling voorspelde significant meer welbevinden en minder symptomen aan het einde van de behandeling, de Onthechte Beschermers gemeten aan het begin van de behandeling en een langere behandelingsduur voorspelden minder welbevinden en meer symptomen aan het einde van de behandeling. Het Razende Kind voorspelde minder welbevinden, terwijl het Kwetsbare kind en meer welbevinden aan het begin van de behandeling meer welbevinden aan het einde van de behandeling voorspelden. De Bestraffende ouder en meer symptomen aan het begin van de behandeling waren voorspellers voor meer symptomen aan het einde van de behandeling. *Discussie* Onderzoek toont aan dat het Kwetsbare kind een belangrijke rol speelt in de schematherapeutische behandeling en dat specifieke disfunctionele modi het moeilijker maken om het Kwetsbare kind te behandelen. Door de voorspellende disfunctionele modi in een vroeg stadium te behandelen, kan de behandeling zich eerder op het Kwetsbare Kind richten. Dit kan leiden tot betere behandelresultaten. Dit onderzoek bevestigt het idee dat welbevinden en psychopathologie twee verschillende, maar gerelateerde aspecten van de geestelijke gezondheid zijn. Daarom moeten modi die welzijn of psychopathologie voorspellen beiden vroegtijdig aandacht krijgen.

Abstract

Background Personality disorders are common and is expensive for society, so it is important to find the right treatment for these patients. Schema therapy has proven to be an effective treatment. However, little is known about which characteristics and schema modes are predictive for the outcome of treatment. The aim of this research is to obtain more information about this so that the treatment can be made even more effective. The outcome of treatment is based on the two dimensions of mental health: Wellbeing and psychopathology. *Method* The sample consisted of 146 inpatients of Mediant de Boerhaven, an expertise center for persons with personality disorders. A within-subject design study without a control group was conducted. Measurements took place at the start of treatment and the end of treatment. Patients who dropped out (N = 51), still had the opportunity to fill in the measurements. The Schema Mode Inventory (SMI-1), the Brief Symptom Inventory (BSI), and the Mental Health Continuum-Short-Form (MHC-SF) were conducted. The SMI-1 was used to measure the schema modes, the BSI was used to determine the experience of symptoms of psychopathology, and the MHC-SF was used to measure the experience of wellbeing. Descriptive analysis, Pearson's r, paired t-test, and stepwise multiple regression analysis were used to assess if there is a relationship between the pre-measurement and the post-measurement and whether there are predictive characteristics for the outcome of treatment. *Results* Accomplishment of treatment significantly predicted more wellbeing and fewer symptoms at the end of treatment, the Detached Protector measured at the start of treatment, and a longer duration of treatment predicted less wellbeing and more symptoms at the end of treatment. The Enraged Child predicted less wellbeing, whereas the Vulnerable Child and more wellbeing at the start of treatment predicted more wellbeing at the end of treatment. The Punitive Parent and more symptoms at the start of treatment were predictors for more symptoms at the end of treatment. *Discussion* Research shows that the Vulnerable Child is an important and large part in the treatment of schema therapy. This research found that specific dysfunctional modes make it more difficult to treat the Vulnerable Child. Treating the predictive dysfunctional modes at an early stage can ensure that treatment can focus on the Vulnerable Child earlier. This can lead to better treatment results. This research agrees that wellbeing and psychopathology are two different, but related aspects of mental health. Therefore, the modes that predict wellbeing and psychopathology should both be a focus in treatment.

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Introduction

Personality disorders are a common mental disorder and often lead to high costs (Feenstra & Hutsebaut, 2014; Verheul, 2003). Fortunately, it has turned out that a personality disorder is treatable, and it does not have to be permanent (Verheul, 2009). Schema therapy is found to be very effective in treating personality disorders, and the schema mode model is mostly used in the treatment of complex personality disorders (Jacob & Arntz, 2013; Wolterink & Westerhof, 2018). Wellbeing and psychopathology are two very important dimensions of mental health, and research showed that schema therapy influenced wellbeing and psychopathology positively at the end of treatment (Dickhaut & Arntz, 2014; Wolterink & Westerhof, 2018). This research aims to explore this relationship even further and to determine if there are patient characteristics, coping responses, and emotional states measured at the start of treatment that predict the later outcome of a schema therapy-based treatment.

Mental health is an important term in mental care. Previously this term was used for the absence of psychopathologies, also called mental illness. But not only the absence of mental illness plays a part in mental health (Westerhof & Keyes, 2010). It is also important to consider the experienced wellbeing of a person. So, the World Health Organization (WHO) gave mental health a new definition: “a state of wellbeing in which the individual realizes his or her own abilities, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to his or her community” (World Health Organization, 2018). Emotional wellbeing, psychological wellbeing, and social wellbeing are identified as three components of mental health. Emotional wellbeing is about satisfaction and interest in life. Psychological wellbeing is about being good at managing daily life responsibilities, having good relationships, and being satisfied with most parts of one’s personality and life. Lastly, social wellbeing means that someone feels part of the community, believes that society is a good place and that it makes sense how society works (Galderisi, Heinz, Kastrup, Beezhold, & Sartorius, 2015).

As stated in the two continua model wellbeing and psychopathology were found to be two separate, but related dimensions of the mental health of a person (Westerhof & Keyes, 2010). Before, wellbeing and psychopathology were assumed to be extremes of one dimension. This means that people without mental complaints naturally would have high wellbeing, and persons with mental complaints would have low wellbeing. Nowadays, we know that measuring psychopathology is not enough to assess mental health (Keyes, 2005). Additionally, research has shown that changes in wellbeing predict psychological complaints, and that wellbeing is a protecting factor for psychopathology. This makes it important that therapies not only focus on

psychological disorders, but also on wellbeing (Bohlmeijer, Bolier, Steeneveld, Westerhof, & Walburg, 2013).

Personality disorders, with a prevalence of 10-15% in the general population, are common mental disorders (Verheul, 2003). In the past personality disorders were seen as stable and persistent conditions, from early adolescence to at least far in adulthood. This vision changed when it appeared that both genetic and environmental factors influence personality traits and disorders and that environmental factors and learning experiences could influence behavior and thinking processes. Verheul (2009) mentions that research into the changeability of personality disorders showed that recovery was possible and that even without treatment some cases showed natural recovery. This knowledge has contributed to the vision that personality traits and disorders are changeable, and that different kinds of therapies are effective in treating personality disorders (Verheul, 2009). Personality disorders often lead to a reduced quality of life and it also entails high costs, such as inpatient care, outpatient care, and absenteeism (Feenstra & Hutsebaut, 2014). It also appears that personality disorders entail higher costs than generalized anxiety disorders or depression (Soeteman, Roijen, Verheul, & Busschbach, 2008). This is one of the reasons that effective treatment for personality disorders is important.

Research has shown that schema therapy can significantly reduce psychopathology and can strongly improve wellbeing (Dickhaut & Arntz, 2014; van Oosterhout, 2014; Wolterink & Westerhof, 2018). Schema therapy aims to make a change on cognitive, emotional, and behavioral level. This change can result in the patient being able to take good care of themselves and being able to maintain a relationship and deal with life tasks. Schema therapy is developed by Young as an integrative cognitive behavioral therapy and a popular treatment for personality disorders, based on the idea that original cognitive behavioral therapy was not efficient enough for chronic problematics with roots in childhood (Arntz, 2016). Young stated that (personality) psychopathology was the result of dysfunctional/maladaptive schema's, developed in early childhood (Young, Klosko, & Weishaar, 2003). Schemas are early childhood experiences that are saved in a non-verbal way, based on emotions, actions, sensory perceptions, and the meaning given to them. These schemas are used by people to organize, interpret, and predict the world to understand the behavior of others and situations even better. When experiencing personality problems, people have developed dysfunctional schemas. These dysfunctional schemas result in coping with life in a less adequate way (van Vreeswijk, Broersen, & Nadort, 2008). These dysfunctional schemas are developed in childhood as a result of temperament, parenting style and (traumatic) experiences (Young et al., 2003).

