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Effectiveness of Trauma-Focused Art Therapy (TFAT) for psychological trauma: A mixed method single case study

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ABSTRACT

Art therapy (AT) shows promise in treating clients with posttraumatic stress disorder (PTSD), especially those who don't respond well to traditional treatments (more than 30 %). This case study aimed to explore the effects of Trauma-Focused Art Therapy (TFAT) on PTSD symptoms and establish its viability as a non-verbal therapy for trauma-related issues. A 10-week intervention and a 3-week follow-up phase were explored using a mixed method single case experimental design (SCED) aimed at integrated results. Bringing the two types of data together adds value and enables to understand the findings better. Quantitative data was collected with weekly questionnaires focused on severity of depression, resilience, self-esteem, mental health and self-expression and emotion regulation in art therapy. The PTSD Checklist for DSM-5 (PCL-5) was completed in week 1 and 10. Qualitative data was collected through interviews, the patient dossier, and artwork. The combined findings indicate a decrease in PTSD symptoms, reduced depression symptoms, enhanced emotional articulation, increased mental resilience, self-esteem, and positive mental health. The qualitative data support these results, and also add improved emotional connection, increased emotional acknowledgment, and enhanced self-compassion. Based on the combined results of this mixed method design we understand that the TFAT protocol led to a clinically significant reduction in PTSD symptoms and improved mental health, demonstrating effectiveness of AT for trauma in this case. This is the first study that tested the TFAT protocol in posttraumatic distress.

Introduction

Unfortunately, a majority of the people in the world are exposed to traumatic events once or several times during their life, 95 % of the population in the United States of America and 70 % of the population in Europe (Kazlauskas, 2017). The variation in the prevalence of traumatic life events depends on the historical, cultural and/or political factors, among others, of citizens (Atwoli et al., 2015). Approximately 10 % of people exposed to a traumatic event develop a posttraumatic stress disorder (PTSD) (Daskalakis et al., 2018). The most common symptoms of PTSD are vivid intrusive thoughts, avoiding trauma triggers, hyperarousal and sensitivity for tension (Brewin et al., 2017). PTSD can be diagnosed if the person is exposed to actual or life-threatening injury or sexual assault. PTSD can also be diagnosed if the person did not experience (one of) these incidents itself but someone close to them did. In addition, intrusive symptoms should be present that are related to the traumatic event. There is also persistent avoidance of stimuli associated with traumatic events. Furthermore, a negative change in cognitions and mood related to the traumatic event is possible. This includes persistent and exaggerated negative beliefs or expectations of themselves, others or the world. There are also changes in arousal and reactivity levels such as irritable behavior or anger outbursts for no apparent reason, which are related to the traumatic event. Additionally, the duration of symptoms of PTSD should be persistent for over one month and there should be a clinically significant level of suffering or limitation in social or occupational functioning or in other important areas. The last important criterion is that the disorder cannot be attributed to a physiological effect of a drug or a somatic disorder (American Psychiatric Association (APA), 2013; Friedman et al., 2011; Kilpatrick et al., 2013).

There are multiple therapies that are used for PTSD. Exposure is

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effective and the most examined technique in PTSD treatment (Rogiers, 2006). Furthermore, Eye Movement Desensitization and Reprocessing therapy (EMDR) is also very effective for treatment of PTSD (Korn, 2009). In 2018, the World Health Organization recommended EMDR as a first option to treat PTSD in adults, children and adolescents (Navarro et al., 2018). Nevertheless, some people are treatment-resistance (Loerinc et al., 2015; Van Schie, 2018) and according to Durham et al. (2012), 30 % of the people with intensive therapy had a bad outcome such as symptoms that are not decreased, avoidant coping mechanism, somatization and sensitivity for anxiety. Therefore, it is necessary to discover alternatives or augmented treatments (Bradley et al., 2005). In addition, it has been demonstrated that people with PTSD have memory deteriorations, specifically considering verbal memory, which results in decreased symptom reduction (De Haart et al., 2020). Furthermore, people with PTSD can have difficulty with speaking about the trauma event, which can be an issue for verbal therapy (Foa et al., 2006). This can lead to people not entering treatment at all (Vancampfort et al., 2015).

Art therapy (AT) is a form of psychotherapy which also can be applied in the case of trauma. Artistic activity can help people by supporting social, emotional and mental needs (BAAT, 2014; Pamelia, 2015). There are several options when it comes to an AT intervention: drawing, painting or sculpting for example (Bosman et al., 2021). In AT, clients can express themselves through art. They can express through their visual work and through giving words to their art work what it represents within the therapeutic relationship with the art therapist. AT is an appropriate form of therapy when clients find verbal expression difficult (Malchiodi, 2022). Verbal expression is often more cognitive and therefore sometimes not the desired or possible entry point for someone, for example people who are not cognitively minded and have difficulty recognizing and expressing feelings (Haeyen, 2018/, 2024). AT is a client-centered approach where the art therapist and the client work together to address issues that are adversely affecting the client's life. AT uses the creative process to make it possible that the person is aware of the expression of his deepest emotions (Nainis et al., 2006).

Systematic reviews about art therapy in trauma care reveal that well-conducted studies, which meet the criteria of a RCT, are rare (Schouten et al., 2015; Baker et al., 2018; Schnitzer et al., 2021). Due to methodological limitations the level of evidence for art therapy in trauma care is classified as low (Baker et al., 2018). There is a growing number of published studies as can be seen in the reviews. Reynolds et al. (2000) studied 17 studies while Slayton et al. (2010) studied 35 studies about the effectiveness of AT. In addition, in 2021, 449 studies about the effect of AT on PTSD symptoms were discussed (Schnitzer et al., 2021). Bowen-Salter et al. (2021) reviewed the elements of art therapy practice for trauma (Design, Training, Delivery, Receipt, and Enactment) and reveals an inconsistency in reporting a lack of usage of guidelines. These authors suggest that none-standardized art therapy treatment might be intentional and necessary in order to provide person-centered care, which compliments the subjective character of making art. Smith (2016) conducted a narrative literature review about therapeutic mechanisms for veterans with post-traumatic stress disorder (PTSD) and differentiates several mechanisms such as the impact of externalizing the art image in order to facilitate processing of memories and the transition from non-verbal expression to verbal processing of trauma through the use of art, which leads to a change in the nature of memory storage.

Despite overall positive feedback on AT, there is still room for improvement. Reynolds et al. (2000) concluded that beyond the lack of standardization, also the validity and usefulness of the results should be questioned. It is important to describe the interventions that are used, as they should be reproducible for other therapists. However, this does not appear to be the case for the analysed studies. The study by Slayton et al. (2010) showed that the effect of AT was primarily based on intuition of the therapist. Furthermore, there was less interest in the working mechanism of AT in the past.

According to professional expertise in descriptive literature, AT is a promising form of therapy that can help clients with symptoms of trauma. The fact that art works is due to the multimodal aspects of the method, it appeals to the kinesthetic, perceptual and cognitive aspects of the human being rather than just the cognitive aspect, which is the case with most treatments (Appleton, 2001; Lusebrink, 2021). Imaging is an important element of treatment of PTSD. Concretizing imagery is a component of AT which is helpful in breaking through client avoidance behaviors or tendencies (Johnson et al., 2009). The study of Luzzatto et al. (2022) has shown that AT has a positive effect on people who are mentally and sexually abused. AT contributes to improvement of self-esteem of the client. Other studies have shown that AT helps people with PTSD by getting more control over what is past and present (Avrahami, 2006; Spaletto, 1993). The study of Baker (2006) revealed that war refugees respond positively to AT as opposed to traditional verbal therapy. AT provides safety and understanding for war traumas through working on and sharing creative projects (Hollingsbee, 2019; Schouten et al., 2019). Moreover, people who suffered from (sexual) abuse can benefit from AT. In addition, AT also increases the well-being of the client, due to making clients more self-conscious. Subsequently, clients learn how to adapt to stressful and traumatic events (Nainis et al., 2006). An intervention during AT is to make the client visualize what they would like to achieve. This can contribute to building a healthy identity for themself, which is a positive outcome (Brillantes-Evangelista, 2013).

