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*"The most beautiful thing a person can experience is to wonder about the mysterious;
it is the fundamental emotion that creates true art and true science."
(Albert Einstein)*



Chapter 1

General Introduction



Introduction and aim

Anxiety is a major problem for individuals within our society, causing suffering and impairment in daily life. One in every five adults in the Netherlands will face serious anxiety problems during life (Nederlands Kenniscentrum Angst en Depressie, 2019).

Frequently used interventions, like Cognitive Behavioural Therapy (CBT) and pharmacotherapy, are not always successful in anxiety treatment. Therefore, many other interventions are offered, with different intensity and different levels of evidence of effectiveness according to the Multidisciplinary Guideline Anxiety Disorders (van Balkom et al., 2013). One of these provided interventions is art therapy, often used as an additional treatment next to CBT and pharmacotherapy.

Art therapy uses visual art exercises to elicit 'experiences' and 'insights', and by using this method it is hypothesized that personal development is stimulated and mental health is improved. Art therapy has several variants, of which anthroposophic art therapy (AAT) is one. Although AAT is used widely in western society, hardly any research has been conducted into the effectiveness of this treatment. Also, the content of the therapy is not well described and working mechanisms are not clear. This is mainly due to the lack of a research tradition within the AAT profession. AAT therapists are not used to provide data for research or to systematically evaluate the effectiveness of their treatment (Abbing & Baars, 2012). The lack of studies on the effectiveness of AAT makes it difficult to evaluate its usefulness and the justification for its application.

To gain insight into the possible value of art therapy in anxiety treatment, thorough research is required and two research objectives are obvious:

- 1) to assess the effectiveness of art therapy in anxiety in adults, and
- 2) to explore working mechanisms of AAT

In this introduction, the concept of anxiety and the supposed working mechanisms of art therapy are described. In addition, the status of evidence of the effectiveness of AAT on anxiety is evaluated, to explore the current knowledge gap that needs to be addressed.

Anxiety

Anxiety needs to be differentiated from fear. Fear is a normal and functional response to danger or threat (Rosen & Schulkin, 1998). It can be detected in a physical reaction, the so-called stress response, with typical symptoms such as increased heart rate, heart pounding, shortness of breath, trembling or shaking hands, dizziness, dry mouth, light-headedness, increased muscle tone, sweating and increased attention to the dreaded stimuli, depending on the intensity of the stressor and the response. The stress response enables a person to act quickly upon eminent danger. The sensory perception of a stressor, coupled with an emotional association and cognitive framing, causes the stress response. Normally, an individual can downregulate these responses as soon as the stressor disappears.

Not only external objective danger or threat can evoke a stress response, psychosocial stressors can cause a stress response as well. Individuals in current western society are known to be frequently exposed to social stressors, which can lead to a chronic stress response with large effects on internal regulation functions due to disrupted hormone balance that also influences the brain function (e.g. Davidson & McEwen, 2012). Chronic stress can dysregulate the immune system (Cole, Hawkey, Arevalo, & Sung, 2007), can influence our DNA by epigenetic mechanisms (Epel, Blackburn, Lin, Dhabhar, Adler, Morrow, & Cawthon, 2004) and is thought to result in many physical and psychological problems, such as arteriosclerosis, diabetes, tumours, intestinal problems, fibromyalgia, pain, chronic fatigue, depression and anxiety disorders (Capel, 2017).

The difference between fear and anxiety is that anxiety involves the expectation of future threat (APA, 2013). A fear response has a short duration and is focused on the present situation, whereas anxiety is defined by a longer duration of the emotional state of fear and is typically caused by negative expectations about future events and is usually more generalized, leading to excessive caution, which interferes with adaptive functioning and use of coping skills (Sylvers, Lilienfeld, & LaPrairie, 2011). Clark and Watson (1991) describe that anxiety is characterized by negative affect (NA) and physiological hyperarousal (PH). People with high levels of NA tend to have a negative perception of themselves and their environment, and have negative expectations of the future and of other people (Watson & Clark, 1984; Jeronimus, Riese, Sanderman, & Ormel, 2014). Due to the PH, which is a frequent or 'constant' stress response, people with high levels of anxiety often present 'round up' or agitated.

Anxiety disorders

According to the American Psychiatric Association (APA, 2013), typical anxiety responses can accumulate to an anxiety disorder when the anxiety symptoms are disproportionate to the actual danger or threat, are increasing and become permanent. This differentiates an anxiety disorder from the usual fear and anxiety that is experienced by every person in daily life to some degree. Anxiety disorders are believed to arise from specific psychological characteristics that result from genetic and neurobiological factors that interact with social factors (Hassink-Franke et al., 2012). This includes hypersensitivity to stress and the tendency to experience strong negative emotions (nervousness, sadness, anger), which implies high impact on quality of life.