Another important aspect in schema therapy are the schema modes. The schema mode model is developed for persons with more complex personality problems (Wolterink & Westerhof, 2018; Young et al., 2003). Modes are described as certain coping responses and emotional states, these coping responses and predominant emotional states can be triggered by situations to which a person is hypersensitive. These schema modes are developed to explain the changes in thoughts, feelings and behavior shown by patients with severe personality disorders (Lobbestael, Van Vreeswijk, & Arntz, 2008). Everyone has modes (and schemas), but the mental healthier a person the less dominant the dysfunctional modes (van Vreeswijk et al., 2008). The aim of Schema therapy is to find a way to deal more adequately with the triggers of schemas and modes, and to less automatic react with a particular coping style on these triggers (van Vreeswijk, Broersen, & Schurink, 2009). To achieve this, the patient is taught to use a healthy mode instead of a dysfunctional mode (Monique Hulsbergen et al., 2015). In schema therapy it is important to work with the functional and dysfunctional modes. To help the patient to heal from the dysfunctional modes, so that the patient will be able to apply the functional modes instead of the dysfunctional modes (Young, Klosko, & Weishaar, 2005). There are 14 modes, divided into four categories: dysfunctional child modes, dysfunctional coping-modes, dysfunctional parent modes and the functional modes. The functional modes are also called the healthy modes (Lobbestael et al., 2008; Rijckmans, 2020). The dysfunctional child modes are the outcome of unmet core childhood needs and may result in thinking, feeling, and acting in a childish way (Lobbestael et al., 2008; Wolterink & Westerhof, 2018). The child modes are important, especially the Vulnerable Child mode. The Vulnerable Child mode is seen as the core mode of schema therapy, as the focus is largely on the unmet emotional needs causing certain schemas. These schemas are mostly related to the Vulnerable Child. Additionally, The Vulnerable makes it difficult to comfort and stabilize themselves, that is why the practitioner focuses on this so that the patient can meet the unmet needs through reassurance, soothing, and validation (Bach, Lockwood, & Young, 2017). The dysfunctional coping modes are reflecting the overuse of the fight, flight, or freeze coping styles trying to protect themselves from pain. The dysfunctional parent modes are the result of the internalization of the way the parent behaves towards the child, often in a critical or demanding way what may cause feelings of self-hate and pressure. The last category reflects the healthy modes, the Healthy Adult mode shows the ability to reflect adaptive thoughts, behaviors, and feelings and helps in the protection and development of the Vulnerable Child (Lobbestael et al., 2008; van Vreeswijk et al., 2008).

The Happy Child shows the ability to be playful and spontaneous (Lobbestael et al., 2008; Wolterink & Westerhof, 2018). An overview of the categories and an explanation of the modes can be found in Table 1.

Table 1
Modes divided into categories

Category	Mode	Description
Dysfunctional child modes	Vulnerable Child	Feels scared, sad, hopeless, and overwhelmed. The child needs the help of a parent or adult but is not met in the needed care. ^a
	Angry Child	Feels angry, frustrated, or impatient because the basic child needs, emotional or physical, are not met. Suppressed anger is ventilated in inappropriate, spoiled, and demanding ways. ^b
	Enraged Child	Feels intense, out-of-control anger, that results in damaging or hurting people or objects as an enraged or uncontrollable acting out child. The goal is to, sometimes literally, destroy the aggressor. ^b
	Impulsive Child	Behaves impulsive to be met in needs in a short period, without regard to possible consequences for the self or others. Can appear spoiled, lazy, and impatient. ^a
	Undisciplined Child	Feels easily frustrated and gives up quickly. Not able to force him/herself to complete boring or routine tasks. ^b
Dysfunctional parent modes	Punitive Parent	Behaves punitive, criticizing, or limiting towards themselves or others, when having or showing normal needs, but which was not allowed to express by the parent. Mostly experienced by an internalizing, critical, punishing voice of the parent. ^{a b}
	Demanding Parent	Feels that he/she needs to be perfect, and that being spontaneous or express emotions is wrong. Puts a lot of pressure on oneself and possibly others because they must meet the unrealistic high standards of the parent. ^a
Dysfunctional coping modes	Compliant Surrenderer	Behaves passive, helpless, and dependent. Are obedient towards the other, and may allow others to treat them badly, to maintain the relationship. ^a
	Detached Protector	Feels empty, numb, and depersonalized, might distance themselves from feelings and others. May behave cynical, pessimistic, and functions almost in a robotic way. ^b
	Detached Self-soother	Behaves in such a way that he/she does not have to experience negative feelings. Mostly, by showing self-soothing or self-stimulating behavior. ^b
	Self-aggrandizer	Behaves competitive, grandiose, or in a status-seeking way to compensate for the inferior feeling that they experience. They are mainly concerned with their own feelings and needs and not with those of others. ^a
	Bully and Attack	Behavior is controlled and strategic to overcompensate abuse or prevent humiliation, in an emotionally, physically, sexually, verbally, antisocial or criminal way. ^b
Healthy modes	Happy Child	Feels loved, happy, protected, and optimistic, and can behave spontaneously and unstrained because core emotional needs are met. ^b

Healthy Adult	Behaves in a healthy, mature manner that is good for him/herself. Besides, it nurtures and sets limits for the dysfunctional Child modes, promotes the Healthy Child mode, combat and replaces the dysfunctional coping modes, and neutralizes the Parent modes. ^c
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Note. ^a Young et al. (2003), ^b Lobbestael, van Vreeswijk, & Arntz (2007), ^c Martin & Young (2010).

Research has shown that schema therapy is an effective outpatient treatment for several personality disorders, such as borderline cluster c, narcissistic and paranoid personality disorders. Schema therapy is also proven effective among forensic inpatients with antisocial behavior (Arntz, 2016; van Wijk-Herbrink, 2018). Additionally, schema therapy was found to be superior to other borderline personality treatments (Arntz, 2016). For patients who did not benefit from outpatient treatment, there is schema therapy in a clinical setting. During inpatient treatment, the focus is mainly on the modes. Studies among inpatient treatment have shown that patient's dysfunctional modes and psychopathology are significantly decreased, and that functional modes are increased during treatment (Wolterink & Westerhof, 2018). Further research in inpatient settings based on schema therapy found that functional modes are predictors of wellbeing (Nonnekes, 2016). Specifically, the Healthy Adult and the Self-aggrandizer were found to predict global and social-occupational functioning in long term. Furthermore, the Healthy Adult, the Vulnerable Child, the Impulsive Child, and the Avoidant Protector were found as predictors of later personality pathology (Yakin, Grasman, & Arntz, 2020). About the course of recovery Wächtler (2020) found that the most gradual course of recovery was observed in patients with higher levels of wellbeing at the start of treatment.

Besides using modes and wellbeing as a predictor of treatment outcome, it may be interesting to look at other potential characteristics as a predictor of treatment outcome. For example, it appears that participants who correspond to a lesser extent with the group are less satisfied, benefit less, and experience more negative consequences from group treatment (Yalom & Leszcz, 2005). In clinical settings, men with personality disorders are in the minority compared to women (van Oosterhout, 2014; Wolterink & Westerhof, 2018). It can be interesting to investigate if being in the minority, as in gender or age, is a predictor for the outcome of treatment. Additionally, Wolterink & Westerhof (2018) found that participants who dropped out during a clinical schema therapy-based treatment did not differ from other patients in their characteristics measured at the baseline. However, it is interesting to investigate if accomplishing treatment affects the outcome of the treatment, or maybe the duration of treatment does. Wächtler (2020) found that wellbeing is a predictor of the outcome of treatment. This may also be the case for psychopathology. Not only the predictive characteristics are

interesting, but also the outcome of the treatment of schema therapy is interesting. A few studies have investigated the outcome based on wellbeing, psychopathology, or functioning. However, now that we know that mental health is based on mental illness and wellbeing, it is also interesting to find out how potential predictive factors affect both dimensions. According to the two continua model, psychopathology and wellbeing are two separate, but related dimensions (Westerhof & Keyes, 2010). Therefore, it may be that psychopathology has other predictors than wellbeing. For example, reducing dysfunctional modes may contribute to the reduction of symptoms, while strengthening functional modes may contribute to wellbeing. Knowing more about influencing factors may help clinicians to adjust the therapy to the individual and to improve treatment response (Carter et al., 2018).