From a neurobiological perspective, the working mechanism of AT can be explained. A quasi-experimental study of Kaimal et al. (2016) investigated the impact of visual art making on the cortisol levels of 39 healthy adults. Results indicated that art making resulted in statistically significant lowering of cortisol levels. Another study bu Kaimal N = 26) et al. (2017)) used Functional near Infrared Spectroscopy (fNIRS). This study examined how people's brains function while producing art. The results showed that visual self-expression helped with attention and improved health and well-being. Prefrontal brain blood flow raised during the creative process. The prefrontal cortex was involved in controlling emotions and connected to our brain's reward circuits, as well as our emotional and motivational systems. Self-expression tasks activated the medial prefrontal cortex, indicating potential clinical applications of reward perception through art making. Participants improved in their self-perceptions of problem solving and having good ideas. So, during AT, blood flow will increase which is likely to result into a rewarded feeling which leads to positive well-being and pleasure to the person doing the artwork (Ishizu & Zeki, 2013). A study of Katahira N = 16) et al. (2018) utilized an electroencephalogram (EEG) during an experimentally evoked flow state and examined the possibility of objective measurement of immediate flow. The flow state was characterized by increased theta activities in the frontal areas and moderate alpha activities in the frontal and central areas.

According to polyvagal theory (PVT), as developed by Stephen W. Porges (Porges, 2022), traumatic experiences have an impact on how the central nervous system reacts (Fig. 1). The ventral vagus of the parasympathetic nervous system is activated when one feels safe and comfortable, while the dorsal vagus of the parasympathetic nervous system is activated in life-threatening situations causing a freeze response (body collapse, immobilization, or dissociation). The sympathetic nervous system is activated when a threatening circumstance arises. (Levine, 2011; Porges, 2022). In early childhood trauma, the nervous system is dysregulated which can result in difficulties with safety signalling and function primarily in the sympathetic nervous system (Kolacz et al., 2019). AT helps to reduce stress, which in turn stimulates the ventral vagus creating a safe and comfortable feeling (Haeyen, 2024; Kaimal et al., 2016). Although there is some criticism about the validity of PVT, sometimes based on misunderstanding or misinterpreting (Porges, 2023) it (still) provides a helpful theoretical basis for practice and recognition of automatic responses (Haeyen, 2024).

Furthermore, AT can stimulate neuroplasticity which causes

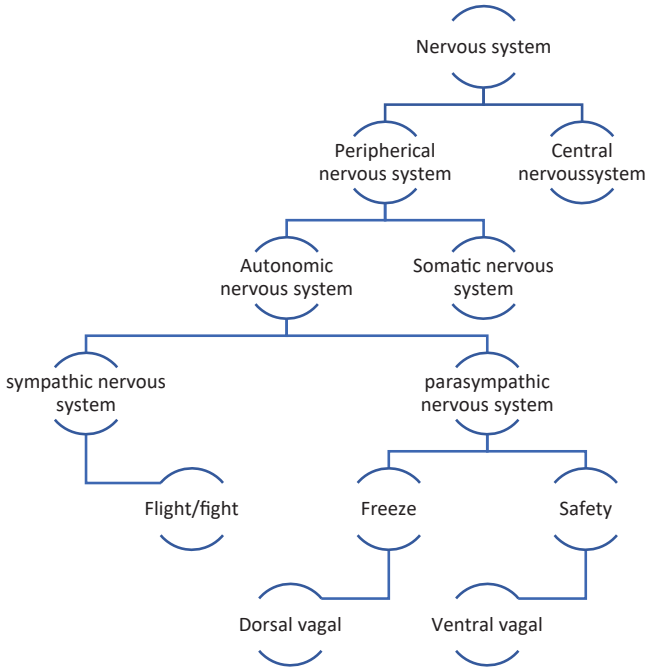

Fig. 1. Polyvagal theory and trauma. Note, Figure made by FW, data originating from Porges (2022) and (Levine, 2011).

reprogramming of pathways in the brain. This is important for clients with trauma related symptoms as the brain of these clients are often dysregulated (Garrett, 2020; Yu et al., 2021). Activity of the amygdala is found to be increased in people who suffer from PTSD (Shin et al., 2004). The amygdala is part of the limbic system, and it plays a major role in emotional information processing (Liberzon et al., 1999). AT appeals to the limbic system since the limbic memory is non-verbal. Thus, AT indirectly regulates the emotional information processing. This suggests that AT van be a good treatment for PTSD (Burrill, 2010; Masterson et al., 2008; Vreugdenhil, 2023). In conclusion, AT could be an effective treatment for PTSD also for a number of neurobiological reasons. It is important that AT becomes evidence based as this increases the accessibility of AT. Both quantitative and qualitative data are needed.

Nowadays more and more people are starting to see the added value of AT and the number of studies is growing. However, it remains unclear which components actually play a role in AT. One option that can contribute to making AT evidence-based is the Trauma-Focused Art Therapy (TFAT) protocol. Schouten et al. (2015) based this TFAT protocol on the study of Wertheim-Cahen et al. (2004) which has shown that a trauma-focused art therapy resulted in reduction of PTSD symptoms. Finally, the pilot study of the TFAT protocol was conducted with adult refugees and the protocol was found to be acceptable, feasible and applicable in reducing PTSD symptoms (Schouten et al., 2019).

The aims of this study are to gain a combined quantitative and qualitative insight into the effects of AT on a client who experiences symptoms of PTSD. This can lead to increased quality of AT, and it can make trauma treatment more compatible to a client to be used in practise. We want to investigate to what extent the TFAT protocol affects the client who experiences trauma-related symptoms, based on quantitative measures, on perceived effects by the client experiencing this TFAT and, what we can conclude based on these combined results.

Our hypothesis is that AT is a good fit for people who are traumatized and who struggle with verbal therapy. This is because the visual and tactile characteristics of AT match the sensory of the traumatic memories. Another hypothesis is that the trauma-focused protocol is effective in clients with trauma PTSD symptoms in decreasing PTSD and depression symptoms (in case of this comorbidity), increasing self-confidence, mental resilience and positive mental health. This case study is about a young female, her name is Lynn, which is a fictitious name for privacy reasons.

Method

Study design

This study is a single case experimental design (SCED; Swamborn, 1994) with a mixed method design; partly quantitative using questionnaires and semi structured interviews for the qualitative part of the study (Van Male, 2011). It is a concurrent mixed methods design since we collected the quantitative and qualitative data simultaneously (Creswell, 2021) and compare these. An integrated view of the two data sets shows how the quantitative and qualitative data complement each other, when/how they differ, and what that means, or doesn't mean, so that the strengths of both types of data/collection emerge. The SCED is part of a Multiple baseline single case experimental design (MBSCED) study that is being executed Research Group Arts & Psychomotor Therapies in Health Care, n.d.). The objective of the MBSCED study is to gain insight into the effect and functioning of TFAT protocol in order to increase the quality and availability of trauma treatment. The SCED was used to study if an intervention is the reason for behavioural changes by using the TFAT protocol (Epstein, 2022). Multiple measurements of the same client were performed as part of the SCED. In addition, the client served as his own control group which means that there is a within subject design (Dallery & Raiff, 2014). There were 2 phases in this study: the first phase was the intervention phase, and the second phase was the follow-up phase (Smith, 2012). The Research Group Arts and Psychomotor Therapies in Health Care will meta-analyse the results of this SCED and other SCEDs (Heijman et al., 2024) to establish generalised methods and treatment guidelines for people with PTSD (Shadish, 2014). The Research Ethics Committee (REC) of the HAN University of Applied Sciences reviewed the research proposal and provided a formal letter of approval (ref. no ECO 394.09/22).

Participant

The client is eligible for inclusion when between 18 and 65 years old and in treatment in specialized mental health care for people diagnosed with personality disorders. The treatment as usual (TAU) consisted of group talk therapy combined with body work. The indication for the TFAT intervention was based on the client diagnose of experienced trauma related mental distress which could not be fully addressed in the group therapy. The indication for this individual AT was made by the referring psychotherapist. The traumatic event(s) could be from a wide range, from sexual-assault, refugee issues, veteran issues to adverse childhood experiences. The client had to have a score of 20 or higher on the PTSD checklist for Diagnostic and Statistical Manual of Mental Disorders 5 (DSM-5) (PCL-5). The client had to be able to complete questionnaires based on the languages and intelligence quotient (IQ). The safety of the participant was monitored weekly by checking the score on item 9 of the BDI-II, about the level of possible suicidal thoughts.

