



Universiteit
Leiden
The Netherlands

Art therapy & anxiety

Abbing, A.C.

Citation

Abbing, A. C. (2020, January 22). *Art therapy & anxiety*. Retrieved from <https://hdl.handle.net/1887/83276>

Version: Publisher's Version

License: [Licence agreement concerning inclusion of doctoral thesis in the Institutional Repository of the University of Leiden](#)

Downloaded from: <https://hdl.handle.net/1887/83276>

Note: To cite this publication please use the final published version (if applicable).

Cover Page



Universiteit Leiden



The handle <http://hdl.handle.net/1887/83276> holds various files of this Leiden University dissertation.

Author: Abbing, A.C.

Title: Art therapy & anxiety

Issue Date: 2020-01-22

"The medication has been lifesaving. But I think the art therapy was life-healing. Medication is something you can continue to use your whole life and nothing changes inside. But you do the therapy because you hope it changes you inside so that you can live without medication."
(Female participant, 52 years old)



Chapter 7

Summary and General Discussion



Summary

The aim of this PhD thesis was to investigate if art therapy is effective and to explore the supposed working mechanisms, with a focus on the treatment of anxiety.

The main research question was:

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?

Next to the first aim of investigating effectiveness and exploring working mechanisms, the second aim was to contribute to the development of the profession of art therapists, by equipping them with tools for systematic data collection and publication of case reports, in order to support art therapists in contributing to the body of knowledge and the body of evidence.

Art therapy is an often provided treatment option in mental healthcare, and is often indicated for anxiety disorders (Van Balkom et al., 2013). Anxiety is a major problem for individuals in our society (Nederlands Kenniscentrum Angst en Depressie, 2019). Preferred treatment for anxiety disorders according to Dutch health care standards (Hassink-Franke et al., 2012), consisting of cognitive behavioural therapy (CBT) and/or pharmacotherapy, is effective but not (sufficiently) beneficial for all patients (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). Other approaches (alone or in addition to/ combined with CBT and/ or medication) may be successful in specific subgroups of patients, but these interventions need to be transparent, measurable and replicable in order to assess their effectiveness. This applies also to anthroposophic art therapy (AAT), which is a subtype of art therapy with an emphasis on offering specific artistic exercises which are thought to have a 'health promoting' effect by providing the opportunity to practice specific skills, to strengthen coping and to explore one's own feelings and cognitions within a safe setting (NKVT, 2018; Christeller et al., 2000; Hauschka, 2004; Rolff & Gruber, 2015).

To provide patients with the best possible care, therapists need to work according to the criteria of evidence based practice (EBP). EBP consists of three pillars (Lucas, 2015). Pillar 1 (clinical expertise) and 2 (patient preferences) of the EBP model are currently applied in AAT

practice: anthroposophic art therapists have developed and described AAT specific knowledge and skills, and have the knowledge and skills to adapt treatment to the individual patient and his or her relevant context. Pillar 3 (evidence from effectiveness studies) is lacking in the support of AAT treatment, since there is hardly any evidence of the effectiveness of AAT due to a lack of research in this field.

In order to provide responsible, safe and justified care, the effectiveness of AAT needs to be evaluated and working mechanisms must be explored and substantiated.

Therefore, the following questions were addressed in **PART I** of this PhD thesis:

What is the evidence so far of art therapy effectiveness in the treatment of anxiety in adults?

What is the effectiveness of three months AAT in women with anxiety disorders, on anxiety, quality of life and aspects of self-regulation? And what factors contribute to anxiety reduction?

The evidence of art therapy effectiveness in the treatment of anxiety in adults

In **Chapter 2**, results of a systematic review are reported, summarizing the results of studies that address the effectiveness of art therapy on the reduction of anxiety symptoms in adults and providing an overview of intervention characteristics and supposed working mechanisms. Included were randomized and non-randomized controlled trials on art therapy for anxiety in adults. Thirteen databases were searched. Randomized controlled trials on this specific topic were scarce: only three studies met the inclusion criteria. The included studies have several flaws, resulting in high risks of bias, thus drawing conclusions on the effectiveness of art therapy for anxiety is impossible. It was concluded that the effectiveness of art therapy on anxiety has hardly been studied although it is often applied in mental health care. This emphasized the need for high quality trials studying the effectiveness of art therapy on anxiety. A narrative synthesis led to hypothesized working mechanisms of art therapy: to practice relaxation; to gain access to unconscious traumatic memories, thereby creating possibilities to investigate cognitions; and to improve emotion regulation. This systematic review showed the ‘evidence gap’ for a treatment that is commonly provided in clinical practice and this finding highlighted the importance of performing RCTs on the effectiveness of art therapy for anxiety in adults.