This leads to the aim of this research; to explore which characteristics and modes of inpatients measured at the start of treatment may predict treatment outcome of a schema therapy-based treatment for persons with personality disorders.

Research questions:

1. To what extent are patient characteristics of inpatients with personality disorders predicting the experience of wellbeing at the end of a schema therapy-based treatment?
2. To what extent are modes measured at the start of treatment predicting the experience of wellbeing at the end of a schema therapy-based treatment for inpatients with severe personality problems?
3. To what extent are patient characteristics of inpatients with personality disorders predicting the experience of symptoms of psychopathology at the end of a schema therapy-based treatment?
4. To what extent are modes measured at the start of treatment predicting the experience of symptoms of psychopathology at the end of a schema therapy-based treatment for inpatients with severe personality problems?

Method

Design

This research is a within-subject design research, based on larger research conducted among patients with personality disorders within the clinical setting of Mediant de Boerhaven. The original research was developed by Schaap, Chakhssi, and Westerhof (2016) to explore changes in schema modes and symptoms throughout treatment and exploring this relationship. The data is collected between 2012 and 2020 at different moments in the treatment of a patient: pre-measurement, intermediate, post-measurement, 6-month follow-up, and long-term follow-up measurement. This research uses the pre-measurement and post-measurement data collected between 2012 and 2018. The data will be used to explore which characteristics and modes of the patient may predict treatment outcome.

Setting

Mediant de Boerhaven, an expertise center for personality disorders, is one of the clinics that use schema therapy as a base for their clinical psychotherapy. The treatment of Mediant de Boerhaven is designed for one year, but it is possible to ask for an extension or early completion. The patients will sleep in the clinic from Sunday till Friday, and on the weekends they go to their own places. The clinic has room for 27 patients, the whole group together is called the living group. The living group is divided into three subgroups with a maximum of nine patients. In these subgroups, the patients receive group therapy and do household chores. This treatment offers different forms of therapy, such as group psychotherapy, drama therapy, art therapy, psychomotor therapy, and pharmacotherapy. Additionally, patients can choose to follow specific modules. The content of these modules varies, the focus can be on different themes, such as trauma, the Healthy Adult, and self-expression.

This treatment is based on schema therapy, the treatment follows the same phases as the individual schema therapy described by Young. These phases are the diagnostic phase, before treatment, in which the schemas, modes, dysfunctional coping styles, and the early childhood origin are identified. Followed by a case conceptualization, which is used in the first phase, also called the connecting and emotion-regulation phase. The second phase is the change phase, the focus is on changing schemas and modes by using experiential, cognitive, and behavior interventions. The last phase is the autonomy phase, a phase that stimulates to let go of destructive relations, and to develop more autonomy (Wolterink & Westerhof, 2018).

Participants

Patients of de Boerhaven are experiencing forms of personality pathology and this is influencing their daily lives in such a way that they can not function properly. Treatment admission criteria are IQ larger than 80, no acute suicidality, and outpatient treatment proved unsuccessful. Data is collected to gain more research insight and to give insight into the developments of the patient. Of the 222 admissions that took place between 2012 and 2018, twelve patients did not want to cooperate with research. This results in a database of 210 participants. Participants who filled in the BSI, the MHC-SF, or the SMI-1 on the pre-measurement or the post-measurement or both will be included in this research. Participants who did not fill in the BSI, the MHC-SF, or the SMI-1 on the pre-measurement or the post-measurement are excluded from this research, and this data will not be used for the statistical analysis. This resulted in a sample of 146 participants.

Of the 146 participants, 111 were female and 35 were male. The average age of admission is 27,08 years old (SD = 6,81): The youngest participant was 17,73 and the oldest participant was 43,91. The average length of stay was 40,70 weeks (SD = 19,25). 95 Participants accomplished their treatment. 55 Followed one-year treatment, 26 participants had an extension and 14 participants completed treatment early. 51 Participants did not accomplish the treatment, also called dropouts. Even though a patient did not accomplish their treatment, they had the opportunity to fill in the post-measurement.

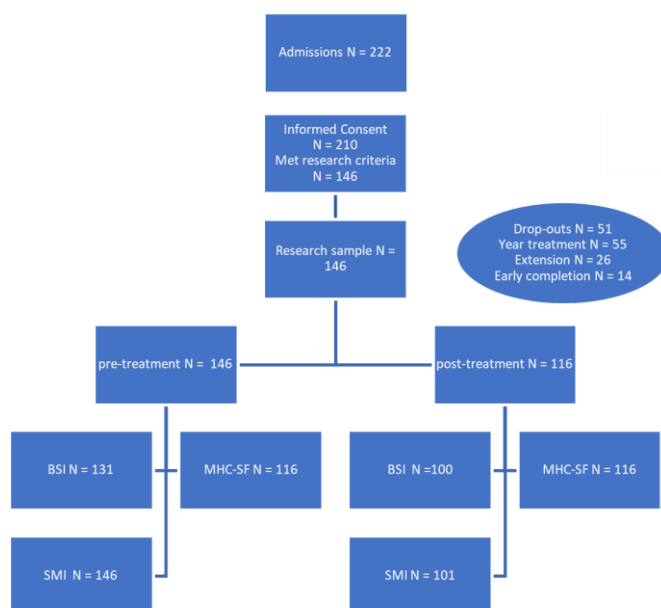


Figure 1. Sample size and completed questionnaires

Procedure

The first measurement moment takes place just before the treatment or in the first week of the start of the treatment, this is part of the intake phase of treatment. This measurement moment is also called the pre-measurement. Patients receive information about the research via an information folder and are asked to fill in an informed consent in which they are asked to give their permission for participating in research. Patients will fill in some questionnaires on paper and online and will receive a psychological rapport of the results. This will be explained after each measurement by the psychology interns. In the last weeks of treatment, patients will fill in their end measurement, also called the post-measurement. The post-measurement is seen as the outcome of the treatment. Clients who drop-out are also asked to fill in the post-measurement. Administration and elaboration of the questionnaires are done by psychology interns.

Materials

The participants have filled in several questionnaires at the start of treatment and at the end of treatment. The materials used in this research are the BSI, the MHC-SF, and the SMI-1. These questionnaires were used in the pre-measurement and the post-measurement. The MHC-SF and the SMI-1 are conducted on paper, and the BSI is conducted via the Routine Outcome Measurement (ROM).

BSI stands for Brief Symptom Inventory. The BSI is developed with 53-items as a shorter alternative for the SCL-90-R and is a psychological self-report symptom scale. The BSI is applicable in a wide variety of settings to assess the psychological symptom status of non-psychiatric, psychiatric, and medical patients (Derogatis & Melisaratos, 1983). This questionnaire contains questions about problems that some people might have. The questions are about how much a specific problem has distressed the respondent during the last seven days. For example, how much was the respondent distressed by: “Feeling easily annoyed or irritated”. The response varies on a five-point Likert scale from ‘Not at all’ to ‘Extremely’ (Derogatis, 1993). The 53 items are categorized into nine dimensions: Somatization, Obsessive-Compulsive, Interpersonal Sensitivity, Depression, Anxiety, Hostility, Phobic Anxiety, Paranoid Ideation, and Psychoticism (Boulet & Boss, 1991). A new variable with the sum of all symptoms measured at one moment in time is made. This scale is used in this research to measure the experience of symptoms of psychopathology. The BSI is seen as a reliable instrument, with high Cronbach’s alpha scores varying between .73 and .81, with exception of the subscale psychoticism ($\alpha = .59$) and phobic anxiety ($\alpha = .67$) (Lamers, Westerhof, Bohlmeijer, Ten Klooster, & Keyes, 2011). Besides, the BSI is seen as an instrument with a

good convergent and construct validity (Derogatis & Melisaratos, 1983).