Quantitative data

Measurement instruments. The client completed 6 different questionnaires during the study. In addition, drop-out, major events during the study, suicidal risk and no-show were also monitored with the client attendance checklist. Suicidal risk was monitored with item 9 of the Beck Depression Inventory II (BDI-II).

The PTSD checklist for DSM-5 (PCL-5) is a self-report questionnaire measuring the severity of PTSD symptoms. This questionnaire was completed during the first and the last session of the intervention phase. The PCL-5 focusses on PTSD symptoms during the past month so therefore this questionnaire is not completed every week. The

questionnaire consists of 20 items which are corresponding to the DSM-5 criteria of PTSD (e.g., In the past month, how much were you been bothered by: "Repeated, disturbing, and unwanted memories of the stressful experience?"). To measure to what extent the client has experienced PTSD symptoms, a 5-point Likert scale ranging from 1 "not at all" to 5 "extremely", is used. (Blevins et al., 2015). The PCL-5 shows good psychometric properties (Armour Cherie, 2016; Wortmann et al., 2016). The reliability is good ($\alpha = 0.93$, subscales; intrusive = 0.90, avoidance = 0.80, cognitions/mood = 0.84 and arousal = 0.93) (Van Praag et al., 2020). The validity was considered satisfactory (test-retest = 0.84) and a back translation was used (Bovin et al., 2016).

The Self-expression and Emotion Regulation in Art Therapy Scale (SERATS) developed by Haeyen (2018) can be used to measure a person's ability to express themselves using AT and to measure whether AT helps a person regulate their emotions. The questionnaire consists of 9 questions (e.g., "Through my artwork, I can express my emotions") which uses a 5-point Likert Scale, ranging from 1 "never true" to 5 "(almost) always true" (Haeyen & Noorthoorn, 2021). The questionnaire had good psychometric properties with an internal consistency with $\alpha = 0.94$, test-retest correlation of 0.96 as well as convergent validity (Haeyen et al. (2018); Haeyen and Noorthoorn (2021).

The BDI-II measures the severity of depression in clients (Furlanetto et al., 2005). The questions are multiple choice, and the answer must be based on last week (e.g., "I do not feel sad, I feel sad much of the time, I am sad all of the time or I am sad or unhappy that I cannot stand it"). The total score is the sum of all scores and this total score determines the severity of depression (Van Dieren et al., 2016; Roelofs et al., 2005). The article of Lasa et al. (2000) suggests that a total score of < 14 is not indicative of depressive disorder, a total score between 13 and 19 is mild to moderate depression, a total score between 18 and 30 is moderate to severe depression and a total score > 30 indicates severe depression. The BDI-II has good psychometric properties; the reliability is good ($\alpha = 0.90$), also the validity is good due to a high correlation with other questionnaires of depressive and anxious symptoms ($r = 0.89$) (Schulenberg & Yutrzenka, 2001; Storch et al., 2004). In addition, Sprinkle (2002) has shown a test-retest correlation of 0.93 which also indicates a high validity.

Another questionnaire is the Resilience Scale (RS) which measures the degree of mental resilience in an individual (Lee, 2013). Herrman et al. (2011) defines resilience as how individuals cope with difficult circumstances. The questionnaire consists of 25 questions (e.g., "In a difficult spot, I turn at once to what can be done to put things right") on a 4-point Likert Scale, ranging from 1 "strongly disagree" to 4 "strongly agree" (Leontjevas et al., 2014). The total score and the subscale scores ('Personal Competence' and 'Acceptance of Self and Life') are going to be calculated (Portzky et al., 2010). The higher the score, the more resilient a person is (Portzky et al., 2009). The psychometric properties of the RS are good. According to Windle et al. (2011) the content and construct validity are strong and Resnick and Inguito (2011) measured a strong internal consistency of $\alpha = 0.91$.

The Rosenberg Self-Esteem Scale (RSES) (Rosenberg, 1979) measures the self-esteem of an individual. The RSES is a questionnaire consisting of 10 questions (e.g., "I feel that I am a person of worth, at least on an equal plane with otherers"). This questionnaire uses a 4-point Likert Scale, ranging from 0 "totally not agree" to 3 "totally agree". The total score ranges from 0 till 30 whereby a total score of 30 corresponds to a high score of global self-esteem. The reliability of the RSES is good ($\alpha = 0.87$); the test-retest reliability is between 0.72 and 0.93 (Classen et al., 2007), and the split-half method is 0.83 (Smith, 2012). According to (Everaert et al., 2010), the validity is strong. The validity is also good because a back translation was used (Franck et al., 2008) and the Fit index is 0.90 (Robins et al., 2001).

The Dutch Mental Health Continuum-Short Form (MHC-SF) measures positive mental health which refers to social, emotional and psychological well-being (Rogoza et al., 2018), respectively, 5, 3 and 6 questions. Thus, the questionnaire consists of 14 questions (e.g., "During the past month, how often do you feel satisfied with life?"), the client can give their answer on a 6-point Likert scale ranging from 0 ("never") to 6 ("every day") (Foster & Chow, 2019). The psychometric properties of the MHC-SF are good (Westerhof, 2022). The α of the social subscale has less internal consistency (0.76) compared to emotional scale (0.85) and psychosocial scale (0.83). The high test-retest score (between 0.67 and 0.87) indicates good reliability (Kennes et al., 2020). The study of Lamers et al. (2011) showed both convergent and discriminant validity, meaning good construct validity. The convergent validity is also good according to Joshanloo and Lamers (2016).

Qualitative data

Interviews. In-depth semi-structured interviews were used as a qualitative method to investigate subjective experiences of the interviewee (Percy et al., 2015). Two interviews, developed for this purpose, were conducted: one with the client and one with the art therapist. The interviews lasted each approximately 45 min, and they were conducted at the end of the follow-up phase. The interviews were based on so-called *change interview* (Elliott, 2011). The purpose of the interview was to find out what changes were noticed by the client or art therapist during therapy. In addition, the client or art therapist was asked to explain these changes and what aspects of the therapy were helpful or not helpful. This was used to assess the satisfaction of the client (Elliott, 2011).

The focus of the interview with the client was on the experiences based on the artwork and the therapeutic process. A few example questions of the interview are: '"Did AT contribute to your recovery or not, and if so: in what way?" and "Did you manage to express your emotions in the artwork?". The focus of the interview with the art therapist was on the practical applicability of the protocol and the client's process. Questions that assess these aspects are: "Did you notice a difference in the client's behavior at the beginning of therapy and at the end of therapy?" and "Would you like to provide suggestions for the content of the protocol in light of practice?". The interviews were audiotaped, to which the participants agreed upon signing the Informed Consent Form (ICF).

Electronic Patient Dossier. The written reports from the electronic patient dossier (EPD) were also included in the data processing. After each session a report was recorded by the art therapist. Information about the effects of the interventions, which the art therapist observed, were extracted from these reports. The report described the personal information that the client shared, and the therapist complemented this with his own observations, assessments and advice (Regouin & Schamp, 2006).

Artwork

The client created multiple pieces of art during the therapy which became a lifeline. The client used different kind of materials for the artwork based on her preferences. The artwork was used as a guidance to be used during the interviews and as visual support for the data that was collected during this study.

Procedure

The TFAT protocol was offered alongside treatment as usual, which was group therapy. The client was informed about the study through an information letter. The client signed an informed consent form after agreeing to participate. The client had weekly sessions of 60 min and all contact was face-to-face. Table 1 shows when each questionnaire was administered. The intervention phase was 10 weeks and during the intervention phase, the client was exposed to the TFAT protocol. Lastly, there was a 3-week follow-up.

The questionnaires, interviews, artwork of the client and the report of the EPD were all part of the data collection. The EPD was used for

Table 1
Timeline of questionnaires.