The effectiveness of AAT in women with anxiety disorders

In order to address the question whether AAT is effective, a randomized controlled trial was performed to assess the effects of AAT in women with anxiety disorders (**Chapter 3**). Fifty-nine women, with moderate to severe anxiety symptoms, and meeting the diagnostic criteria for generalized anxiety disorder, social anxiety disorder and/or panic disorder, were randomly assigned to three months AAT (10-12 sessions) or a waiting list condition. Pre- and post-measures were anxiety symptom severity (Lehrer Woolfolk Anxiety Symptom Questionnaire; LWASQ), quality of life (MANchester Short Assessment of QoL; MANSA) and emotion regulation (Difficulties in Emotion Regulation Scale; DERS), all measured with self-report questionnaires. Both per-protocol and intention-to-treat analyses demonstrated effectiveness of AAT compared to waiting list condition, showing a reduction in experienced anxiety, an increase in subjective quality of life (both with large effects) and an improvement in accessibility of emotion regulation strategies (medium effect). Treatment effects remained after three months follow-up and were also observed in the second treatment group (after waiting list). Regression analysis showed that improved *acceptance of emotions* and improved *goal-oriented action* are aspects of emotion regulation that are associated with the reduction of anxiety symptoms.

Chapter 4 addressed the question whether AAT can have positive effects on executive functioning and stress regulation (heart rate and heart rate variability (HRV)), and if changes in these domains are associated with anxiety symptom reduction. Daily behavioural EF was measured with the Behaviour Rating Inventory of Executive Function for Adults (BRIEF-A) and performance-based EF was assessed with the Amsterdam Neuropsychological Tasks (ANT), by a selection of tasks measuring alertness, inhibition, cognitive flexibility and sustained attention.

Results indicated that AAT led to a significant higher HRV at rest, which can be interpreted as a lower overall level of arousal, but not to significant improvements on stress responsiveness or stress recovery. The treatment group experienced significant improvements in daily behavioural EF in the domains *emotion control*, *working memory*, *plan/organize* and *task evaluation*, but did not show pre-post treatment differences regarding performance-based EF on any of the tasks compared to the control group. At baseline, the study population had poorer performance on *inhibition* (more impulsivity) compared to a healthy study population. Subjects who experience many problems with daily EF (*cognitive flexibility* and *organization*

of materials) and subjects with poorer inhibition skills at baseline showed a larger anxiety reduction and are more likely to benefit from AAT. Improvements in self-reported *emotion control, plan/organize* and *task evaluation* are associated with AAT-related anxiety reduction. This study was a first exploration of possible working mechanisms of AAT in adults with anxiety. The results - improvements in emotion regulation (**Chapter 3**), in resting HRV and in daily behavioural executive functioning (**Chapter 4**) - indicate that art therapy improves regulating processes and that this plays a role in the reduction of anxiety symptom severity, but the exact mechanisms within the therapeutic process are not yet clear. In order to gain more insight in therapeutic processes, other studies are needed that can provide detailed information about the course of treatment.

Case reporting

Case studies can provide insight in therapeutic processes when published as case reports (Gagnier et al., 2013). Case reports can be used for explicating implicit expert knowledge and provide insight in individualized therapy processes, and are therefore suitable for describing the content of the AAT therapy, generating hypotheses on AAT working mechanisms. Case reports also allow for the exploration of links between the therapeutic content and generally accepted theories and provide first indications for its effectiveness. Good quality case reports are an important factor in the development of EBP. A guideline for scientific case reports could contribute to this and the question was asked whether a scientific guideline for art therapy case reports could be developed.

PART II of this PhD thesis addressed the questions:

Can the medical Case Report Guidelines be adjusted for use in AAT?

How does AAT work on reduction of anxiety? What therapeutic elements may be connected to emotion regulation and executive functioning?

In **Chapter 5**, the guideline for medical case reports (the CARE Guidelines (Gagnier et al., 2013), covering diagnosis, treatment and outcomes) was adjusted for use in AAT, following the recommended steps for health reporting guidelines. The adjustments were based on AAT literature and expert opinions. A first evaluation of the new CARE-AAT guideline showed that face validity of the guideline is good; the guideline covers all necessary information needed for a case report on AAT. However, the guideline appeared to be too abstract for individual therapists, who are often not research minded, and offers too little support to document cases

in a structured and standardized way. It was assumed that this was related to, among other things, the non-chronological ordering of information in the guideline, which makes it unclear what information must be collected and at what time during therapy. To support therapists in systematic collection and documentation of key components of the therapeutic processes, a documentation method was developed (Abbing, Ponstein, Hoekman, Van Hooren & Baars, 2018), based on the CARE-AAT guideline and was operationalized with items from art therapy professionals and researchers.