MHC-SF stands for Mental Health Continuum-Short Form. This questionnaire is a self-report questionnaire for the assessment of positive mental health. This questionnaire involves 14 items about aspects of wellbeing experienced in the last month. Items such as “How often did you feel that you liked most parts of your personality?” can be answered on a six-point Likert scale with answers varying between “Never” till “Every day” (Lamers et al., 2011). The MHC-SF is developed to not only focus on the emotional aspects, but also on psychological and social functioning. The results of this questionnaire can be categorized into three dimensions, emotional wellbeing, social wellbeing, and psychological wellbeing. Additionally, this questionnaire has an overarching scale that measures the total experienced wellbeing. This scale is the positive mental health scale (Lamers et al., 2011). The positive mental health scale is used in this research to measure the experience of wellbeing. Research has shown that the MHC-SF has good convergent and discriminant validity and high internal and moderate test-retest reliability (Lamers et al., 2011).

SMI-1 stands for the Schema Mode Inventory. This questionnaire is developed to measure the presence of schema modes in patients with personality disorders. This questionnaire involves 124 items and results in 14 different modes. These modes are the Vulnerable Child, Angry Child, Enraged Child, Impulsive Child, Undisciplined Child, Happy Child, Compliant Surrenderer, Detached Protector, Detached Self-soother, Self-aggrandizer, Bully and Attack, Punitive Parent, Demanding Parent and the Healthy Adult (Lobbestael, van Vreeswijk, Spinhoven, Schouten, & Arntz, 2010). Items such as “I feel loved and accepted” can be answered on a six-point Likert scale with answers varying between “Never or almost never” and “Always”. The SMI-1 was found to have an acceptable internal consistency, with Cronbach’s alpha from .79 to .96. Additionally, the SMI-1 has adequate test-retest reliability and moderate construct validity (Lobbestael et al., 2010).

Out of these participants, 131 Participants filled in the BSI pre-measurement, and 100 the BSI post-measurement. For the MHC-SF, 116 filled in the pre-measurement and 106 filled in the post-measurement. All the participants filled in the SMI-1 pre-measurement, and 101 the SMI-1 post-measurement.

Data analysis

For the data analysis the statistical program IBM SPSS statistics 25 was used. Descriptive analysis is performed to obtain an overview of the characteristics of the participants.

Preliminary analysis was conducted to get a first impression of the data and to assess

whether there is a correlation between pre-treatment and post-treatment. The pre-treatment is based on patient characteristics, modes, wellbeing, and symptoms of psychopathology measured at the pre-measurement. The post-treatment is based on wellbeing and symptoms of psychopathology measured at the post-measurement. The patient characteristics are gender, age, accomplishment treatment, duration treatment, experienced symptoms of psychopathology, and positive mental health. For the measurement of symptoms of psychopathology, use was made of the sum of all symptoms variable of the BSI. For measuring wellbeing use was made of the positive mental health scale of the MHC-SF. Pearson's r was used to determine the relationship between the pre- and post-measurement. Pearson's r is a statistical measure that shows to what extent there is a linear relationship between the scores at the start of treatment and the end of treatment. Additionally, Pearson's r shows how strong this relationship is (Baarda, de Goede, & van Dijkum, 2010). The Paired t -test was used to assess if a significant difference can be found between the pre- and post-measurement.

The next step was determining whether the patient characteristics and the modes are a predictor of the outcome of treatment. To determine the predictors the stepwise multivariate regression analysis was run four times. This analysis makes it possible to assess if the outcome of treatment, based on positive mental health and symptoms, can be predicted by patient characteristics and modes. Firstly, the stepwise multivariate regression analysis was run to determine if the patient characteristics measured at the pre-measurement are a predictor of the experienced positive mental health at the post-measurement. Secondly, the stepwise multivariate regression analysis was run to determine if the modes experienced at the pre-measurement are a predictor of the experienced positive mental health at the post-measurement. In both analyses, the experienced positive mental health pre-measurement was added. Thirdly, the stepwise multivariate regression analysis was run to determine if the patient characteristics measured at the pre-measurement are a predictor of the experienced symptoms at the post-measurement. Lastly, the stepwise multivariate regression analysis was run to determine if the modes experienced at the pre-measurement are a predictor of the experienced symptoms at the post-measurement. In both analyses, the experienced symptoms at the pre-measurement were added to the analysis. For each of the four stepwise multivariate regression analyses, $\leq .05$ was used as criteria to enter, and $> .10$ was used as criteria to remove.

Results

Frequencies of positive mental health, symptoms of psychopathology, and modes at the pre-measurement and post-measurement

Descriptive statistics were used to gain some information about the symptoms, positive mental health, and the modes of the participants measured at the start of treatment and the end of treatment. The descriptive statistics are presented in Table 2.

Looking at the pre-measurement, the following modes are the three most often experienced modes by the participants: the Vulnerable Child, the Demanding Parent, and the Healthy Adult. The three least experienced modes are the Detached Self-soother, the Enraged Child, and the Bully and Attack mode. The male participants ($M = 84,53$, $SD = 29,96$) and the female participants ($M = 96,18$, $SD = 33,07$) scored very high on the total symptoms measured at the pre-measurement, compared to a sample of the Dutch population (de Beurs, 2011). Compared to the Dutch population the participants experienced a low degree of total positive mental health ($M = 1,44$, $SD = 0,66$) at the pre-measurement (de Beurs, 2011).

In the post-measurement, the following modes are the three most often experienced modes: the Healthy Adult, the Happy Child, and the Demanding Parent. The three least experienced modes are still the Detached Self-soother, the Enraged Child, and the Bully and Attack mode. Compared to the norm score of a sample of the Dutch population, male participants ($M = 54,40$, $SD = 29,87$) and female participants ($M = 64,70$, $SD = 43,60$) both score high on the total symptoms measured at the post-measurement (Lamers et al., 2011). Compared to the Dutch population the participants experienced a below-average degree of total positive mental health ($M = 2,49$, $SD = 1,14$) at the post-measurement (Lamers et al., 2011).

Descriptive statistics were used to gain some information about the symptoms, positive mental health, and the modes of the participants measured at the pre-measurement and the post-measurement. A paired T-test is conducted to assess if the changes are significant. The results show that the symptoms measured at the end of treatment ($M = 61,61$, $SD = 40,11$) are lower than the symptoms measured at the beginning of treatment ($M = 93,36$, $SD = 31,99$). This difference is significant ($p < .001$) and shows a decrease of 34%. The experienced positive mental health is higher at the end of treatment ($M = 2,49$, $SD = 1,14$), than at the start of treatment ($M = 1,44$, $SD = 0,66$). The difference is significant ($P < .001$) and shows an increase of 73%. The modes are showing that the dysfunctional modes are significantly decreasing and that the healthy modes are significantly increasing.