Start intervention phase: TAU	Intervention phase: TAU + TFAT	Post- intervention phase: TAU + TFAT	Follow-up phase: TAU
T1	***T2 t/m T9, weekly***	***T10***	***3 weeks, weekly***
PCL−5	SERATS	PCL−5	SERATS
SERATS	BDI-II	SERATS	BDI-II
BDI-II	RS	BDI-II	RS
RS	RSES	RS	RSES
RSES	MHC-SF	RSES	MHC-SF
MHC-SF		MHC-SF	

Note: Treatment As Usual (TAU), Trauma Focused Art-therapy Protocol (TFAT), Post Traumatic Stress Disorder Checklist for Diagnostic and Statistical Manual of Mental Disorders 5 (PCL-5), Self-expression and Emotion Regulation in Art Therapy Scale (SERATS), Beck Depression Inventory II (BDI-II), Resilience Scale (RS), Rosenberg Self-Esteem Scale (RSES), Mental Health Continuum-Short Form (MHC-SF).

observations during the intervention phase. The overview of the data collection is shown in Fig. 2.

Intervention

The TFAT protocol consists of 10 individual sessions of 60 min to be conducted by a trained art therapist who is experienced in offering trauma therapy. These sessions are specifically aimed at processing trauma in AT based on expressing important negative as well as some positive memories in the artwork. The TFAT protocol contains 3 phases: phase 1 focuses on the stabilisation and symptom reduction phase. This first phase ends with a jointly discussed agenda of traumatic memories and some positive memories from the client's past to be expressed in the following phase (4 sessions). Phase 2 focusses on memorization and shaping (5 sessions) and phase 3 focuses on the integration and meaning-making phase (1 session) (see Fig. 3. Content of TFAT). Further elaboration of this protocol is person-dependent, tailor-made to the client's needs and abilities. Because of this, further details cannot be given as this can vary greatly from person to person. In any case, the structure of the sessions remains as indicated here. During the 10 sessions, the client is closely monitored; for example, if the client is not yet ready to move to the next phase, multidisciplinary consultations will be held. Possibilities are to quit AT or to give the client more time and space to build a safer environment for the client. The aim of this treatment is a decrease of trauma symptoms and improved mental health of the client.

Data analysis

The quantitative data were analysed with IBM SPSS statistics (version 26). The completed questionnaires were entered as data points in SPSS. The mean, median, range, absolute level change and eventually the stability envelope of each questionnaire for each phase were calculated. A conclusion could also be drawn about the direction, stability and multiple paths within trend (Lane & Gast, 2014). Thus, it was possible to see what the effect of the TFAT protocol was on the symptoms of the client.

The interviews (qualitative data) were analysed with ATLAS.ti (2023) (version 23) using thematic analysis of Braun and Clarke (2006) using different coding steps: in-vivo, axial and selective coding. The themes were chosen deductively based on the hypothesis/ theory that art therapy works for trauma First, both interviews were transcribed, followed by the analysis of the transcription to identify information about the overarching themes, ideas and pattern. Treatment integrity was a topic in the interview with the art therapist. Furthermore, the information from the EPD was also analysed using the thematic analyse of Braun and Clarke (2006). The artwork was used as visual support for the data that was collected during this study. The artwork provided an important guide in the interview to deepen the conversation regarding aspects of art therapy, the use of materials, themes and how she experienced it all.

Results

Indication for AT. Lynn, a Dutch woman of 24 years, was referred by their psychologist who noted that EMDR was insufficient and not working as planned. The client was also in group therapy (treatment as usual) and made some progress but not satisfactory. "However, more treatment was needed to help her move forward, particularly in terms of being able to talk about what happened in her life and being allowed to feel something about it." (Therapist). The group therapy was focused on personality disorder problems. The other group members did not all have trauma, and did show enough progression, so in Lynn's case, additional treatment was chosen. Lynn also claimed that talking was probably not the method to make (more) progress: "I can go on and on about the same subject, but it is just talking. It becomes a bit repetitive".

Fig. 2. *Overview data collection.*

Fig. 3. Content of TFAT.

She saw opportunities in AT: "Maybe there is something there that I cannot express in words or with a lot of talking" (Lynn).

The EPD described that Lynn was adopted from China when she was 2.5 years old. She has no recollection of this time. While there is no evidence that early adoption is a trauma for the individual, ongoing negative life circumstances, attachment difficulties, and developmentally-mediated attributions about adoption can undermine the person's self-esteem, identity, relationships, and sense of well-being (Brodzinsky et al., 2022). Art psychotherapy, together with the safety of a stable home and caring family, can allow adopted children to face past problems and live a more balanced life (Ioannides, 2024). Lynn was classified with a borderline personality disorder (BPD) with mood swings, frequent arguments with others and identity problems. She had recently become increasingly curious about her biological parents, her origins, and her identity as a human. During the intake, she mentioned that she believed that many of her issues were related to the adoption. She mentioned engaging in social interactions or attachment issues as examples. She suppressed her emotions and did not feel much in daily life. Abandonment was a scheme that could be traced back to adoption. Adoption was a major theme throughout the AT.

Quantitative results

Questionnaires. The results of the six questionnaires were analysed to monitor if the TFAT protocol was effective. Fig. 4 shows the results of the PCL-5 questionnaire at the start and end of the intervention phase. Fig. 5 shows the results of five questionnaires during the intervention phase. PCL-5 (4) and BDI-II (Figure B) all exhibit a declining trend, respectively the scores change from 49 to 17 (PCL-5) and from 28 to 5 (BDI- II). A low score of the PCL-5 indicates the client has fewer PTSD symptoms. The declining trend of the BDI-II indicates less depression symptoms. The results of the SERATS (Figure A), RS (Figure C), RSES (Figure D) and MHC-SF (Figure E) questionnaires show an increasing trend in the intervention phase, the scores changing from 20 to 28 (SERATS), from 69 to 76 (RS), from 21 to 27 (RSES) and from 27 to 35 (MHC-SF) respectively. An increasing trend of the SERATS is encouraging since it shows the client can articulate her emotions more easily than they might with a lower score. Increased mental resilience is indicated by an increasing trend of the RS for the client. An increasing trend of the RSES indicates an increase in self-esteem of the client. Increased positive mental health is indicated by a higher MHC-SF score.

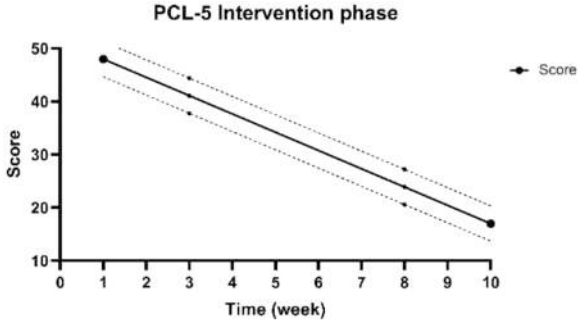

Fig. 4. Results of the Post Traumatic Stress Disorder Checklist for Diagnostic and Statistical Manual of Mental Disorders 5 (PCL-5) questionnaire.

Fig. 6 shows the results of the five questionnaires during the follow-up phase. The results of the RSES (Fig. 6D) and the MHC-SF (Fig. 6E) are a straight line, which indicates no changes. The results of the BDI-II (Fig. 6B) show a decrease followed by an increase, with the beginning and end points being at the same level. The SERATS results (Fig. 6A) first show a decreasing trend, followed by an increasing trend. The RS results show a small increase (Fig. 6C).

The results of the MHC-SF questionnaire's subscales are depicted in Fig. 7. The emotional well-being (EW) subscale is shown in Fig. 7.A. In general, an increase in the results of the EW subscale is shown, with scores ranging from 4 to 5. The social well-being (SW) subscale (Fig. 7. B) shows a declining trend at first, followed by an increasing trend after week 4. In general, an increase in the results of the SW subscale is shown, with scores ranging from 10 to 12. Finally, the client's psychological well-being (PW) is shown in 7. C, where the score increases from 13 to 18. In conclusion, there is an increasing trend across all subscales of the MHC-SF questionnaire during the intervention phase. This indicates increased positive mental health of the client. Fig. 7. D,.E and.F show the results of the subscales during the follow-up phase. The EW, SW and PW subscales all show a stable trend, the results are 11, 16 and 22 respectively.