With the use of this documentation method (Abbing et al., 2018), a case that is representative for the general approach of AAT for anxiety was documented and selected for case reporting, to provide insight in an AAT process and to explore the therapeutic elements that may be connected to emotion regulation and executive functioning. **Chapter 6** concerned this case report, presenting a 54 year-old female suffering from anxiety since childhood and diagnosed with panic disorder and symptoms of claustrophobia and hypochondria. After AAT, reduction of anxiety symptom severity was shown, as well as large improvements of emotion regulation skills. Client indicated that the therapy resulted in more acceptance and tolerance towards her anxiety and a more lenient attitude towards herself, leading to reduction of symptoms, even after one year follow-up. The description of the intervention process indicated that aspects of emotion regulation were addressed implicitly through different art assignments in this specific AAT case.

Main findings

The studies presented in this thesis aimed to gain insight in the effectiveness and to explore working mechanisms of anthroposophic art therapy for women with anxiety. The second aim was to contribute to the development of the profession of art therapists, by equipping them with tools for systematic data collection and publication of case reports, in order to support art therapists in contributing to the body of knowledge and the body of evidence on the working mechanisms in art therapy.

The first main outcome is that three months AAT led to a significant reduction of anxiety symptom severity, compared to waitlist condition, and to a significant improvement of experienced quality of life.

The second main outcome is the effect of art therapy on aspects of self-regulation: perceived emotion regulation, stress regulation and perceived executive functioning, indicating that art therapy improves several aspects of self-regulation that contribute to anxiety symptom reduction. Although no treatment related changes were found in executive performance during specific tasks on aspects of executive functioning, heart rate variability changed during rest and level of self-reported inhibition contributed to prediction of treatment effects. Thirdly, based on first steps in the exploration of working mechanisms, the hypothesis arises that specific art therapy exercises may lead to specific effects. This was illustrated with a case report, indicating that the therapy took place in a safe and supporting environment allowing for relaxation and pleasure during art work whilst using and improving emotion regulation skills and executive functions. The description of the process suggests that this 'learning process' happened subconsciously (implicit) and not through conscious processes. Based on the foregoing, we can conclude that art therapy can be effective for the treatment of anxiety symptoms in female adults and that some insight in working mechanisms has been gained. Further research is necessary to explore specific contribution of supposed mechanisms.

Discussion of main findings

Three months AAT led to a significant reduction of anxiety symptom severity, compared to waitlist condition ($p=0.001$, $\eta_p^2=0.20$), and to a significant improvement of subjective quality of life ($p<0.0001$; $\eta_p^2=0.52$).

The study population consisted of women who suffered from anxiety symptoms for a long period of time (mean 17,6 years, $SD=18,9$). Multiple anxiety disorders applied to the majority of the study population, 96% met the criteria for two to five different anxiety disorders. Comorbidity was also present in the study population, equally distributed over the two groups: 21% PTSD, 10.6% depression. These factors are all known to cause poorer treatment outcomes in general: the duration of the anxiety symptoms is an important factor for the effectiveness of treatment (Starcevic, 2010); the longer the anxiety symptoms are present and the earlier it started in life, the less favourable the treatment outcomes are (Hendriks, Keijsers,

Kampman, Hoogduin, & Voshaar, 2011). Furthermore, the severity of the anxiety symptoms is important for treatment success. The severity of the symptoms prior to the therapy is a characteristic that is related to the treatment outcomes, regardless of the type of therapy used. In different types of anxiety disorders, such as social phobia and panic disorder, the severity of the symptoms is related to the outcome of the therapy; the more serious the symptoms, the less effective the therapy is (Mululo, Menezes, Vigne, & Fontenelle, 2012; Haug et al., 2015). Given the fact that our study population had a long duration of anxiety symptoms and had high anxiety symptom severity prior to the therapy, the outcomes of our study are very positive and surprisingly show that the higher the baseline symptom severity, the more effective the therapy was (larger anxiety symptom reduction). The improvements remained during three months follow-up.

Several possible explanations can be used to understand this outcome. To start with, effects can be caused by specific or non-specific factors. Specific factors are theory-derived components of the intervention, such as from the self-regulation theory, while non-specific factors concern the aspects of the intervention and the execution that are not theoretically specified (Donovan, Kwekkeboom, Rosenzweig, & Ward, 2009). These factors also concern 'common factors' in therapy, such as therapeutic alliance, attention, therapist-related factors: empathy, authenticity and unconditional, accepting, warmth (e.g. Bjornsson, 2011; Wampold, 2001), and client-related factors: motivation, attitude and expectations.

It is possible that people with severe symptoms not always benefit enough of standard treatment, but may benefit from more intensive and personalized treatments to achieve improvements (Haug et al., 2015). Although we didn't look into outcomes of previously received treatment in our study population, it is known that patients with severe symptoms and a chronic course appear to be better treatable with a therapy that is adapted to the individual, in terms of intensity and focus (Newman, Llera, Erickson, Przeworski & Castonguay, 2013). This is the case in AAT; it is a treatment that is tailored to the individual.