Table 2

Descriptive statistics pre- and post-measurement

	Pre-measurement M (SD)	Post-measurement M (SD)	Difference pre- measurement and post-measurement
Positive mental health	1,44 (0,66)	2,49 (1,14)	1,05**
Symptoms Males	84,53 (26,96)	54,40 (29,87)	30,13**
Females	96,18 (33,07)	64,70 (43,60)	31,48**
Both	93,36 (31,99)	61,61 (40,11)	31,75**
Vulnerable Child	39,36 (7,93)	29,93 (11,44)	9,43**
Angry Child	30,26 (9,23)	26,27 (9,50)	3,99**
Enraged Child	17,14 (6,62)	14,89 (7,01)	2,25**
Impulsive Child	23,69 (8,03)	20,17 (7,46)	3,52**
Undisciplined Child	19,71 (4,90)	17,10 (5,64)	2,61**
Happy Child	25,03 (5,58)	33,56 (9,40)	8,53**
Compliant Surrenderer	26,38 (5,89)	20,74 (6,69)	5,64**
Detached Protector	29,53 (7,62)	24,06 (10,47)	5,47**
Detached Self-soother	15,04 (3,76)	11,59 (4,38)	3,45**
Self-aggrandizer	25,19 (7,72)	22,27 (6,83)	2,92**
Bully and Attack	17,19 (6,15)	15,26 (6,49)	1,93*
Punitive Parent	30,74 (9,64)	24,89 (12,04)	5,85**
Demanding Parent	38,66 (9,45)	33,27 (9,15)	5,39**
Healthy Adult	33,79 (6,05)	39,06 (7,56)	5,27**

Note. ** = Correlation is significant at the 0.01 level (2-tailed)

* = Correlation is significant at the 0.05 level (2-tailed)

The relationship between patient characteristics, modes, symptoms of psychopathology, and positive mental health pre-measurement and the positive mental health and symptoms of psychopathology post-measurement

Pearson's r was run to gain some information about the relationship between the characteristics of the participants and the outcome of treatment. The results can be found in Table 3 and show that accomplishment of treatment results in more positive mental health and fewer symptoms at the post-measurement. Additionally, experiencing more positive mental health at pre-measurement is related to more positive mental health at the post-measurement. The same was

found in the symptoms. Experiencing more symptoms at pre-measurement is related to experiencing more symptoms at the post-measurement. Specific modes experienced at the pre-measurement are related to the post-measurement. The Happy Child and the Detached Protector experienced at pre-measurement is positively related to positive mental health experienced at the post-measurement. Additionally, the Enraged Child experienced at pre-measurement is negatively related to the positive mental health at the post-measurement. At the same time, the Vulnerable Child, the Detached Protector, the Punitive Parent, and the Demanding Parent experienced at pre-measurement shows a positive correlation with the symptoms experienced at the post-measurement. Meaning that higher levels of these modes measured at the pre-measurement are correlated to more symptoms measured at the post-measurement. The Happy Child shows a negative correlation with the symptoms measured at the post-measurement, meaning that higher levels of the Happy Child at the pre-measurement correlates with more symptoms at the post-measurement.

Table 3

Correlation of the patient characteristics and the modes at the pre-measurement compared to the positive mental health and symptoms at the end of treatment

	Positive mental health post-measurement	Symptoms post- measurement
Gender	-.065	-.118
Age	-.079	-.110
Accomplishment treatment	.326**	-.312**
Duration treatment in weeks	.006	-.029
Positive mental health pre-measurement	.330**	-.180
Symptoms pre-measurement	-.097	.392**
Vulnerable Child pre-measurement	-.005	.308**
Angry Child pre-measurement	-.045	.170
Enraged Child pre-measurement	-.223*	.187
Impulsive Child pre-measurement	-.133	.077
Undisciplined Child pre-measurement	-.163	.164
Happy Child pre-measurement	.209*	-.315**
Compliant Surrenderer pre-measurement	.032	.132
Detached Protector pre-measurement	-.332**	.307**

Detached Self-soother pre-measurement	.023	.082
Self-aggrandizer pre-measurement	.136	.036
Bully and Attack pre-measurement	-.110	.105
Punitive Parent pre-measurement	-.113	.429**
Demanding Parent pre-measurement	.036	.232*
Healthy Adult pre-measurement	.091	-.126

Note. ** = Correlation is significant at the 0.01 level (2-tailed)
* = Correlation is significant at the 0.05 level (2-tailed)

Patient characteristics as predictors of wellbeing

A stepwise multiple regression analysis was used to answer the first research question and to predict the experience of wellbeing at the end of treatment. This is based on the following patient characteristics: Gender, age, accomplishment treatment, duration treatment, positive mental health, and symptoms measured at the pre-measurement (see Table 4). Firstly, the experienced positive mental health at the post-measurement is predicted by the experienced positive mental health at the start of treatment. This resulted in a correlation of .371 ($p < 0.01$). In model 2 the accomplishment of treatment was added to the model. This resulted in a multiple correlation of .451 ($p < 0.01$). The last significant predictor added to the model is the duration of the treatment, adding this variable resulted in a multiple correlation of .561 ($p < 0.01$). In conclusion, the experienced wellbeing at the pre-measurement, the accomplishment of treatment, and the duration of treatment is a predictor for the experienced wellbeing at the post-measurement. Wellbeing experienced at the pre-measurement and accomplishment of treatment results in more wellbeing at the post-measurement. On the other hand, the duration of treatment affects the wellbeing at the post-measurement: A longer duration of treatment is a predictor for lower wellbeing at the post-measurement. The gender, age, and the symptoms at the pre-measurement were found to be no predictors for the experienced wellbeing at the post-measurement.

Table 4

Stepwise multiple regression analysis of patient characteristics as a predictor of the experienced wellbeing at the end of treatment

Model	R	R ²	F	Sig	Unstandar dized B	SE(β)	Beta
Model 1.	.373	.139	12.147	.001	1.423	.305	

Positive mental health pre-measurement					.658	.189	.373**
Model 2.	.451	.203	9.445	.000	.840	.380	
Positive mental health pre-measurement,					.644	.183	.366**
Accomplishment treatment					.737	.302	.253*
Model 3.	.561	.315	11.165	.000	1.742	.441	
Positive mental health pre-measurement,					.623	.171	.354**
Accomplishment treatment,					1.629	.383	.559**
Duration stay in weeks					-.034	.010	-.453**

Note. ** = Correlation is significant at the 0.01 level (2-tailed),
* = Correlation is significant at the 0.05 level (2-tailed)
Dependent variable = Positive mental health post-treatment
Excluded variables: Gender, Age, Symptoms pre-treatment

Modes as predictors of wellbeing

A stepwise multiple regression analysis was used to answer the second research question and to predict the experience of wellbeing at the post-measurement based on the modes measured at the pre-measurement (see Table 5). Again, the experienced positive mental health at the pre-treatment was used to determine this relationship. This resulted in a correlation of .330 ($p < .01$). Adding the Enraged Child resulted in a multiple correlation of .390 ($p < .01$). Additionally, the Vulnerable Child was added, adding the Vulnerable Child resulted in a multiple correlation of .459 ($p < .01$). Lastly, the Detached Protector was added, this resulted in a correlation of .524 ($p < .01$). In conclusion, the Enraged Child, the Vulnerable Child, and the Detached Protector have a predictive value to the course of wellbeing: More wellbeing and the experience of the Vulnerable Child at the pre-measurement predicts more wellbeing at the post-measurement. On the other hand, experiencing the Enraged Child and the Detached Protector at the pre-measurement is a predictor for less wellbeing at the post-measurement. The other modes did not appear to have a predictive value of wellbeing at the end of treatment.