The Diagnostic and Statistical Manual of Mental Disorders (DSM-5; American Psychiatric Association (APA), 2013) distinguishes between different types of anxiety disorders. The most common anxiety disorders are phobias, followed by social anxiety disorder (SAD), generalized anxiety disorder (GAD) and panic disorder (PD) (Anxiety and Depression Association of America [ADAA], 2018). Phobias refer to anxiety that is related to a specific stimulus, such as heights or spiders, often exist isolated and therefore usually don't affect daily life in general. Other anxiety disorders usually have an impact on daily life, which is illustrated by the description of the main symptoms, based on DSM-5 classification (APA, 2013):

- People with SAD have a general intense anxiety towards social or performance situations. They worry that actions or behaviours associated with their anxiety will be negatively evaluated by others, leading them to feel embarrassed. This worry often causes people with social anxiety to avoid social situations. Social anxiety disorder can manifest in a range of situations, such as within the workplace or the school environment.
- People with GAD suffer from excessive anxiety or worry about a number of things such as personal health, work, social interactions, and everyday routine life circumstances. The anxiety can cause significant problems in areas of their life, such as social interactions, school and work.
- People with PD experience recurrent unexpected panic attacks. Panic attacks are sudden periods of intense anxiety that occur quickly and reach their peak within minutes. Attacks can occur unexpectedly or can be brought on by a trigger, such as a feared object or situation. People with panic disorder often worry about when the next

attack will occur and actively try to prevent future attacks by avoiding places, situations or behaviours they associate with panic attacks. Worry about panic attacks, and the effort spent trying to avoid attacks, cause significant problems in various areas of the person's life and may e.g. include the development of agoraphobia: fear for situations outside the home where leaving might be difficult or impossible in case they have panic-like reactions or other embarrassing symptoms.

Although the anxiety disorders may have different triggers, they share underlying features (Cisler, Olatunji, Feldner, & Forsyth, 2010; Rosellini, Boettcher, Brown, & Barlow, 2015). An important feature that applies to all anxiety disorders is the exaggerated cognitive appraisal that is associated with the threatening situation: hyper-alert cognitive schemas lead to pathological anxiety (Beck & Haigh, 2014). Emotions are functional in daily life, guiding our attention to what is important and function as a signal to take action (Frijda, 1986). Emotions therefore support adaptive functions (Fresco, Mennin, Heimberg, & Ritter, 2013), although the cognitive labelling of the emotion is not always functional. Individuals with anxiety are believed to experience high levels of subjective emotional intensity (Mennin, Heimberg, Turk, & Fresco, 2005).

Emotions and the regulation of emotions are part of a larger self-regulation system. Self-regulation, the ability to adapt behaviour to changes in the internal and external environment, is defined by Blair and Diamond (2008) as a dynamic process, influenced by behavioural, cognitive and emotional aspects. The individual uses cognitive processes to adjust and adapt emotions and behaviour, in order to maintain positive social relationships, productivity, achievement, and a positive sense of self (Dijkhuis, Ziermans, Van Rijn, Staal, & Swaab, 2017). Self-regulation is considered to consist of three components: stress regulation, cognitive regulation and emotion regulation (or social regulation). These three components influence each other through the overlap in the neurobiological systems involved. Anxiety disorders are associated with dysfunctions in self-regulation (Mennin, Heimberg, Fresco, & Ritter, 2008; Levine, Fleming, Piedmont, Cain, & Chen, 2016).

Prevalence and impact of anxiety disorders

Nearly 29% of the population will be affected by an anxiety disorder somewhere in life (Kessler, Berglund, Demler, Jin, Merikangas, & Walters, 2005). It is estimated that 12,5 % of

women (one out of eight) and 7,7 % of men (one out of thirteen) in the Netherlands suffer from anxiety disorders (Dutch National Institute for Public Health and the Environment, 2017a). Anxiety disorders rank the second highest in terms of 'Years Lost' due to Disabilities (YLDs). The sum of YLDs, for people living with a health condition or its consequences, together with Years of Life Lost (YLL) due to premature mortality in the population, is a measure of Disability-Adjusted Life Years (DALYs). One DALY represents one lost year of "healthy" life and is a measure of the burden of disease; "the gap between current health status and an ideal health situation where the entire population lives to an advanced age, free of disease and disability" (WHO, 2019). In the Dutch DALY order, anxiety disorders are the fifth, behind coronary heart diseases, strokes, diabetes and COPD (Dutch National Institute for Public Health and the Environment, 2018).