As explained in the General Introduction (Chapter 1), anthroposophic art therapists may consider their intervention to be theory-driven, because it is based on theories from the anthroposophic worldview. The specific AAT theory is not well described or connected to generally accepted and studied theories. In our research, we used self-regulation theory to explore possible active components of AAT. The results indicate that these specific factors play an important role in the reduction of anxiety symptom severity through art therapy.

Besides attributing effects of AAT to specific theories, it is known that treatment effects can be due to non-specific factors as well, like motivation and expectations of the client. Positive expectations can lead to overestimation of outcomes (Asay & Lambert, 1999), through a more positive self-evaluation of mental health (Taylor & Brown, 1988). The expectations and motivation of the study population were not measured, but it is likely that the subjects might have had some positive expectations and that they were motivated to some extent to try this therapy, because they applied for the therapy themselves, knowing that a trial was conducted (since they had to sign informed consent to participate in the study). It is therefore also likely that the study population consisted of women who have (at least some) affinity with creativity and/or art making. These aspects might have caused overestimation of the effectiveness.

Non-specific factors can lead to non-specific effects, which are also known as the 'psychological placebo'. It is however not likely that the observed effects can completely be explained by placebo or non-specific treatment effects, because the observed effect is too large compared to the expected effect, and remains for at least three months follow-up after treatment, while there is no longer any individual attention during that period. This argues for the interpretation that at least part of the effect is actually achieved by specific art therapy factors, combined with non-specific treatment factors. Arguments that support this, based on the work by Kiene (2013) on the assessment of causality in case studies, are the large effect size, the relatively fast occurrence of the effect (within three months, compared to the mean duration of anxiety of 17.6 years) and the fact that the effects remain at follow-up. A longer follow-up however could have made this argument even stronger, this should be taken into account in future studies.

Other studies show beneficial effects of art therapy as well in other areas of mental health. For example, systematic reviews report on promising results for art therapy for PTSD (Nanda, Barbato Gaydos, Hathorn, Watkins, 2010; Schouten, de Niet, Knipscheer, Kleber, & Hutschemaekers, 2014; Ramirez, 2016; Williams & Thompson, 2010) and for a broader range of (mental) health conditions (Uttley, Stevenson, Scope, Rawdin, & Sutton, 2015; Slayton, D'Archer, Kaplan, 2010; Van Lith, 2016; Lankston, Cusack, Fremantle, & Isles, 2010).

Specific therapy factors are therefore assumed to be partly responsible for the observed effects. We explored these factors within the domain of self-regulation.

Based on the systematic review (**Chapter 2**) it was suggested that art therapy for anxiety may improve emotion regulation. This was confirmed in **Chapter 3**; significant improvements were

observed with respect to access to emotion regulation strategies. Improvements in perceived emotion regulation were highly associated with anxiety reduction; regression analysis showed that the aspects *acceptance of emotions* and improved *goal-oriented action* accounted for 46% of the improvement in anxiety symptom severity. The description of a therapeutic process (**Chapter 6**), indicated that specific art therapy exercises may (implicitly) address several emotion regulation domains: *control of impulses*, *acceptance of emotions*, *access to ER strategies* and *goal-oriented action*.

Emotion regulation involves several processes, according to Gratz & Roemer (2004). The basic skills that are needed for healthy emotion regulation are: being able to perceive one's emotional state and to be aware of one's own emotions, and the ability to accept emotions, the latter representing psychological flexibility (Dryden and Still, 2006).

In our study, *acceptance of emotions* and *goal-oriented action* were highly associated with the reduction of anxiety symptom severity. These subscales of the DERS have been shown to be linked to HRV in other studies. We found HRV to be low in our study population and higher after three months art therapy. Higher HRV is associated with higher quality of emotion regulation (Friedman, 2007; Porges, 2007; Williams, Cash, Ranking, Bernadi, Koenig & Thayer, 2015). Lower resting HRV is known to be associated with larger difficulties in emotion regulation as reported by Williams et al., 2015, with the subscale *acceptance of emotions* of the DERS as the largest predictor of HRV: low HRV is associated with low acceptance (Visted, Sørensen, Osnes, Svendsen, Binde & Schanche, 2017). Low *acceptance of emotions* is also found to be associated with high physiological arousal and high cognitive strain (Hayes et al., 2006).

As HRV is considered to be an index of ANS regulation, according to the Neurovisceral Integration Model, it is thought to regulate physiological resources to enable goal directed behaviour (Thayer & Lane, 2000). This argues for a link between the DERS subscale *goal-oriented action* and HRV.