Table 5

Stepwise multiple regression analysis of modes as a predictor of the experienced wellbeing at

the end of treatment

Model	R	R ²	F	Sig	Unstandar dized B	SE(β)	Beta
Model 1.	.330	.109	10.137	.002	1.597	.276	
Positive mental health pre-measurement.					.525	.165	.330**
Model 2.	.387	.150	7.232	.001	2.131	.381	
Positive mental health pre-measurement,					.521	.162	.327**
Enraged Child					-.030	.015	-.203*
Model 3.	.459	.211	7.205	.000	.665	.694	
Positive mental health pre-measurement,					.655	.166	.441**
Enraged Child					-.044	.016	-.295**
Vulnerable Child					.038	.015	.277*
Model 4.	.524	.274	7.557	.000	1.552	.749	
Positive mental health pre-measurement,					.477	.174	.299**
Enraged Child					-.038	.015	-.259*
Vulnerable Child					.054	.016	.396**
Detached Protector					-.044	.017	-.320**

Note. ** = Correlation is significant at the 0.01 level (2-tailed)

* = Correlation is significant at the 0.05 level (2-tailed)

Dependent variable = Positive mental health post-measurement

Excluded variables: Angry Child, Undisciplined Child, Happy Child, Compliant Surrenderer, Detached Self-soother, Self-aggrandizer, Bully and Attack, Punitive Parent, Demanding Parent, Healthy Adult

Patient characteristics as predictors of symptoms of psychopathology

A stepwise multiple regression analysis was used to answer the third research question and to predict the experienced symptoms of psychopathology at the post-measurement. Based on the following patient characteristics: Gender, age, accomplishment treatment, duration treatment, positive mental health, and symptoms at the pre-measurement (see Table 6). Firstly, the experienced symptoms at the post-measurement were predicted by the experienced symptoms

at the pre-measurement. This resulted in a correlation of .409 ($p < .01$). In model 2 the accomplishment of treatment was added to the model. This resulted in a multiple correlation of .459 ($p < .01$). The last significantly predicting value added to this model is the duration of treatment in weeks, this resulted in a multiple correlation of .507 ($p < .01$). In conclusion, the experienced symptoms of psychopathology at the pre-measurement, accomplishing treatment, and the duration of treatment in weeks are predictors for the experienced symptoms of psychopathology at the post-measurement. More symptoms at the beginning of treatment, and a longer duration of treatment predicts more symptoms at the end of treatment, and accomplishing the treatment predicts fewer symptoms at the end of treatment.

Table 6

Stepwise multiple regression analysis of patient characteristics as a predictor of the experienced symptoms at the end of treatment

Model	R	R ²	F	Sig	Unstandar dized B	SE(β)	Beta
Model 1.	.409	.167	15.441	.000	11.068	13.762	
Symptoms pre- measurement.					.557	.142	.409**
Model 2.	.459	.211	10.157	.000	36.323	18.240	
Symptoms pre- measurement,					.492	.142	.361**
Accomplishment treatment.					-23.445	11.405	-.215*
Model 3.	.507	.257	8.635	.000	16.589	20.045	
Symptoms pre- measurement,					.471	.139	.346**
Accomplishment treatment,					-44.817	14.932	-.411**
Duration stay in weeks					.822	.382	.288*

Note. ** = Correlation is significant at the 0.01 level (2-tailed)

* = Correlation is significant at the 0.05 level (2-tailed)

Dependent variable = Symptoms post-measurement

Excluded variables: positive mental health pre-measurement, gender, age

Modes as predictors of symptoms of psychopathology

A stepwise multiple regression analysis was used to answer the fourth research question and to predict the experience of symptoms of psychopathology at the end of treatment based on the modes and the experienced symptoms of psychopathology at the start of treatment (see Table 7). The multiple regression analysis resulted in a correlation of .409 ($p < .01$) based on the Punitive Parent. Adding the experienced symptoms at the pre-measurement resulted in a multiple correlation of .476 ($p < .01$). Lastly, adding the Detached Protector resulted in a multiple correlation of .517 ($p < .01$). In conclusion, the Punitive Parent, the symptoms of psychopathology experienced at the beginning of treatment, and the Detached Protector are predictors of the experienced symptoms of psychopathology at the end of treatment. Experiencing higher levels of these variables at the beginning of treatment results in more symptoms of psychopathology at the end of treatment.

Table 7

Stepwise multiple regressive analysis for modes and symptoms end of treatment

Model	R	R ²	F	Sig	Unstandar dized B	SE(β)	Beta
Model 1.	.409	.167	18.466	.000	5.770	13.415	
Punitive Parent.					1.793	.417	.409**
Model 2.	.476	.227	13.327	.000	-11.061	14.475	
Punitive Parent,					1.300	.445	.297**
Symptoms pre- measurement.					.343	.130	.268**
Model 3.	.517	.267	10.944	.000	-38.669	18.788	
Punitive Parent,					1.151	.441	.262*
Symptoms pre- measurement,					.333	.127	.261**
Detached Protector.					1.078	.482	.205*

Note. ** = Correlation is significant at the 0.01 level (2-tailed)

* = Correlation is significant at the 0.05 level (2-tailed)

Dependent variable = Symptoms post-measurement

Excluded variables: Vulnerable Child, Enraged Child, Impulsive Child, Undisciplined Child, Happy Child, Compliant Surrenderer, Detached Self-soother, Self-aggrandizer, Bully and Attack, Demanding Parent, Healthy Adult.

Discussion

The aim of this research is to give insight into the relationship between different kinds of patient characteristics and modes, and the outcome of a schema therapy-based treatment. And to give insight into which characteristics and modes are a predictor for the experienced symptoms and wellbeing at the end of a clinical schema therapy-based treatment for patients with severe personality problems.

The first research question was answered with the finding that more wellbeing at the start of treatment and accomplishment of the treatment is a predictor for more wellbeing at the end of treatment and having a longer duration of treatment predicts less wellbeing at the end of treatment. The second research question was answered with the finding that - besides more wellbeing - the Vulnerable Child experienced at the start of treatment predicts more wellbeing at the end of treatment. Additionally, the Enraged Child and the Detached Protector measured at the start of treatment are predictors for less wellbeing at the end of treatment. The third research question was answered with the finding that more symptoms of psychopathology at the start of treatment, and a longer duration of treatment predicts more symptoms of psychopathology at the end of treatment. Besides, accomplishing the treatment predicts fewer symptoms of psychopathology at the end of treatment. The fourth research question was answered with the finding that - besides more symptoms of psychopathology - the Punitive Parent, and the Detached Protector experienced at the start of treatment are predictors for more symptoms of psychopathology at the end of treatment.

Now that the results are known, it is interesting to examine how these results can be explained. Patient characteristics that predict the experienced wellbeing and symptoms of psychopathology at the end of treatment are the accomplishment of treatment and duration of treatment. The accomplishment of treatment predicts more wellbeing and fewer symptoms at the end of treatment, this is not surprising as schema therapy was found to be an effective treatment that ensures reduced symptoms and better wellbeing (Wächtler, 2020; Wolterink & Westerhof, 2018). For this reason, it is not illogical to think that patients who drop-out benefit less from the effects of the treatment than patients who accomplish the treatment. The duration of treatment was found to be a predictor, a longer treatment is a predictor for lower wellbeing and more symptoms of psychopathology at the end of treatment. A possible explanation for this is that normally a year of treatment is sufficient, but it occurs that extension is requested when the patient thinks they need more help. Patients who request for extension may generally have more complex problems, with more symptoms and lower wellbeing at the start of treatment. Patients will therefore experience lower wellbeing and more symptoms at the end of treatment.