The RS questionnaires' subscales are depicted in Fig. 8. The Personal Competence (PC) subscale of the intervention phase is shown in 8.A. The scores range from 48 to 53, indicating an increase of the PC subscale during the intervention phase. The Acceptance of Self and Life (ASL) subscale (Fig. 8. B) show a slight increase in the results, ranging from 21 to 23. Thus, for both subscales an increase in the results is observed during the intervention phase. This indicates increased mental resilience of the client. Fig. 8. C and.D exhibit the results of the subscales of the RS questionnaires during the follow-up phase. The results show a slight increased trend for both subscales (PC and ASL), with values of 59 to 60 and 26 to 27 respectively.

The stability envelope was calculated to determine whether the results of the questionnaires are considered stable. Table 2 shows the percentage falling in or on the stability envelope for each questionnaire.

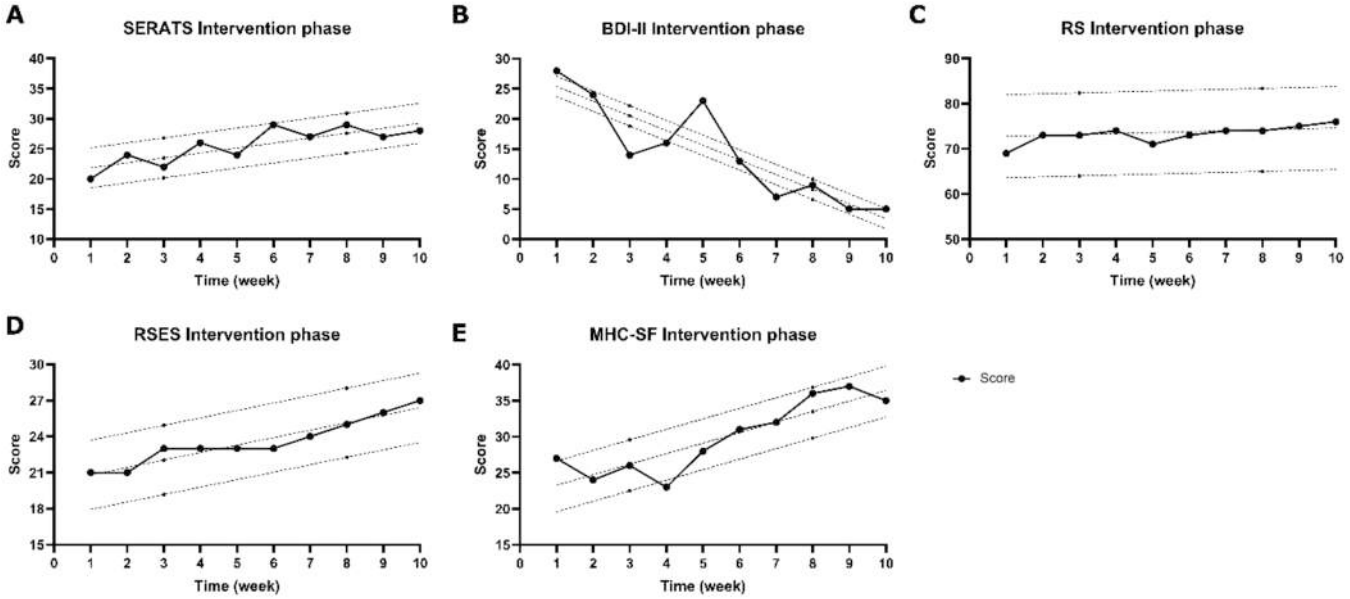

Fig. 5. Results of the SERATS, BDI-II, RS, RSES and MHC-SF during the intervention phase. Note. A = Post Traumatic Stress Disorder Checklist for Diagnostic and Statistical Manual of Mental Disorders 5 (PCL-5), B = Self-expression and Emotion Regulation in Art Therapy Scale (SERATS), C = Beck Depression Inventory II (BDI-II), D = Resilience Scale (RS), E = Rosenberg Self-Esteem Scale (RSES), F = Mental Health Continuum-Short Form (MHC-SF).

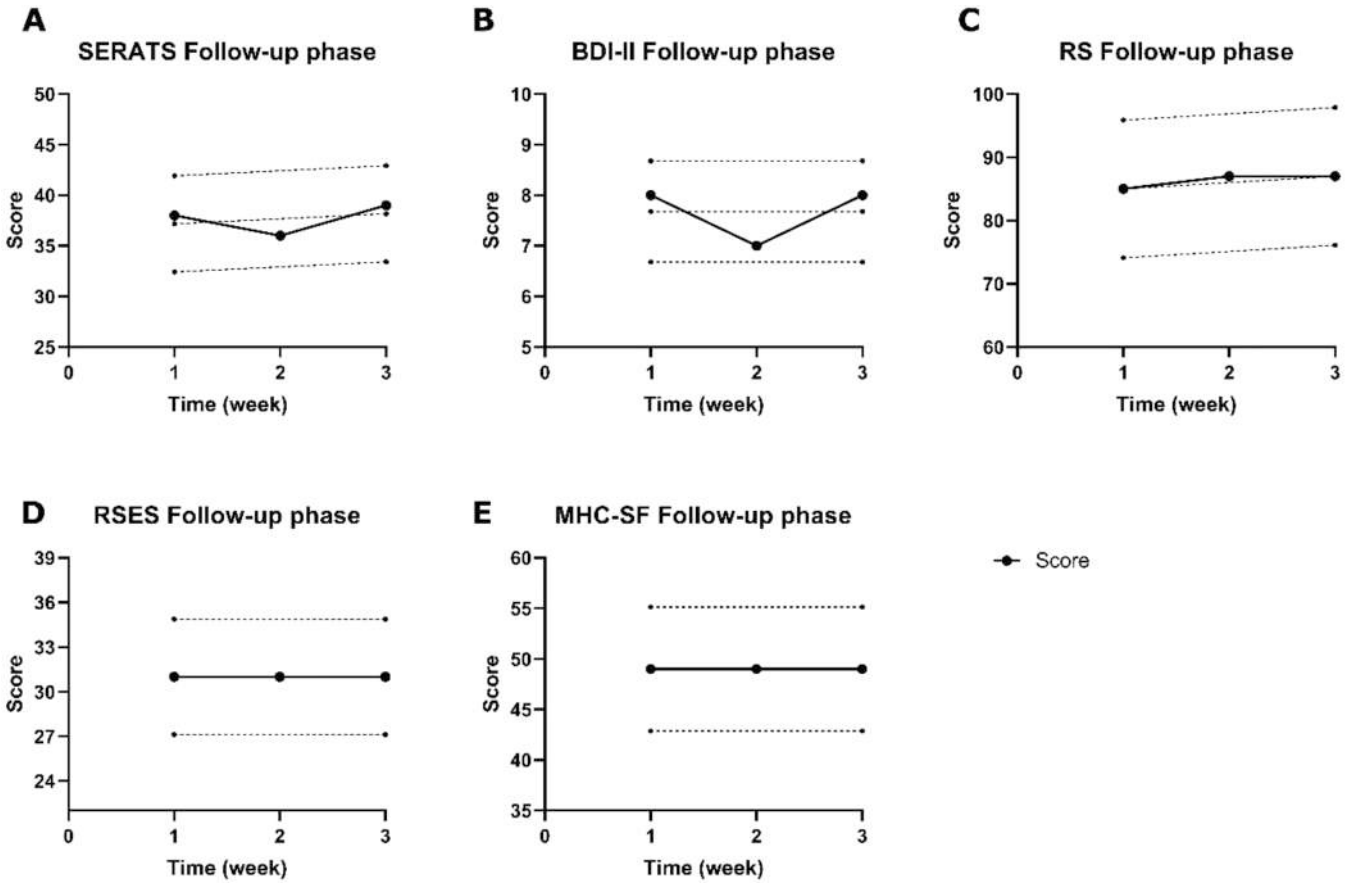

Fig. 6. Results of the SERATS, BDI-II, RS, RSES and MHC-SF the follow-up phase Note. A = Self-expression and Emotion Regulation in Art Therapy Scale (SERATS), B = Beck Depression Inventory II (BDI-II), C = Resilience Scale (RS), D = Rosenberg Self-Esteem Scale (RSES), E = Mental Health Continuum-Short Form (MHC-SF).