HRV is also positively correlated with flexibility in response to demands of the environment (Friedman, 2007; Porges 2007; Visted et al., 2017). There is neurophysiological evidence for associations between resting vagally mediated HRV (vmHRV) and executive brain regions (Thayer, Åhs, Fredrikson, Sollers, & Wager, 2012). Resting vmHRV does not only represent overall health, but is also an index for the degree of brain flexibility concerning self-regulation

processes, such as executive functions and cognitive control (Williams, Freeling, Hill, Spangler, Koenig & Thayer, 2017; Williams et al., 2015).

To conclude: higher resting HRV after art therapy, reported in **Chapter 4**, can be considered as an index for improved self-regulatory ability (Segerstrom, Boggero & Evans, 2016), and is an objective measure that can substantiate the findings from self-report measures in our study: anxiety symptom reduction and improvements of ER and subjective daily behavioural EF. Therefore, we feel confident to conclude that the effects of art therapy in anxiety reduction are meaningful and supportive of further exploration of working mechanisms in art therapy to predict outcome in individual cases. This is not only useful in development of indication criteria, but also helpful in enhancing tailor-made treatment in AAT.

In **Chapter 6**, concerning a case report, it is indicated that specific skills are practiced and trained during the art therapy exercises, which are chosen by the therapist. These exercises provide experiences within a safe environment and are not only intended to practice and train skills (van Hooren, 2018), but also to gain insight in one's own emotions and the emotional impact on behavioural responses. For AAT specifically, the exercises are intended and thought to provide health promoting 'impressions' such as images and colours (Uitgeest, 2016). The practiced skills are partly related to aspects of executive functioning: e.g. following instructions (*working memory*), working autonomously on an assignment (*plan/organize*), tracking and evaluating one's own actions during the art work (*task evaluation*), learn to interact with and adjust to the qualities of different art materials and assignments (*shift*), and learn to explore and regulate emotions. This hypothetical working mechanism (improvements of perceived EF, associated with anxiety reduction through art therapy) is substantiated by the finding in **Chapter 4** that subjective improvements of the aspects *emotion control*, *plan/organize* and *task monitor* contributed for 64,7% to the anxiety symptom reduction. Since performance on specific EF tasks did not support these findings so far, further study is necessary to explore the trajectory to the improvement in daily EF functioning and to the reduction in anxiety.

Although there is still much unclear about the exact working mechanisms of art therapy, the forgoing results allow for the hypothesis that AAT is effective in the treatment of anxiety symptoms and that this is partly due to the improvement of specific aspects of self-regulation: emotion regulation and executive functioning, which can not only be seen in daily functioning

but also in improvement of resting HRV (although this improvement was not directly associated with anxiety reduction).

Strengths and limitations

The studies described in this PhD thesis have several strengths. A mix of probabilistic (difference-making evidence) and preliminary mechanistic evidence (evidence regarding possible working mechanisms) is provided for AAT in the treatment of anxiety. The difference-making evidence concerns the systematic review and the RCT; and evidence regarding possible working mechanisms concerns the case report and the secondary outcomes and analyses of the RCT. These two methods of causality assessment support each other: difference-making evidence and of mechanistic evidence are complementary because each addresses the primary weakness of the other (Illari & Russo, 2014).

The studies in this PhD thesis provide a first basis and guidance to future research on art therapy for anxiety. The positive results demonstrate the potential of art therapy and legitimate further research on art therapy for anxiety. It provides tools (CARE-AAT guideline, documentation method, an AAT case report example) for art therapists to document their work in a scientific way, building on the CARE guidelines (Gagnier et al., 2013) and adapting it to the domain of art therapy. Several stakeholder groups will benefit when CARE-AAT based case reports are written. The emphasis in this thesis was to develop and use testable hypotheses from clinical settings (Driggers et al., 2016), but case reports can also contribute to peer-to-peer communication between therapists, provide examples for case-based learning and provide patients with transparent information on the therapy (www.care-statement.org).

There are also limitations that should be discussed. A first limitation of our research is the lack of an active control in the RCT. It is therefore not possible to conclude with certainty that the observed effects are caused by therapy-specific factors. Second, the small sample size may have compromised the outcomes and may have led to non-detection of significant outcomes of stress responsivity and performance EF, or associations between improvement of resting HRV and anxiety reduction. Third, the study population consisted of a specific subgroup: only women, who were presumably motivated, and a little over 50% was higher educated. Outcomes are not to be generalized to men, nor to less motivated and/or lower educated women. Fourth, the study population was heterogeneous in nature, due to dimensional

inclusion on anxiety symptom severity. Participants did not belong to one specific anxiety disorder classification, so conclusions on the effectiveness of art therapy for specific anxiety disorders cannot be drawn. Fifth, some insight into possible working mechanisms has been gained, but still many factors need to be considered before concluding on the exact working mechanism(s) of art therapy.