Previous research based on the same data, but with fewer participants ($N = 65$), has shown that there was a positive relationship between wellbeing measured at the start of treatment and wellbeing measured at the end of treatment (Wächtler, 2020). Another study conducted at mental health institutions found that symptoms measured at the start of treatment are an important predictor for the symptoms measured at the end of treatment (Warmerdam, Ten Have, Dekker, & de Beurs, 2016). For this reason, it was no surprise that the current research also found that wellbeing and symptoms of psychopathology measured at the start of treatment are a predictor for the experienced wellbeing and symptoms of psychopathology at the end of treatment. In the context of a schema therapy-based treatment, this might be explained due to the finding that functional modes are a predictor for wellbeing (Nonnekes, 2016). Possibly because wellbeing and functional modes have similarities, such as healthy behavior and the experience of positive emotions. People who start with higher wellbeing may already experience more functional modes, and these functional modes increase during treatment (Wolterink & Westerhof, 2018). In the treatment, attention is paid to strengthening the functional modes, for example by following the Healthy Adult module and practicing with functional modes through re-scripting and imagination (Broersen & Claassen, 2019). Because of this, it is not illogical that patients with higher functional modes at the start of treatment, end with more functional modes, and so on also experience more wellbeing. Additionally, the functional modes are also found to be related to symptoms, an increase in functional modes is related to a decrease in symptoms (Wolterink & Westerhof, 2018). This could therefore mean that patients with fewer symptoms at the start of treatment experience more functional modes and that increasing these functional modes during treatment results in fewer symptoms at the end of treatment compared to patients with more dysfunctional modes. It is possible that people with less dysfunctional modes are less bothered by the protectors or internalized parent voices and can therefore quickly start with treating their problems, which can contribute to the reduction of symptoms of psychopathology.

As mentioned before, patients who correspond to a lesser extent with the group may benefit less from group treatment (Yalom & Leszcz, 2005). In a clinical setting, the majority is male, this is why gender was considered as a predictor (van Oosterhout, 2014; Wolterink & Westerhof, 2018). It is also possible to differ from the group based on age, so age is also considered as a predictor. This research showed that age and gender are no predictors for the outcome of treatment. This might be explained by the finding that the sample shows no large deviations in terms of age. The men in this sample were in the minority, but maybe they were not the only man in their group, or they did not experience this as a burden. There may be other

patient characteristics that were present to a lesser extent, but which have not been explored. For example, having other personality problems compared to the rest of the group.

Looking at the modes the Detached Protector is the only mode that predicts both wellbeing and symptoms of psychopathology at the end of treatment. The Detached Protector is a predictor for less wellbeing and more symptoms at the end of treatment. This might be explained due to the idea that the Detached Protector blocks access to the Vulnerable Child during treatment, because experiencing the Vulnerable Child may hurt too much so the Detached Protector prevents this from happening (Arntz & Jacob, 2012a). This means that the Detached Protector may be in the way of engaging in an important part of treatment, namely treating the Vulnerable Child. The Vulnerable Child is a big part of the treatment and a predictor for the experienced wellbeing at the end of treatment: measuring the Vulnerable Child at the start of treatment is a predictor for more wellbeing at the end of treatment. A possible explanation for this is, that the Vulnerable Child is seen as the mode that contributes to change. This is done by giving the Vulnerable Child comfort, protection, and recognition by the Healthy Adult (Kellogg & Young, 2006). Also, the experiential techniques, used in schema therapy, address the Vulnerable Child and this helps the patients to process childhood memories or traumatic events. In this way dysfunctional meanings attached to these memories can be corrected (Yakin et al., 2020). Since the focus in schema therapy is mostly on the Vulnerable Child, it is not surprising that people who experience the Vulnerable Child at the beginning of the treatment, benefit more from the treatment than patients who experience the Vulnerable Child to a lesser extent and thus may experience more wellbeing at the end of the treatment.

The Enraged Child was found to be a negative predictor for the experienced wellbeing at the end of treatment. Besides, the Enraged Child was experienced less among the participants. Little research is found about how the Enraged Child correlates to the outcome of a schema therapy-based treatment. However, research based on a part of the same data as the current research found that the Enraged Child is high scored among participants who dropped-out (Timmerman, 2014). The current research found that patients who do not accomplish treatment experience less wellbeing at the end of treatment. If you link this information, it could mean that the Enraged Child is a predictor of less wellbeing because they might not accomplish treatment and thus do not fully benefit from the effects of treatment that can contribute to more wellbeing. This would also explain why the Enraged Child was scored less in the current research, this would be because there are relatively fewer dropouts. Additionally, the Enraged Child is often measured by patients with an antisocial personality disorder. Patients with an antisocial personality disorder may tend to deny negative aspects of themselves and therefore

may have less insight into their dysfunctional modes. Having less self-insight may therefore result in benefitting less from treatment (van Vreeswijk et al., 2008). This could be an additional explanation for the Enraged Child as a predictor of less wellbeing at the outcome of treatment.

Lastly, the Punitive Parent measured at the start of treatment is a predictor for more symptoms of psychopathology at the end of treatment. This might be explained by the idea that the Punitive Parent is a mode who lets the individual believe that they deserve punishment and that they are worthless (van Wijk-Herbrink, 2018). Perhaps the Punitive Parent has been so persistently in letting the patient believe that they do not deserve to change, to be treated, and to heal that this mode ensures that the problems are maintained. And therefore, might result in more symptoms at the end of treatment than patients who do not experience the Punitive Parent. Another explanation could be, that the Punitive Parents results in patients over-asking themselves (Monique Hulsbergen et al., 2015). And over-asking appears to be related to psychopathology (Didden, Collin, & Curfs, 2008). This may cause people who experience the Punitive Parent to keep pushing themselves, afraid of being punished, and will eventually result in more symptoms of psychopathology.

As mentioned before, according to the two continua model psychopathology and wellbeing are two different, but related dimensions of mental health (Westerhof & Keyes, 2010). In this research wellbeing measured at the pre-measurement does not predict the symptoms of psychopathology measured at the post-measurement and vice versa. Besides, several modes predict only wellbeing or only symptoms of psychopathology. This contributes to the idea that wellbeing and psychopathology are two different dimensions. However, the Detached protector predicts both wellbeing and psychopathology. This contributes to the idea that wellbeing and psychopathology are related. This research confirms the idea that wellbeing and psychopathology are two different but related dimensions of mental health. Alain & Verbeek (2017) assessed the relationship between (dis)functional modes and wellbeing and symptoms, conducted in the same clinical setting as this research, but with less participants ($N = 33$). This study found that psychopathology symptoms and wellbeing showed a different course during treatment and are therefore (partially) independent, and confirmed the two-continua model (Alain & Verbeek, 2017). Furthermore, little research has been done into the relationship between modes and the two-continua model.

Yakin et al. (2020) conducted similar research on schema modes as a mechanism of change in personality pathology and functioning. Results showed that the Vulnerable Child and the Healthy Adult are central to the change process, and the Vulnerable Child was found as a predictor of personality pathology. This is consistent with this study, which makes sense

because the Vulnerable Child is central in schema therapy. However, the Healthy Adult, the Impulsive Child, and the Avoidant Protector were also found as predictors of personality pathology. The Healthy Adult and the Self-aggrandizer were found as predictors of functioning. This difference may be explained by the fact that in the case of Yakin, other questionnaires were used. Yakin et al., (2020) used tests related to personality disorders, rather than symptoms. Additionally, they partly assessed mental health, but the focus is more on general functioning than on mental functioning. Not only the tests differ, but the sample also. In the study of Yakin et al., (2020) patients with antisocial, schizotypal, schizoid, or borderline personality disorders were excluded from the study. Borderline personality disorder is common personality disorder in this current research. Within borderline personality disorder, the Punitive Parent mode and the Detached Protector mode are often scored high (Arntz & Jacob, 2012b). This may have resulted in the samples having different properties, which may affect the different outcomes.