Results are considered stable when the stability envelope is between 80% and 100% (Ledford et al., 2018). Only 40% of the results of the BDI-II and the EW subscale of the MHC-SF are on or within the stability envelope. This indicates low stability of these results and therefore they are less reliable. The percentage on or within the stability envelope of the results of the other questionnaires are 80% or higher, indicating

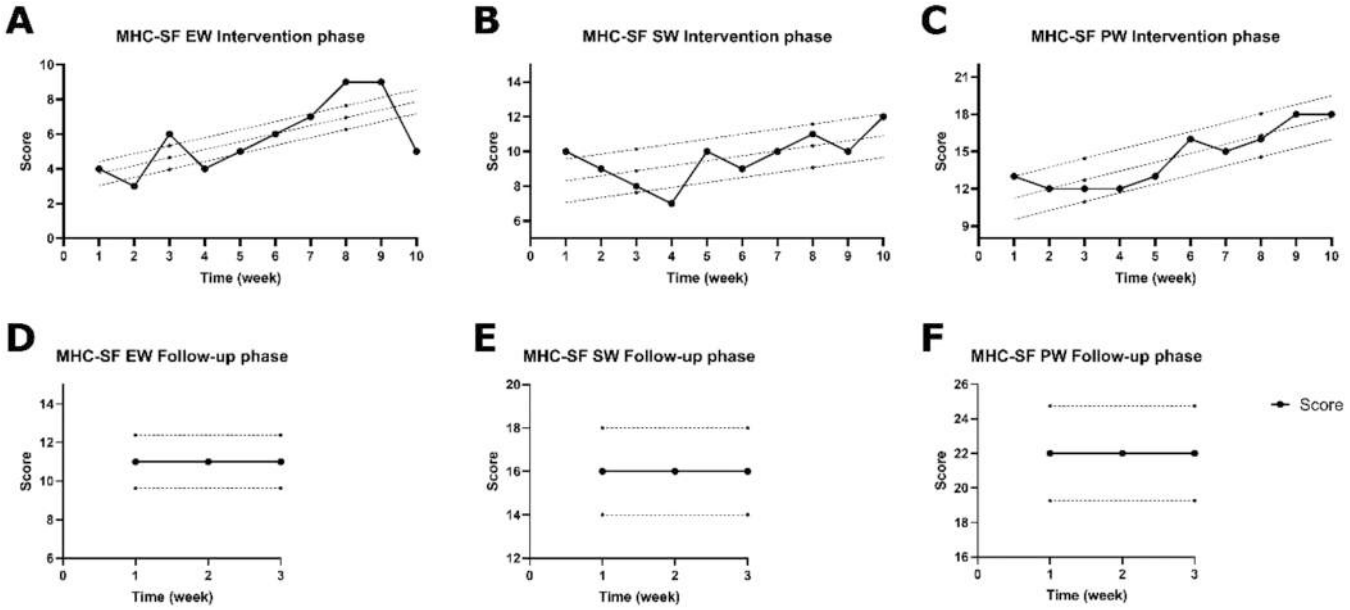

Fig. 7. Results of the subscales and each phase of the Mental Health Continuum-Short Form (MHC-SF) questionnaire. Note. A and D = MHC-SF emotional well-being (EW), B and E = MHC-SF social well-being (SW) and C and F = MHC-SF psychological well-being (PW).

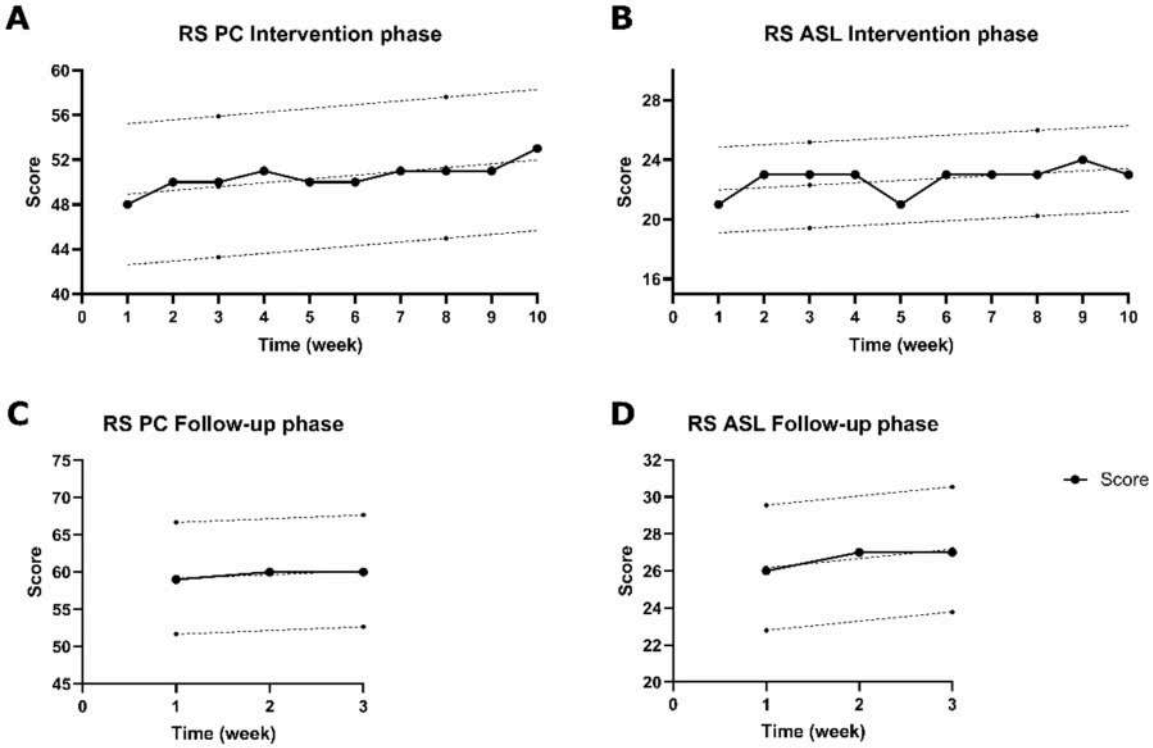

Fig. 8. Results of each subscale and each phase of the Resilience Scale (RS) questionnaire. Note. A and C = Personal Competence (PC) and B and D = Acceptance of Self and Life (ASL).

stable results which are reliable.

Qualitative data

Important themes based on the two interviews, dossier and artwork were: 1) shaping the lifeline in the art products, 2) the art therapist's interventions, 3) the effects of art therapy using the TFAT protocol and 4) identifying the experiences with the TFAT protocol. The themes were chosen deductively (Verhoeven, 2020) based on the hypothesis/ theory that art therapy works for trauma where shaping the lifeline and certain life experiences, the art therapist's interventions would lead to certain effects and where we wanted to identify what experiences were gained from the TFAT protocol. The focus was not on the interpretation of individual data items but the interpretation of aggregated meaning and meaningfulness across the dataset.

Shaping the Lifeline in the Art Products. The reports of the first

Table 2
Stability envelope for each questionnaire by phase.

	Percent on or within the stability envelope Intervention phase	Percent on or within the stability envelope Follow-up
PCL−5	100%	-
SERATS	100%	100%
BDI-II	40%	100%
RS	100%	100%
Personal competences	100%	100%
Acceptance of Self and Life	100%	100%
RSES	100%	100%
MHC-SF	80%	100%
Emotional well-being	40%	100%
Social well-being	80%	100%
Psychological well-being	90%	100%

Note: Post Traumatic Stress Disorder Checklist for Diagnostic and Statistical Manual of Mental Disorders 5 (PCL-5), Self-expression and Emotion Regulation in Art Therapy Scale (SERATS), Beck Depression Inventory II (BDI-II), Resilience Scale (RS), Rosenberg Self-Esteem Scale (RSES), Mental Health Continuum-Short Form (MHC-SF).

sessions demonstrated that a lifeline was created using photos. The client experienced a variety of emotions as a result of her unclear date of birth. The result of the lifeline is shown in 9. Client explained details of the lifeline: “It is a chronological story. Me as a baby with a bit of the atmospheric impression of the orphanage. Then me slightly bigger at the orphanage, the first meeting with my parents, the first meeting with my family and my first birthday in my new country.” (Lynn).