Implications for future research

Studies on effectiveness of art therapy

One RCT does not provide sufficient evidence, so more RCTs are needed, and studies with active controls are recommended. CBT could serve as active control. It would also be important to study the effectiveness of CBT complemented by art therapy to evaluate if there is a larger effect than from both treatments separately, because both treatments seem to have different dynamics and could complement each other. Another important direction is to include individuals with anxiety disorders that were not responding to CBT, to investigate if these individuals do respond to art therapy and to identify patient-related factors that could provide more insight in for whom this therapy may be beneficial.

The control conditions must be designed and matched closely to art therapy on non-specific factors (Bjornsson, 2011; Safer & Hugo, 2006), to gain clarity on what art therapy can add. It is therefore recommended to include a measure of therapeutic alliance and measures of therapist-related factors (experienced by the patient) such as empathy, warmth. Analyses of interactions between these non-specific factors and other factors that contribute to improvement of symptoms can lead to identification of specific factors, that can be included in the construct (theory) of AAT. Also, a narrower study population is recommended, to be able to study the effectiveness of art therapy for specific anxiety disorders. It is recommended to select standardized instruments that are more widely used in the evaluation of severity of anxiety, like the State-Trait Anxiety Inventory (STAI) (Spielberger, Gorsuch, Lushene, Vagg & Jacobs, 1983), to make comparison between studies more feasible.

Studies on working mechanisms of art therapy

While CBT aims at understanding and changing the personal mechanisms of anxiety and learning by influencing cognitions and strategies of 'actions' (Beck & Dozois, 2011), using explicit processes of emotion regulation, AAT appears to support implicit processes. It is

therefore important to study differences and similarities between CBT and AAT working mechanisms, in different groups of patients with an anxiety disorder. A development in CBT is the expansion with attention and acceptance-based behavioural therapies (ACT), with the aim of changing the relationship that a client has with his thoughts, using mindfulness- and acceptance techniques as well as exposure (Brown, Gaudiano & Miller, 2011; Eifert & Forsyth, 2005). Based on the outcomes of our research, it would be interesting to study whether art therapy has similarities with the working mechanisms of this new ‘wave’ of cognitive therapy.

Case studies

More case reports can provide more insight in detailed therapeutic processes (therapeutic elements, the structures of the therapeutic processes and their relationship with the primary outcome), leading to further hypotheses on working mechanisms and AT specific factors, that can tested in effectiveness studies.

Around 40 cases were selected during the RCT. These data allow us to study the therapeutic processes in detail, in order to gain a better understanding of the different routes to anxiety reduction. Lessons from case reports, for example about successful courses of treatment and less successful process can lead to quality improvement of AT and further development of the body of knowledge of AAT.

Patient experiences

Next to studying cost-effectiveness, studying the value of the intervention for the patients is of key importance in value-based health care (Porter, 2010). The value of an intervention can be measured using patient reported outcome measures (PROMs), questionnaires in which the patient indicates his current experienced health status and the consequences of his disorder on his daily life; and patient reported experience measures (PREMs), that question the experiences of the patient on topics such as information, patient participation, treatment and aftercare. A Consumer Quality Index (CQI) is designed for collecting these types of information and has several variants developed for a broad spectrum of health care, such as obstetrics, physiotherapy, mental health care, youth healthcare, palliative care (Zorginstituut Nederland, 2019). A CQI for art therapy is not developed yet, but could be of value for the professional field since it allows for transparency towards policy makers and health insurers.

Patient experiences can also be collected with in-depth interviews. After completing the RCT described in this thesis, 35 interviews were held with participants in the study. Qualitative outcomes can provide information about the experience of patients regarding the value of AT and the elements that led to anxiety reduction. The elaboration of these studies will be continued.

Implications for clinical practice

The studies reported in this thesis contributed to all levels of the effect ladder (Van Yperen & Veerman, 2008), which is used to assess the reported evidence of effectiveness of an intervention.

The case report (chapter 6) provided a detailed description of the intervention (level 1) and a credible intervention theory was explored (level 2). The RCT (chapters 3 and 4) provided first outcomes of effect measures (that need to be replicated) (level 3) and concerned comparative research (level 4), concluding that, according to the effect ladder, AAT for anxiety is progressing in becoming a proven effective intervention.

By analysing predictors of treatment success, we can indicate for which people the treatment may be effective. Based on our findings, individuals with the following baseline characteristics showed larger anxiety reduction: high baseline anxiety symptom severity, high levels of difficulty with emotion regulation, problems in cognitive flexibility and organization of materials, and poorer baseline inhibition scores on cognitive performance.