The presence of an anxiety disorder is associated with a lower quality of life and a negative impact on psychosocial functioning (Cramer, Torgersen, & Kringlen, 2005; Mendlowicz & Stein, 2000). People with high levels of anxiety symptoms often show comorbidity: more than half of the people with anxiety disorders also suffer from symptoms of depression (Dutch National Institute for Public Health and the Environment, 2017b).

In 2015, the costs of care for anxiety disorders in the Netherlands amounted to 807 million euro. In reality this amount may be (much) higher, since a considerable part of the costs spent on psychological disorders cannot directly be attributed to a diagnostic group (Dutch National Institute for Public Health and the Environment, 2018) and there are other related societal costs such as sick-leaves, job loss, etc., that are not included in the estimation.

From the low percentage of people with GAD that receives treatment, which is only 43,5%, one can conclude that signalling and treatment can be improved. According to the Anxiety and Depression Association of America (ADAA), nearly 36% of people with SAD report experiencing symptoms for 10 or more years before seeking help (ADAA, 2018). In conclusion, the negative impact of anxiety disorders on quality of life is significant.

Treatment of anxiety

When a patient presents with anxiety symptoms, a general practitioner in the Netherlands follows a stepped-care treatment as prescribed by the *Nederlands Huisartsen Genootschap* (NHG) in the NHG Standard for Anxiety treatment (Hassink-Franke et al., 2012). This stepped-

care treatment of anxiety consists of successively: psycho-education, CBT, pharmacotherapy or a combination of CBT and pharmacotherapy.

CBT is an evidence-based intervention for anxiety, focusing on the cognitive labelling. Originally introduced over 50 years ago by Aaron Beck (Beck, 1963; 1964; 1976), CBT aims to directly alter dysfunctional ways of thinking (e.g. irrational or automatic thoughts) and by that changing dysfunctional behavioural patterns or attitudes (Hofmann, Asmundson, & Beck, 2013; Carpenter, Andrews, Witcraft, Powers, Smits, & Hofmann, 2018). CBT is based on the theory that individuals can become more functional and adaptive by intentionally modifying their cognitive and behavioural responses to the circumstances they face (Dobson & Dobson, 2009; Dobson & Dozois, 2010). CBT is a structured, collaborative process that helps individuals to consider both the accuracy and usefulness of their thoughts through processes of exploration, examination and experimentation (Hollon & Dimidjian, 2009). According to Beck & Dozois (2011, p. 400): *“patients learn how to become scientific investigators of their own thinking—to treat thoughts as hypotheses rather than as facts and to put these thoughts to the test. Patients learn to modify their thoughts so that they are congruent with existing evidence. They learn to shift their cognitive appraisals from ones that are unhealthy and maladaptive to ones that are evidence-based and adaptive”*.

The CBT intervention for anxiety aims to change maladaptive beliefs about the probability and magnitude of the anticipated harms by using behavioural (exposure) and various cognitive techniques (e.g. altering dysfunctional thoughts) (Hofmann & Smits, 2008; Smits, Julian, Rosenfield, & Powers, 2012). A recent systematic review in which the efficacy of CBT for anxiety-related disorders was examined, included 2843 patients (41 placebo-controlled trials) and showed small to moderate effects of CBT on anxiety symptoms and quality of life (Carpenter et al., 2018). Exposure strategies led to higher treatment success compared to cognitive or combined cognitive and behavioural intervention techniques. The authors conclude that since treatment effects are small to moderate, improvement of intervention can possibly be gained by exploring other treatment methods, especially for SAD and PD (Carpenter et al., 2018).

Pharmacotherapy encompasses treatment with benzodiazepines, antidepressants, anxiolytics, antipsychotics or antiepileptics, with the overall aim of suppressing the physical sensations and feelings of anxiety and panic.

Despite the proven effectiveness of CBT and pharmacotherapy (Hooke & Page, 2006; Pohl, Feltner, Fieve & Pande, 2005; Hofmann & Smits, 2008; Kjenisted & Bleau, 2004), it is estimated that 30%–60% of patients do not benefit from these interventions and still suffer from serious anxiety symptoms after treatment (Heldt, et al., 2003; Tyrer, Seivewright, & Johnson, 2004; Linden, Zubraegel, Baer, Franke, & Schlattmann, 2005; Zou, Ding, Flaherty, & Dong, 2013; Pelissolo, 2008; Katzman et al., 2014). Although generalized anxiety disorder (GAD) is associated with substantial personal and societal costs, the treatment success of GAD is lower than other anxiety disorders (Newman, Llera, Erickson, Przeworski, & Castonguay 2013). Possible explanations for lower treatment success are illustrated by a study on GAD, which showed that protocols are not always followed very well and that evidence-based treatments may not work for all subgroups (Van der Heiden, 2016). Furthermore, anxiety disorders have a recurrence rate of 54.8% within four years, (Scholten et al., 2016).