Lynn tried to connect her emotions to the moment of the photos. She tried to change a part of the photos to become more self-compassionate. During the interview, she described how alienating it felt to see what was on her photos: "One photo was actually very weird, because I was held by anonymous people or hands (no faces on the photo), and I do not actually know who they were. I thought that was kind of creepy, so I tried to make it just a sweet baby photo” (box first left, Fig. 9) and “I made little bears with faces, it just looks cute. I like it a bit more than those unknown nurses” in Fig. 10, `The orphanage’. This was also described in the EPD, the therapist described it as striking that the client looks sad and anxious in every photo. The therapist also described what happened when the box with the photo is decorated by the client. “Lynn did not like to look at the photo, so therefore we changed the photo to what she would need, so there is a bit of rescripting. She added a comfy blanked to one of the beds, and she added a stuffed animal. She added

Fig. 9. Result art therapy; lifeline – integrated image.

Fig. 10. The orphanage.

bear faces to both nurses.”

The client talked about her first meeting with her parents and sister (depicted in Figure): “I look very sad and anxious again. This should have been another really nice moment, but I can imagine that I thought: who are you guys? I added that all to the box, all the cries”. Client wrote down all thoughts she could have had at that time, and she wrote hem on the box. This helped her to acknowledge her emotions about the situation. The therapist described how this went during the session: “She added written thoughts to the background of the box. But then she said, ‘I feel very guilty about that’ and showing a primary emotional reaction followed by a secondary emotional reaction. So, we added a plastic top layer to the box and this top layer contains the texts representing the secondary emotional reaction.” The next box she made was about her feeling of being watched all the time, that first time with her new family (Fig. 11). She also expressed that in Fig. 12: “All those eyes.”Visualising her thoughts resulted in a positive effect according to the therapist: “It provided satisfaction for her because it addressed both the traumatic memory and the positive act of creating a fulfilling image”. However, the client mentioned that she finds this still challenging: “It is difficult to

Fig. 11. *"New family"*.

Fig. 12. *"All those eyes".*

look at the work now because the guilt is perhaps even more present than anything else". The therapist described a breakthrough in AT compared to TAU because the client is able to speak about her primary and secondary emotions: "Both come out well now, being able to take apart the primary and secondary emotions creates more insights, and also how they interact. I think that worked out well."

Lynn told she felt alone sometimes, which indicates that she was able to feel and acknowledge her emotions. This is shown in the photo that she used for the box that is depicted in Figure. "Here again, I do not look happy, and I am standing there very alone near the deer statue in the garden of the orphanage. I wanted to make this a family photo". The therapist described that she was making clay dolls and became more united with her biological parents: "As a clay doll, she put herself with her parents. Doing so, she is reimagining the biological family situation that she never experienced. The idea was that she could feel that she had parents, and they are standing right there, so there is some rescripting in that." During the discussion of this box, Lynn mentioned that she experienced emotions, such as anger, especially towards her biological mother. At the same time, she was confused about this because her thoughts disapproved of her emotions. Lynn found it difficult that there were contradictions between thoughts and emotions: "I find it irritating, do I think about thoughts in my head that are maybe not even true? I do not know that either. I was never allowed to experience my emotions, maybe also not in the past. I always thought 'is it not really weird what I think or feel', so I always just kept my mouth shut. I never thought, talked or depicted anything about my adoption." By creating artwork using the TFAT protocol, Lynn and the therapist worked on the fact that you are allowed to experience your emotions and at some point, at some point there was the presence of a biological mother and father/progenitor related to her birth. For Lynn, reconstructing her biological family (Fig. 13) felt emotion triggering and confusing but also healing at the same time.

Art Therapist ***Interventions.*** The therapist suggested the use of the personal photo book of Lynn. According to the therapist working with her photos helped Lynn to process her emotions: "I asked her, can you pick a few photos that are important memories or the most important photos when it comes to memories of the adoption". This was in line with the TFAT protocol. A selection of the photos was made, and each session focused on one photo. Each photo was linked to a positive or

Fig. 13. *"Alone* vs.*my biological family".*

negative memory, this is described in the TFAT protocol as a positive or a traumatic memory.

Besides helping the client, the therapist also asked questions to make the client reflect on her process. The therapist mentioned several examples: "how does it feel when you look at this? For example, she made a small figure which represented herself. I asked her what the dialogue would be if the figure could talk to you?". The therapist used rescripting and reparenting techniques (Figure). Lynn agreed with the therapist about the interventions and attitude of the therapist. Relating to this, she mentioned the following: "She gave me freedom and space, did not tell me what to do. I also wanted to go too fast, but she gave me space to think for myself what I wanted with or what I felt by. For example, she asked which colours I wanted to use of which photo I wanted to use. Of course, she tried to inspire and help me, but she did not tell me what to do. She also asked questions, was very understanding and if I became critical of myself, she just said 'no, it is beautifully made' which made me feel less ashamed." Lynn showed her artwork and linked her descriptions of her experiences in AT to the different boxes, the use of materials, the themes that were important.

Lynn especially mentioned that validation of emotions by the therapist was pleasant: "There was a lot of understanding and I thought like 'oh I am allowed to feel like this, or it is like this'. " According to Lynn, this is something she can apply in her daily life: "I want to think about this when I feel sad or angry, that I am allowed to feel like this and that I am allowed to spend time with this unpleasent feeling".

The EPD showed that the client was struggling with experiencing her emotions. For example, the client mentioned that she was very disappointed that the court case was cancelled, this made her feel angry and sad. However, after a moment on the toilet, she flipped the switch, and she did not experience any emotions anymore. The client finished her lifeline during the final sessions, she was very emotional about everything, and she realised that this is her story based on her fantasy. She realised that she was experiencing a lot of emotions, which was contary to before when she always pretendet not to care.

Effects of Art Therapy using the TFAT protocol. Looking at the effect of the treatment, there was a positive change according to Lynn: "I do not think that I have ever shown this to someone, I never talked about it and the therapy did help". She was able to experience her emotions more, this was confirmed by the therapist: "It seems like you recognise your own emotions more". The client agreed with this. Nevertheless, she indicated that she still struggles with the consequences of the adoption: "Perhaps because it is still not completely clear to me, it remains difficult for me, and it is a grieving process. I find it difficult that not everything is solved now". The therapist observed a difference after the AT compared to before AT, she remarked ad follows: "I think that she was a lot more

tough for herself in the beginning, angrier. She was a girl that could easily get into an argument when she went out into the city, just to get rid of her aggression. Over time, she developed more compassion for herself, and she became less tough for herself. She had the courage to start a relationship with me by confiding in me. Above all, she has restored the relationship with herself during the therapy, she developed more compassion for herself."

Reflecting on the process, therapist said the following: "Lynn said 'I cry too fast these days' when she was halfway through the therapy sessions. She just started to experience her emotions more often, and at first, she experienced this as a burden because she was detached from her emotions, which is easier in a way. It is also normal that when you open up in therapy, and you start to experience your emotions, that the burden of suffering will increase a bit." Lynn brought the lifeline home because she wanted to practise acknowledging her emotions at home as well. She wanted to remind herself not to slip back into her old patterns, she mentioned the following: "It is something visual, I can literally see the photos, I can see literally the faces and what I designed around it in my art work" and "to make sure that I keep experiencing my emotions, otherwise I will start to use my coping mechanism again and thereby ignoring all my emotions and just carrying on".

A short summary is described in the EPD by the therapist about the process and the results: 'client created space for her emotions and her past. It is difficult for the her that she had no real memories of her adoption, but she has now created her own interpretation of it. This made her more in touch with her emotions whereas she used to be very detached. She took her timeline home; this will make her remember her progress. This will also help her to no longer avoid it'.

Identifying Experiences with the TFAT protocol. The experiences of the therapist regarding working with the TFAT protocol were discussed during the interview with the therapist. An advantage, according to the therapist, of the protocol was that it is already determined how many sessions will take place: "I think that the protocol also works well because you know in advance that there will be 10 sessions. Not 8 sessions, not 12 sessions but just 10 sessions". The therapist was pleased about the phases of the TFAT protocol: "It ends with an overview of all the events which have been important, and we mapped that out using photos. First you have the exploration phase where focus on one memory per session. You discuss the memory more in depth and it ends with a kind of conclusion". The therapist realised that it is not realistic to resolve traumas in 10 sessions, often you might need more time. The therapist interpreted the TFAT protocol attuned to her client to be able to provide customisation. The therapist explained that she is enthusiastic about the TFAT protocol, and she now uses it more often.