According to clients with anxiety, the therapy is successful. However, not all patients did benefit from the therapy. Almost 16% of the patients (7 out of 44 cases) did not show reduction of anxiety symptom severity directly after therapy, even though quality of life scores improved in all seven cases. Three of these cases were part of the first treatment group that was evaluated directly after therapy, and surprisingly, these cases showed anxiety reduction at follow up, three months after therapy. The remaining four cases that did not improve directly after therapy were part of the second treatment group, which did not have follow up measures.

Even though not all participants improved directly after therapy, it is an accessible therapy (with a financial and time investment), with no (expected) side effects and the results of our research indicate that art therapy can be continued as a treatment option for anxiety. It may be suitable for individuals who did not respond to CBT, or individuals who prefer an

experience-oriented therapy instead of a cognitive oriented therapy. It may also serve as an additional therapy next to CBT and/or medication, or may be integrated with CBT. How this could be organized in clinical practice should be subject for future research.

Art therapy has a different dynamic than verbal therapy. Common to most forms of therapy for anxiety is that alternative strategies to cope with fearful situations are learned. One of the main differences between cognitive therapies and nonverbal therapies is the level of 'consciousness' or 'outspokenness' in approach about this process of the patient.

Worry and rumination are often present in individuals with anxiety (American Psychiatric Association, 2013), which anthroposophic art therapists characterize as 'a dominance of excessive and unproductive thinking' that should be reduced in therapy. According to Borkovec (1994) (as cited in Dar & Iqbal, 2014), worrying and verbal activity interferes with emotional processing and prevents adaptive coping in individuals with anxiety. The case report illustrated that in AAT treatment, the anxiety is not 'consciously' or cognitively addressed and (excessive) talking about the anxiety is avoided, in order not to enable the individual to 'stay in the thinking-mode', enabling worry and rumination. Worry and rumination is known to be more present in individuals with high intelligence, which is also thought to be a risk factor for anxiety and other psychological disorders (Karpinski, Kinase Kolb, Tetreault, & Borowski, 2018). The majority of our study population received higher education, which may indicate that our study population has a higher average intelligence level compared to the average Dutch population. The participants were open to try a different, non-cognitive approach. The therapy requires own activity and commitment, may distract the attention from maladaptive beliefs and cognitions, and aims for the focusing of the attention towards the creative process, making the person engage in self-expression, exploration of emotions and working towards acceptance. Creating a visual art work can provide a certain distance, so that patients are not overwhelmed by feelings of anxiety (Van Balkom et al., 2013). To 'distance' oneself from the emotion during the act of creating art is believed to improve cognitive regulation of emotions (Smeijsters, 2008). Art therapy is therefore also thought to be suitable for less 'cognitive-oriented' individuals, or individuals who have difficulty expressing themselves verbally. Works of art can help to express oneself, can be a reflection of emotions, and the well-being of the individual may be served by more therapeutic options than therapeutic methods that rely on verbal qualities (e.g. Liebman, 1990; Chambala, 2008; Haeyen, 2007).

Conclusions

This PhD thesis addresses one of the easy accessible interventions that is often applied in anxiety treatment but little studied to date: art therapy; and anthroposophic art therapy (AAT) specifically.

The primary aim was to study the effectiveness of art therapy in the treatment of anxiety and explore its working mechanisms in a systematic review and a randomized controlled trial (RCT). The systematic review of (non-)randomised controlled trials on art therapy for anxiety in adults demonstrated that effectiveness of art therapy on anxiety has hardly been studied. Outcomes of the RCT showed preliminary proof of effectiveness of art therapy in the treatment of anxiety. AAT has large effects on the reduction of anxiety symptom severity in women. The therapy also improves quality of life and several aspects of self-regulation: 10-12 sessions led to a higher resting HRV (heart rate variability), improved access to perceived emotion regulation strategies and improvements in self-reported daily executive functioning. Improvements in daily executive functioning (domains *emotion control*, *plan/organize* and *task evaluation*) contributed the most to anxiety reduction, followed by improvements in emotion regulation (*acceptance of emotions* and *goal-oriented action*). These outcomes support the indication for art therapy in the treatment of anxiety and provide directions for further studying effectiveness and working mechanisms of art therapy, in order to learn about their specific indications and to support clinical practice.

The secondary aim was to study how case reports within this profession can be used in art therapy research. The developed case report guideline for AAT was positively evaluated on face validity. A case report of a female client with anxiety demonstrated that hypothesized working mechanisms from the RCT could be further connected to art therapy specific factors, and that structured art therapy assignments appeared to implicitly address and improve aspects of emotion regulation and executive functioning.