When all steps of the stepped care treatment are taken and have not resulted in sufficient treatment effects, ‘the handicap model’ can be applied (Van Balkom et al., 2013). This includes low-frequency contacts with the emphasis on guidance, explanation and preventing complications in different areas of daily functioning, to support quality of life. Supporting interventions aim at reducing the influence of anxiety on personal functioning and reducing impending factors for psychological and pharmacological interventions (Van Balkom et al., 2013; Hassink-Franke et al., 2012).

The arts therapies are classified as supportive interventions, according to the Multidisciplinary Guideline on Anxiety Disorders.

Art therapy

The domain of arts therapies include visual art therapy (referred to as art therapy), music therapy, dance/movement therapy, drama/speech therapy and psychomotor therapy (Federatie Vaktherapeutische Beroepen [FVB], 2018). The *Zorginstituut Nederland* (ZiN, National Health Care Institute) concluded in 2015 that the effectiveness of the arts therapies is insufficiently studied and that evidence for effectiveness of the therapies is largely lacking (Borgesius & Visser, 2015). However, the Trimbos Institute, the Dutch institute on mental health research, describes the arts therapies interventions as “potentially effective treatments” that should be evaluated further (Van Balkom et al., 2013).

Art therapy, the subtype of the arts therapies that uses the visual arts (e.g. painting, drawing, sculpting, clay modelling), is an experience-oriented therapy and is provided in clinical practice as standalone therapy or in multidisciplinary treatment programs for anxiety disorders.

Within the multidisciplinary guideline (Van Balkom et al., 2013), art therapy is not part of the recommended treatments, because the evidence of effectiveness of art therapy for anxiety disorders cannot easily be judged, due to a lack of studies. Art therapy is considered an important supportive, but yet insufficient studied intervention for mental illness in general (Van Balkom et al., 2013). This is one of the reasons that art therapy is currently classified as supporting intervention, although art therapists, based on their clinical experiences, state that art therapy is not only supportive but may also directly reduce anxiety symptoms

Perceived working mechanisms

Based on clinical experience it is stated by art therapists that, because of its non-verbal character, art therapy can be suitable for individuals with anxiety, especially if they have difficulty in cognitive (re)labelling of their feelings, or if the opposite is the case: individuals that are very focused on cognitive labelling and use rationalizing as a psychological coping mechanism to deal with their anxiety (Gold, Vorack, & Wigram, 2004; Smeijsters, 2008). Moreover, the non-verbal AT approach is considered to be suitable for individuals with high levels of anxiety, since talking about anxiety and traumas can evoke fear and associated physical reactions (Posthuma, 2001). It is stated that 'distance to the anxiety' can be provided when creating visual artwork. To 'distance' oneself from the emotion during the act of creating art is believed to improve cognitive regulation of emotions (Smeijsters, 2008). The supposed mechanism is that during the process of creating an artwork, one can experience a feeling of being 'in control', which helps to counterbalance the overwhelming experience of anxiety (Van Gerven, 1996). Some studies have indicated a possible stress regulating effect of AT, by stimulating a 'flow-like' state of mind that is attributed to relaxation (e.g. Kaimal, Ray, & Muniz, 2016; Sandmire, Gorhan, Rankin, & Grimm, 2012). This implies that self-regulating processes may play a role in the reduction of anxiety symptoms through art therapy. However, the assumptions of working mechanisms seem to be merely based on anecdotal evidence and expertise and need further substantiation.

Art therapy has a variety of subtypes, that are based on various perspectives from psychoanalysis, cognitive-analytic therapies, compassion-focused therapy, attachment-based psychotherapy and client-centered approaches, like mindfulness and mentalization-based treatments (British Association of Art Therapists [BAAT], 2018).

Anthroposophic art therapy

One of the AT variants with a client-centred approach and similarities with mindfulness-based treatments is anthroposophic art therapy (AAT). AAT is used in 28 countries (Hamre et al., 2009) and was developed by Dr. Margarethe Hauschka in the beginning of the 20th century as a part of anthroposophic medicine (Box 1) (Hauschka, 2004).

Box 1. Anthroposophic Medicine

ANTHROPOSOPHIC MEDICINE is an integrative diagnostic and therapeutic concept, developed from 1921 onwards, as an addition to conventional healthcare and is practiced today in over 60 countries. It is based on Rudolf Steiner's anthroposophy (IVAA, 2018), in which a human being is considered as a whole entity of body, mind/ soul, and individuality (Baars, Kiene, Kienle, Heusser, & Hamre, 2018). AM integrates conventional medicine with additional treatments, such as anthroposophical pharmacotherapy, massage therapy and arts therapies (visual arts, music, speech/drama and dance (eurhythmy)) (IVAA, 2018; Kienle, Albonico, Baars, Hamre, Zimmerman, & Kiene, 2013; Baars & Hamre, 2017).