Strengths and limitations

As far as known; this study is one of the first studies that focused on predicting the outcome of treatment based on the two continua model of mental health. This is important because both psychopathology and wellbeing are important for a persons mental health (Westerhof & Keyes, 2010). It is therefore of added value that predictors of wellbeing and symptoms of psychopathology are separately examined. This provides useful information that can be used to improve mental health based on wellbeing and psychopathology. Also, existing research in schema therapy-based treatment is merely focused on dysfunctional or functional modes (Alain & Verbeek, 2017; Wächtler, 2020). The current research focused on the fourteen modes separately, in this way more specific information is collected. We now know which specific modes are a predictor for the wellbeing and symptoms of psychopathology at the end of treatment. This is important because there are subtle, but important differences between the modes (Lobbestael et al., 2010). The use of the two continua model and the specific modes makes the current research unique, the advantage of this is that new insights and knowledge have been obtained about a clinical schema therapy-based treatment of inpatients with severe personality problems. The disadvantage of the uniqueness of this research is that it is difficult to compare this research with research based on the same variables. This makes it difficult to assess which part of the results correspond with other research and which part not, and to obtain new information from this.

This research is based on a clinical setting and this has strengths and limitations. The limitation is that it is not possible to use a control group, so for this reason it is not with a

hundred percent certainty to say that the findings of this research are the results of the schema therapy-based treatment. Another limitation of conducting research in a clinical setting is that patients might not be motivated to fill in the questionnaires, or that the questionnaires were completed with a certain motivation in their minds. For example, a pre-measurement and post-measurement are conducted. The patient may have the motivation at the start of treatment to clearly state their symptoms, to increase the chance that they will get the help they needed. While they might possibly fill in the post-measurement more positively because they want to end the treatment with good results. The mood can also be an influencing factor on self-report questionnaires. Because when making a judgment based on emotions, it can be difficult for the respondent to separate his feeling about “something” from his general feeling (Wendt & Dijkstra, 1990). For example, the current mood could influence the answers on the MHC-SF.

Another consequence of research in a clinical setting is that not all patients have the same treatment duration. The advantage of this is that the duration of treatment and accomplishment of treatment was included as a patient characteristic to find out if it was a predictor for the treatment outcome. The limitation of this is, that the patients were one sample, in which no distinction was made between dropping out, one-year treatment, and extension. This may have led to less accurate results of the treatment outcome. In this research there is a dropout range of 35%, this dropout range is consistent with other similar researches (Van den Bosch, Sinnaeve, Hakkaart-van Roijen, & van Furth, 2014; Wolterink & Westerhof, 2018). Besides due to the longitudinal study there were sufficient participants.

Lastly, the strength of conducting research in a clinical setting is that it gives a clear image of how patients with personality disorders experience wellbeing and symptoms, and that makes it possible to make recommendations that are appropriate for a clinical setting.

Implications

In this research a sample of all the patients that conducted the pre- or post-measurement were used. There was no distinction made between patients who dropped-out, who followed one-year treatment, who completed treatment early, and who had an extension. For further research, it could be interesting to investigate whether there are differences between these groups in patient characteristics and modes measured at the pre-measurement. This is interesting because the patients who dropped-out and asked for extension may have different patient characteristics measured at the pre-measurement than patients who have maintained the normal treatment duration or completed treatment early. If it is known which modes or characteristics are mainly seen in patients who drop out or who request for extension then it may be possible to identify

these patients and to adjust the treatment to the needs of the patient to prevent the patients from dropping out or for needing an extension.

Recommendations

In this research four modes were found as a predictor for the treatment outcome. The Vulnerable Child was found as a positive predictor. The Enraged Child, the Detached Protector, and the Punitive Parent were found as negative predictors. Where the Enraged Child and the Detached protector predict lower wellbeing, and the Punitive Parent and the Detached Protector predict more symptoms at the treatment outcome. The Detached Protector has a negative influence on wellbeing and symptoms, and a higher score on this mode at the start of treatment predicts a lower outcome of treatment. For this, it is important to pay attention to which modes are scored high on the pre-measurement. A high score on the Vulnerable Child is beneficial and gives the impression that the client would benefit from the treatment as it is now. However, if a patient scores high on the Detached Protector, then this is a signal that the patient might benefit less from treatment. It is then important to pay attention to the Detached Protector in an early stage so that the Detached protector can be lowered. Making it possible to treat the Vulnerable Child, so that the client can benefit more from treatment. If a patient scores high on the Vulnerable Child, but the Detached Protector is also high, then this should be considered in treatment also. The Detached Protector might stand in front of the Vulnerable Child, making it harder to treat the Vulnerable Child. This could hinder the benefit of treatment. It should also be noted whether a patient scores high on the Punitive Parent and the Enraged Child. Both modes contribute negatively to the treatment and should therefore be treated at an early stage.

Mediant de Boerhaven is offering modules, for example, the module Healthy Adult based on the workbook module Schema therapy and the Healthy Adult (Broersen & Claassen, 2019). It is recommended to set up a similar module focusing on the Detached Protector, for patients who score high on the Detached Protector at the pre-measurement. This module could be offered in the introductory phase. In this module, the multi-chair technique could be used. The multi-chair technique is a good technique to gain insight into different modes and to ensure that a patient can detach from dysfunctional aspects of themselves (van Vreeswijk et al., 2008). This technique can help the patient to become aware of why he is using the Detached Protector and what the patient is protecting. When the patient is aware of this coping, the patient could try to sit on the chair of the Vulnerable Child and practice with this. Changing chairs can help the patient to see how the Detached Protector is in the way of solving his/her problems. Ultimately, this can be the first step towards lowering the Detached Protector and allowing the

Vulnerable Child in treatment. Since this technique is useful for various dysfunctional coping and parent modes, this module could also be used for the Enraged Child and the Punitive Parent (van Vreeswijk et al., 2008). These modes were also found to be a predictor of negative treatment outcomes. In this way the dysfunctional modes can potentially be reduced, allowing more attention to be paid to the Vulnerable Child. Which contributes to more wellbeing at the end of treatment. Since the Vulnerable Child is a positive predictor of the outcome of treatment in terms of wellbeing, it is recommended not to change the components in which the Vulnerable Child is treated.

Research suggests that the Enraged Child is high scored among patients who drop-out (Timmerman, 2014). For this reason, it is recommended to pay attention to the patient who scores high on the Enraged Child, on the pre-measurement. This patient might have a higher risk of dropping out. For this, it is important to assess if the client can recognize his/her dysfunctional modes and whether he feels involved in treatment. In addition, the Punitive Parent can cause the client to feel over-asked (Monique Hulsbergen et al., 2015). This is because the client may push themselves to the limit, and over-asking is related to symptoms of psychopathology (Didden et al., 2008). Therefore, the patient who scores high on the Punitive Parent on the pre-measurement must be observed for whether he/she is asking too much of itself or whether too much is being asked of the patient. Cognitive techniques and self-compassion interventions based on the Healthy Adult might be recommended (Arntz & Jacob, 2012b; Monique Hulsbergen et al., 2015). It is also recommended as a practitioner to be extra compassionate for the client, where the focus may be on assuring safety and empathy (M. Hulsbergen et al., 2015). But, it is also important to limit the Punitive Parent mode (Arntz & Jacob, 2012b). Self-compassion can be a buffer for complaints, and can also contribute to wellbeing (Monique Hulsbergen et al., 2015).

Conclusion

The results found in this research provide information that duration of treatment, the accomplishment of treatment, degree of symptoms and wellbeing, the Detached Protector, the Enraged Child, the Punitive Parent, and the Vulnerable Child are predictors for the outcome of treatment in a schema therapy-based clinic setting for patients with personality disorders. This knowledge is helpful because knowing which patient characteristics and modes are predictors for the outcome of treatment, can ensure that patients who might benefit less from treatment are identified earlier. Patients with modes that negatively predict the outcome of treatment measured at the start of treatment, can be identified earlier so that attention can be paid to these

dysfunctional modes. This can result in reducing the dysfunctional modes and benefitting more from treatment. This study also confirmed that mental health is based on two separate, but related domains and that both domains largely have different modes as predictors of outcome. For this reason, it is important to not only focus on the predictors of wellbeing in treatment, but also on the predictors of symptoms of psychopathology. In this way, mental health is more likely to improve during treatment.

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