Integration of quantitative and qualitative data

An integrated view of the two data sets shows how the quantitative and qualitative data complement each other, when/how they differ. The quantitative results of the PCL-5, SERATS, BDI-II, RS, RSES and MHC-SF questionnaires post TFAT showed an improvement compared to the first measurement which means; reduced PTSD symptoms, reduced depression symptoms, the client scored to be able to articulate her emotions more easily and an increased mental resilience, self-esteem and positive mental health. The scores of all questionnaires were consistent during the follow-up phase. All the results were within the stability envelope, except the BDI-II and the EW subscale of the MHC-SF, indicating reliable results. The qualitative data confirmed these results and also added to this that the client was more in contact with her emotions based on the interview data. The client created artwork, and she stated that this helped her with acknowledgement of her emotions and acknowledgement of the pain of her adoption. Furthermore, she reported that she learned to have more self-compassion. In addition to the quantitative results, the qualitative results show somehow more sensitive, subjective but also conclusion enriching aspects. The interview with the art therapist showed additional positive experience of working with the TFAT protocol. An advantage according to the art therapist was the structure of the sessions and the limit of 10 sessions. The client herself did not mention this. The art therapist would want to use this protocol more often.

Discussion

This study focused on the effect of AT using the TFAT protocol on clients who experience symptoms of PTSD. It was hypothesized that AT treatment is a good fit for people who are traumatized, especially for those who struggle with verbal therapy. The results of the questionnaires, the data from the interviews, the artwork of the client and the EPD were studied to analyze the effect and experiences with the TFAT protocol. The PTSD symptoms of the client in this study were clinically significant decreased according to Boeschoten et al. (2014). Furthermore, the depression symptoms also decreased, the client's mental health increased, along with her resilience, self-esteem and ability to control her emotions compared to the first week of the intervention phase. The scores of all questionnaires were stable in the follow-up phase. The client learned to reflect and acknowledge her emotions and also be more self-compassionate. Both the client and the art therapist consider working with the TFAT protocol to be of added value.

The study has several strengths. Firstly, this case study used a mixed methods design which enabled us to gather data from numerous angles. The use of multiple methods ensures that the methods complement each other. In addition, the strengths of one method neutralise weaknesses of the other method. Thus, a mixed method design gives a more accurate picture of the results (Verleta, 2019). Secondly, this case study collected a lot of data points which is crucial in a SCED design. Five of the six validated questionnaires were utilized each week to show the client's progress and to strengthen the reliability of the results (Van de Water, 2018). SCED design is suitable when scores might vary. Variations are fairly common in people with emotion regulation problems such as trauma and personality disorders, where the moods can change strongly per day or even per moment. The SCED design is then suitable because from the weekly measurements a line over time is created that does not depend on 1 moment in time but shows a development over time. Thirdly, the TFAT protocol provided an approach to hold on to and provides the opportunity for good preparation of the art therapist. This contributes to uniformity of all SCEDs that are going to be part of the MBSCED (Research Group Arts & Psychomotor Therapies in Health Care, 2024), and thereby it contributes to standardization (Kuin & Boyer, 2020).

A few limitations of our study should be considered. Firstly, due to the fact that this is a single case study it is not possible to generalize the results. However, this study provides sound insight into the effect of AT and TFAT in a client with PTSD related symptoms. Secondly, a significant shortcoming of visual analysis is its inability to identify subtle but consistent treatment effects (Kazdin, 2011). Nonetheless, visual analysis was used in this study to determine the reliable effect of the interventions as this can encourage further research with statistical significance (Lane & Gast, 2014). Thirdly, there is no baseline phase which means no phase of stable symptom intensity has been measured before starting treatment (Katz, 2021). In our study, the client is his own control to evaluate change at the end of the study (Gast, 2010). Even though there is no baseline phase, we are still able to measure progress because we have the results of the questionnaires of week 1. Finally, there is a possibility of confirmation bias, which includes flawed reasoning, faulty logic, and poor judgment (Rossmo & Pollock, 2019). The interviewers were both involved in the study, possibly leading to confirmation bias. However, the second author (FW) was not directly involved with the client.

With regards to the literature, Henderson et al. (2007) showed that AT resulted in reduced trauma symptoms and severity. Furthermore, Campbell et al. (2016) showed that AT alongside cognitive processing therapy resulted in reduced PTSD symptoms in veterans. Finally, the

relationship between the TFAT-protocol and clients who experience PTSD symptoms was evaluated in one previous pilot study. In line with our results, the study of Schouten et al. (2019) showed that the TFAT protocol was found to be acceptable, feasible and applicable in reducing PTSD symptoms in adult refugees. In the present study, more questionnaires were frequently completed than in the studies described above, thereby creating a more specific or accurate picture of the effects of AT and TFAT.

Results of our study indicate that the TFAT protocol positively affected PTSD symptoms in this case. The clinically significant decreased PTSD symptoms show that the client is experiencing less PTSD symptoms than before. Previous studies showed that clients with PTSD have difficulty in regulating their emotions (Brodzinsky et al., 2022; van Toorenburg et al., 2020; Wolkenstein et al., 2022). According to the results of the SERATS questionnaire, the client was able to regulate her emotions more easily over time. This is in line with the interview and the EPD, the client was better able to regulate her emotions as a result of AT. In addition to this, impaired emotion regulation is also linked to depression (Berking et al., 2014; Compare et al., 2014). During this study, a reduction of depressive symptoms is observed, which correlates to better emotion regulation. However, only 40% of the results of this questionnaire were within the stability envelope, which indicates less reliable results. This could be due to the BPD symptoms of client. Characteristics of BPD are mood swings in which the client can experience depressive symptoms (Selby et al., 2009). Studies showed that there is a connection between (childhood) trauma experiences and difficulty with emotion regulation in people with BPD (Alafia & Manjula, 2020; Bozzatello et al., 2021; Chapman, 2019). Similar fluctuations were observed in the emotional wellbeing of the client, which can also be due to BPD symptoms. Keyes (2002) has described how to analyse the results of the MHC-SF questionnaire. Based on this description, the mental health of the client was improved to a moderate score at the end of AT. The study by Marshall et al. (2019) showed that positive emotions or experiences were associated with better well-being. In the interview, it is described that the client gains positive experiences such as learning to acknowledge her emotions and increasing self-compassion. These positive experiences also contribute to increased resilience (Lefebvre et al., 2020). According to Pénzes (2020), AT boosts client resilience through experiences that emphasize adaptability. The art therapist can use a variety of visual tools and strategies for these experiences. In the interview, the client mentioned that the art therapist was non-judgemental, and this also contributes to increased resilience (Kaimal et al., 2022; Kalmanowitz & Ho, 2016). Finally, the TFAT protocol contributed to increased self-esteem of the client. In line with this study, Roghanchi et al. (2013) showed an increase in self-esteem in clients after 10 weeks of AT. In addition, Chiang et al. (2019) showed that AT has a positive effect on self-esteem of someone with trauma symptoms. Thus, all the used methods show that the TFAT protocol is effective in this client with PTSD symptoms. When the larger MBSCED-study (Heijman et al., 2024) is completed and the results are in line with this study, further research could focus on clients with specific trauma so the TFAT protocol can be beneficial for more specific target groups.

The results of the questionnaires during the follow-up phase were consistent. In addition, these results were within the stability envelope, which means that we can speak of a high degree of reliability of these results (Lane & Gast, 2014). This indicates that effects of AT are still visible after completion of the TFAT protocol. Although the follow up phase was short with a duration of only three weeks, this might suggest that the AT could be long-term beneficial (Malchiodi, 2020; Uttley et al., 2015).

In conclusion, this case study showed that the TFAT protocol reduced trauma and depression symptoms. Additionally, the client's mental health increased, along with her resilience, self-esteem and ability to control her emotions.

CRediT authorship contribution statement

Suzanne Haeyen: Writing – review & editing, Visualization, Validation, Supervision, Methodology, Investigation, Conceptualization. **Femke Wanten:** Writing – original draft, Visualization, Investigation, Formal analysis, Data curation.

Data availability

The authors do not have permission to share data.

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Statements

Permission has been obtained for using images of the artwork. The authors have no competing interests to declare. This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

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