The Dutch association of anthroposophic art therapists (Nederlandse Vereniging voor Kunstzinnige Therapieën [NVKT]) describes AAT as follows: "In AAT, specific artistic exercises are used that are supposed to provide new experiences and insights, and create an entrance for working on health and personal development" (NVKT, 2018).

AAT (Box 2) is primarily an individual therapy, used in somatic and mental healthcare. The therapy is in line with the concept of 'positive health', in which health is not seen as "a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity", as defined by the World Health Organization (WHO, 2006), but as the ability to adapt and self-manage (Huber et al., 2011) or, in other words: the ability of people to self-regulate physical, emotional and social life challenges. In this current definition of health, not only the physical and mental functioning is part of health, but also meaningfulness (a spiritual / existential dimension), quality of life (well-being, experiencing happiness, enjoying, balance)

Box 2. Anthroposophic Art Therapy

ANTHROPOSOPHIC ART THERAPY *uses an expressive approach (expression of emotions, feelings and thoughts), combined with an 'impressive' or inwardly oriented approach (Uitgeest, 2016). The client is guided to (sub- or unconsciously) express feelings and life experiences. The therapist provides structured artistic exercises with the therapeutic aim of improving the health and resilience of the individual. These exercises are often structured and provide "impressions": profound experiences of color and shape. The underlying idea is that these impressions have both psychological and physiological effects and activate the self-regulating ability of the client (Christeller et al., 2000; Hauschka, 2004; Rolff & Gruber, 2015).*

and social participation (meaningful relationships, social contacts, being accepted, social involvement, meaningful work).

Although AAT has a long history and is developed through experience and clinical expertise, the evidence of its effectiveness and efficacy is unclear.

Evidence based practice

Since the 1990s, healthcare has been increasingly influenced by the development of evidence-based medicine (EBM). EBM was defined in 1992 as 'the process of systematically searching, assessing and applying contemporary research outcomes as the basis for clinical decision-making' (Evidence-Based Medicine Working Group, 1992). In 1996, the definition by David Sackett was extended with a role for the clinical expertise of the healthcare professional and with a value judgment by the patient (Sackett, Rosenberg, Gray, Haynes, & Richardson, 1996). Where the term EBM is reserved for medicine, the term evidence-based practice (EBP) is used for all care disciplines (e.g. psychotherapy, occupational therapy, physiotherapy, art therapy and speech therapy). EBP is about decision-making (Kuiper, 2004), and aims to encourage clinicians to make rational decisions based on three pillars (Lucas, 2015): 1) the patient's clinical condition and circumstances, 2) the patient's preferences and his behaviour in relation to the health problem, and 3) the best available external evidence for the treatment of the present clinical problem (Fig. 1). The latter often means (but not exclusively) evidence obtained from scientific research. These aspects are integrated in the decision-making process (Lucas, 2015).



Figure 1. Three pillars of evidence-based practice

Over the past decades, the emphasis within the EBP development has been increasingly on the third pillar: the quality of research results from effectiveness research and the standardization of care (protocols and guidelines). The vision behind this development was that if the tested, standardized care was delivered, for which the best quality scientific evidence was available, it could be ensured that the patient received the right care and that the costs could be controlled (Health Council, 1991; Lucas, 2015). EBP has been more and more implemented in healthcare practice in recent decades (in medicine) and has thus made a positive contribution to improving quality of care.

Evidence based practice in anthroposophic art therapy

What is the status of AAT, according to the EBP model?

The anthroposophic art therapist bases his/her actions mainly on the first and second pillar of EBP: (1) clinical expertise, and (2) the patient's preferences. With regard to clinical expertise, AAT has a long professional history of nearly 90 years and has developed a broad expertise that is transferred by expertise-based and practice-based book chapters, non-scientific publications and education. It is known that experts can treat complex and unique, context-specific problems through tacit knowledge, craftsmanship or the 'clinical eye' (e.g. Snoek, 1993; Glas, 1997; Robertson, 2001). Experts have developed specific information processing skills: the intuitive recognition and application of a pattern ('Gestalt') (e.g. Van der Laan, 2006), leading often to appropriate conclusions and correct predictions (Baars, 2011).

With regard to patient preference, anthroposophic art therapists adjust their treatment to the individual patient continuously by monitoring and adapting the treatment process carefully. Therapists have learned to manage complex interventions, taking the individual context including the patients' physical, mental and social condition, current circumstances, values and preferences of the patient into account (Baars & Van der Bie, 2009). These competences are developed in education and are secured in a network organization through registration, quality criteria and supervision on national level (NVKT), EU level (European Academy for Anthroposophic Arts Therapies [EA]) and worldwide (ICAAT; IFAAET). This way of working, in which the therapeutic process is continuously adapted to the individual, is in line with the latest development in healthcare regarding *context-based practice* (Raad van Volksgezondheid en Samenleving [RVS], 2017).

For describing the status of the third pillar, there is a variety of methods and models to judge and categorize evidence from available research. One of these is the 'effect ladder' (Van Yperen & Veerman, 2008). The reported evidence of effectiveness of an intervention can be assessed with this effect ladder: the more evidence, the stronger the statement about the effectiveness. To be able to judge the current situation of the third pillar, the evidence in the area of AAT & anxiety, the different levels of evidence are described below and are summarized in Table I.

The status of AAT on level 1 is that there are some expert descriptions of AAT. A survey (Baars & Hoekman, 2013) amongst 350 Dutch AATs, indicated that treatment of anxiety was one of the best practices in AAT. The content of this AAT intervention for anxiety is described, based on interviews with six experts (therapists with a broad experience with adults with anxiety) combined with scholarly literature leading to a list of treatment objectives that are embedded in an individual treatment plan for a client with anxiety (Werkveldteam GGZ, 2015) (Box 3). There is no clear description of the treatment for anxiety in the structure of a complete treatment plan, because the intervention is tailored to the individual patient, but there are descriptions of specific exercises that are indicated for patients with anxiety (Box 3).

On level 2, supposed working mechanisms of the therapy in general are described to a limited extent. Examples are textbooks of AAT (e.g. Christeller, 2000, Hauschka, 2004). Hypothetical working mechanisms of some of the exercises in the treatment of anxiety are described by expert art therapists (Mees-

Christeller, 1997; Avelingh, 1997) (Box 3), but these theories or hypotheses are currently not or hardly generally accepted and are not content-wise connected to research-supported theories.

On level 3 in the area of AAT, empirical studies have been carried out on a very limited scale. There is one cohort study on anxiety disorders (Hamre et al., 2007; 2009). Long-term reduction of anxiety symptoms and improvement of quality of life was reported. No control group was used.

No controlled trials are performed on AAT previously, so there is no level 4 research. If we broaden our scope to art therapy in general, we do find that over the last decade, art therapy has increasingly been

studied, with some RCTs that aimed at the effectiveness of art therapy on anxiety symptoms. These outcomes will be discussed in the second chapter of this PhD thesis.

Box 3. AAT treatment for anxiety

AAT TREATMENT FOR ANXIETY:

Treatment goals as described by AAT experts: *relaxation; strengthen connection with oneself (own feelings and/or body); experience own boundaries; learn to take space; strengthening the objectivity ("coming into reality") and strengthen self-confidence.*

Specific exercises that are indicated for patients with anxiety involve observational drawing, form drawing and light-dark exercises with charcoal (Mees-Christeller & Mees, 2009). Clay modeling of platonic solids is regularly used in people with anxiety disorders (Mees-Christeller, 1997; Avelingh, 1997; Baumgart, 2015; Essink, 2016; Geuskens, 2014; Van der Lek, 2013).

Rationale behind the exercises, described by expert art therapists (Mees-Christeller, 1997; Avelingh, 1997), can be summarized as follows: *drawing from observation, e.g. objects or images from nature, asks for concentration and preciseness and aims to enable the patient to connect with reality. Drawing in perspective can provide a feeling of space, and the patient needs to take a position in different points of view. Drawing with charcoal (light-dark exercises) asks for courage and is thought to work into the bodily experiences, providing a feeling of warmth: "Fears are overcome in the harmonization of light and darkness" (Mees-Christeller & Mees, 2009, p.31). Clay modelling of animal and human forms requires a certain amount of solidity and is thought to provide an experience of affluence through the beauty and fullness of natural, vital shapes. Clay modelling of platonic solids is used in the treatment when clarity of mind is needed. This specific exercise requires concentration and carefulness, constantly correcting to find the right proportions of the mathematical forms. This is thought to strengthen the objectivity.*

Table I. Summary of evidence according to the effect ladder

Level	Nature of evidence	Based on	Current status of AAT for anxiety
4. Is the intervention proven effective?	Causal => <i>proven effective</i>	Comparative research	Non-existent
3. Is the intervention effective in practice?	Indicative => <i>preliminary effective</i>	Description, intervention theory and effect measures	One cohort study was performed and showed long term reduction of anxiety symptoms and improvement of QoL (Hamre et al., 2007; 2009).
2. Is the intervention effective in theory?	Theoretical => <i>promising</i>	Description and credible intervention theory (mechanisms)	Hypothetical working mechanisms are described, but are not research-based and are not connected to generally accepted theories.
1. Is the intervention well described?	Descriptive => <i>potential</i>	Description of intervention (target group, means, outcomes) and context	Therapy settings and specific artistic exercises are described in scholarly literature. Treatment goals and best practices are described, based on expert interviews and a survey (Werkveldteam GGZ, 2015; Baars & Hoekman, 2013).
0. Is the intervention implicit (black box)?	None => <i>implicit</i>	Expert knowledge	AATs treat clients mainly based on implicit knowledge. What they do exactly is described to a limited extent (Abbing & Baars, 2012).

Problem definition

To conclude from Table I, the evidence on the effectiveness of AAT in the treatment of anxiety is mainly at level 1, and AAT can thus be classified as an intervention with potential. The intervention is based on clinical expertise. Anthroposophic art therapists consider their intervention to be theory-driven, because it is based on theories from the anthroposophic worldview, but the specific AAT theory is not well described and not connected to general accepted theories. It can thus not be defined as a promising intervention (yet), because studies supporting level 2 are missing. With one study at level 3, there is some preliminary evidence for the effectiveness of AAT. AAT is not proven effective, because level 4 studies are lacking.

Why is scientific research in this domain scarce? An explanation can be found in the lack of a research tradition within the profession. To start with, AAT therapists are not used to contribute to research. Therapeutic processes are not systematically described and gathered, so therapists are not able to provide data for research (Abbing & Baars, 2012). Therapists lack time, financial resources, knowledge and research skills that are needed to perform good quality research (Baars, 2008). Moreover, there are factors that complicate research in AAT.

To start with, AAT is a complex intervention. Complex interventions are interventions that contain different components that interact with each other, and other characteristics that researchers need to include in setting up and conducting research. This includes, among other things, the number of interacting components, the number and the difficulty of the actions of the care provider and the client to be deployed, and the degree of flexibility or permitted adjustment of the intervention (Craig, 2013). For art therapy it is not only the client-therapist interaction that plays a role in the treatment, but also the interaction between client, art process and artwork. This is a process which contains many factors, most of them yet unknown. The anthroposophic background of AAT makes that a care professional works 'holistic' and pays attention to biological, physiological, socio-psychological and meaningful (spiritual) aspects of the client's condition. This too makes the AAT intervention complex, and complex interventions that involve many different dynamic factors cannot easily be evaluated using standard randomized controlled trial (RCT) designs. For complex interventions, other research methods are needed alongside RCTs. This is also described in a recent publication of the *Raad van Volksgezondheid en Samenleving* ([RVS] 2017), stating that the knowledge that RCTs provide is a reduction of reality. RCTs do not sufficiently take into account differences between patients and their personal values, with variety in implementation practices, and with the dynamic setting in which care takes place. The best thing to do can differ per patient and situation. The decision-making process, related to a specific client and a specific context, is an experiment in which different knowledge sources are connected. These knowledge sources include clinical expertise, local knowledge, knowledge from the patient and the context and values that are at stake. "Embracing the uncertainty and integrating different sources of knowledge within the specific context in which care is provided requires a more active role than that of the passive 'evidence user' " (RVS, 2017). This approach provides a base for case-based learning and application of case study methodology that supports professional decision-making in individualizing care approaches.

How should AT, as a complex intervention, be studied? Even though it is not easy, RCTs are needed in the area of AT because this design is 'the gold standard' for assessing the effectiveness of interventions. For known best practices (based on expert experiences), RCTs should be designed with preservation of the complex intervention, studying the realistic clinical practice. RCTs can also be used to test hypotheses of working mechanisms. These hypotheses need to be provided first through other research methods or can arise from expert

experience, practice knowledge and literature. Case studies, leading to case reports, are aimed at explicating expert experience and provide insight in the individualized approach that is used in AAT, and are therefore suitable for describing the content of the therapy, generating hypothesis on working mechanisms, and providing the first indications for evaluation of effectiveness.

Summarizing, the individualized approach in providing care to patients is supposed to be a strong feature of AAT: therapists have developed the knowledge and skills to adapt treatment to the individual patient and his/her relevant context. An important weakness is that there is hardly any good quality evidence of the effectiveness of AAT and its working mechanisms. In order to gain insight in the supposed value of AAT and the justification of the place of AAT in healthcare, high quality empirical research is needed. For the development of EBP in this profession, it is needed to investigate *if* AAT works and *how* it works. Besides, in order to support the growth of the body of evidence, therapists need to be supported in evaluating their work. Research in practice should be enabled by means of developing feasible data collection methods and research methods that are closely related to practice.

Research questions and outline

The main research question is: *Is there evidence for the effectiveness of art therapy in the treatment of anxiety in adults and which working mechanisms of anthroposophic art therapy can be identified?*

The hypothesis is that art therapy reduces anxiety symptom severity and improves quality of life and aspects of self-regulation.

This PhD thesis consists of an **effectiveness research section** (PART I, chapters 2, 3 and 4), aimed at studying the effectiveness of AT and AAT in the treatment of anxiety (disorders) and at the identification of factors that contribute to anxiety reduction, leading to hypotheses of working mechanisms for further research, and a **practice-based research section** (PART II, chapters 5 and 6), with the central question how case reports in AAT can be used in research. This part of our research was aimed at the development of a systematic data collection method and at development of a research method for AAT that supports description of the content of AAT and exploration of working mechanisms (case reporting).

The research questions, aims and methods are presented in Table II.

Table II. Overview of the studies

PART I – Effects of art therapy in the treatment of anxiety in adults			
	RESEARCH QUESTION	AIM	METHOD
Chapter 2	<i>What is the evidence so far of art therapy effectiveness in the treatment of anxiety in adults?</i>	To gain overview of evidence, benefitting populations, therapy characteristics and working mechanisms of art therapy for adults with (primary) anxiety.	Systematic review of RCTs and nRCTs
Chapter 3	<i>What is the effectiveness of three months AAT in women with anxiety disorders?</i>	To evaluate the effects of AAT on anxiety symptoms, quality of life and emotion regulation.	RCT comparing (1) a weekly individual AAT of 10-12 sessions to (2) a waiting list group.
Chapter 4	<i>What is the effectiveness of AAT on aspects of self-regulation and what factors contribute to anxiety reduction?</i>	To evaluate the effects of AAT on executive functioning and stress regulation; to explore if the working mechanism of AAT in anxiety can be explained by these factors.	RCT comparing (1) a weekly individual AAT of 10-12 sessions, to (2) a waiting list group.
PART II– Towards further hypotheses on working mechanisms of AAT: development of case report methodology for AAT			
	RESEARCH QUESTION	AIM	METHOD
Chapter 5	<i>Can the medical Case Report Guidelines be adjusted for use in AAT?</i>	To develop a case report guideline for AAT.	Qualitative design: document analyses, literature study, survey, focus groups.
Chapter 6	<i>How does AAT work on reduction of anxiety? What therapeutic elements may be connected to emotion regulation en executive functions?</i>	To provide insight in the therapeutic process of AAT in the treatment of anxiety, and to provide hypotheses for a theoretical framework.	Case study. Case report, written according to the CARE-AAT Guideline.

PART I – Effects of art therapy in the treatment of anxiety in adults

The first aim of our research was to review the existing effectiveness of art therapy for anxiety disorders and to study the effectiveness of AAT for anxiety (disorders). **Chapter 2** provides a systematic review of the evidence of effectiveness for AT in the treatment of anxiety. Chapters 3 and 4 originate from a RCT on the effects of AAT in women with anxiety disorders. In **Chapter 3** the effects of AAT on anxiety level, quality of life and emotion regulation are reported. **Chapter 4** addresses the effects of AAT on psychophysiological and neuropsychological anxiety

related parameters, and on the extent to which anxiety reduction is associated with change in these parameters, leading to preliminary hypotheses on the working mechanisms of AAT.

PART II – Towards further hypotheses on working mechanisms of AAT: development of case report methodology for art therapy

The second aim of our research was to contribute to the development of practice-based research in AAT, to support art therapists in contributing to the body of knowledge and the body of evidence.

Case reports can provide insight in therapeutic processes and open up the black box of art therapy. This creates the possibility for exploration and systematic description of the supposed working mechanisms, leading to hypotheses that can be tested in more controlled studies such as RCTs. Part II of this PhD thesis therefore focusses on the development of case report methodology for AAT and the application of this methodology. **Chapter 5** describes the development of a publication guideline for AAT case reports, based on the already existing medical CARE Guidelines (Gagnier et al., 2013). **Chapter 6** is a case description and aims to provide insight in the course of treatment that led to anxiety reduction in an individual case and explores the supposed role of regulating processes within this specific intervention process. It concerns a case report, of which the data from one therapeutic process was collected with the use of a previous developed documentation method for therapeutic processes in AAT (Abbing, Ponstein, Hoekman, van Hooren, & Baars, 2018). The case report is subsequently written according to the developed publication guideline.

Case reports, written following the guideline, have many benefits, according to the CARE group (www.care-statement.org): patients can review transparent information on therapeutic options; clinicians can improve peer-to-peer communication; researchers can use testable hypotheses from clinical settings (Driggers et al., 2016) and educators have examples to support case-based learning. Chapters 5 and 6 are also intended to provide the professionals with an example how the individual stories from practice can find their way to systematic scientific analysis.

In **Chapter 7 Summary and Discussion**, the key points of the various chapters are brought together and findings are evaluated.

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