References

- Abbing, A., Ponstein, A., Hoekman, J., van Hooren, S., & Baars, E. (2018). Wetenschappelijk verantwoorde casusbeschrijvingen vragen om methodische documentatie. De ontwikkeling van een documentatiemethode gebaseerd op de CARE-AAT richtlijn. *Tijdschrift voor Vaktherapie*, 2018, 3, p.24-32.
- American Psychiatric Association (2013). *Diagnostic and Statistical Manual of Mental Disorders* (Fifth ed.). Arlington, VA: American Psychiatric Publishing. p. 189. ISBN 978-0-89042-555-8.
- Asay, T. P., & Lambert, M. J. (1999). *The empirical case for the common factors in therapy: Quantitative findings*. In M. A. Hubble, B. L. Duncan, & S. D. Miller (Eds.), *The heart and soul of change: What works in therapy* (pp. 23-55). Washington, DC: American Psychological Association.
- Beck, A., & Dozois, D. (2011). Cognitive Therapy: Current Status and Future Directions. *Annual Review of Medicine*, 62(1), 397-409.
- Bjornsson, A. S. (2011). Beyond the "Psychological Placebo": Specifying the Nonspecific in Psychotherapy. *Clinical Psychology: Science and Practice*, 18(2), 113-118.
- Bolwerk, A., Mack-Andrick, J., Lang, F. R., Dörfler, A., & Maihöfner, C. (2014). How art changes your brain: Differential effects of visual art production and cognitive art evaluation on functional brain connectivity. *PLoS one*, 9(7), e101035. <https://doi.org/10.1371/journal.pone.0101035>
- Borkovec, T. D. (1994). *The nature, functions, and origins of worry*. In G. Davey & F. Tallis (Eds.), *Worrying: Perspectives on theory, assessment, and treatment* (pp. 5–33). New York, NY: Wiley.
- Brown, L. A., Gaudiano, B. A., & Miller, I. W. (2011). Investigating the similarities and differences between practitioners of second-and third-wave cognitive-behavioural therapies. *Behavior Modification*, 35(2), 187-200.
- Chambala, A. (2008). Anxiety and art therapy: Treatment in the public eye. *Journal of the American Art Therapy Association*, 25, 187-189. doi:10.1080/07421656.2008.10129540
- Christeller, E., Denzinger, I., Altmaier, M., Künstner, H., Umfrid, H., Frieling, E. & Auer, S. (2000). *Antroposophische Kunsttherapie*. [Antroposophic art therapy]. Verlag Freies Geistesleben & Urachhaus GmbH, Stuttgart / Medizinische Sektion am Goetheanum, Dornach, CH.
- Dar, K., & Iqbal, N. (2014). Worry and Rumination in Generalized Anxiety Disorder and Obsessive Compulsive Disorder. *The Journal of Psychology*, 149(8), 1-15.

- Donovan, H. S., Kwekkeboom, K. L., Rosenzweig, M. Q., & Ward, S. E. (2009). Nonspecific Effects in Psychoeducational Intervention Research. *Western Journal of Nursing Research*, 31(8), 983–998. <https://doi.org/10.1177/0193945909338488>
- Driggers, R., Ho, C., Korhonen, E., Kuivanen, S., Jääskeläinen, A., Smura, T., . . . Vapalahti, O. (2016). Zika Virus Infection with Prolonged Maternal Viremia and Fetal Brain Abnormalities. *The New England Journal of Medicine*, 374(22), 2142-2151.
- Dryden, W., & Still, A. (2006). Historical aspects of mindfulness and self-acceptance in psychotherapy. *Journal of rational-emotive and cognitive-behaviour therapy*, 24(1), 3-28.
- Eifert, G. H., & Forsyth, J. P. (2005). *Acceptance and commitment therapy for anxiety disorders: A practitioner's treatment guide to using mindfulness, acceptance, and values-based behaviour change*. New Harbinger Publications.
- Friedman, B. H. (2007). An autonomic flexibility-neurovisceral integration model of anxiety and cardiac vagal tone. *Biological Psychology*, 74, 185–199.
- Gagnier J, Kienle G, Altman D, Moher D, Sox H, Riley D & the CARE Group (2013). The CARE Guidelines: Consensus-based Clinical Case Reporting Guideline Development. *Global Adv Health Med*. 2013;2(5):38-43.
- Gordon, R. M. (1976). Effects of volunteering and responsibility on perceived value and effectiveness of a clinical treatment. *Journal of Consulting and Clinical Psychology*, 44,799-801.
- Gratz, K. L., & Roemer, L. (2004). Multidimensional assessment of emotion regulation and dysregulation: Development, factor structure, and initial validation of the difficulties in emotion regulation scale. *Journal of Psychopathology & Behavioural Assessment*, 26(1), 41-54. doi:10.1023/B:JOBA.0000007455.08539.94
- Haeyen, S. (2007). *Niet uitleven maar beleven: Beeldende therapie bij persoonlijkheidsproblematiek*. Houten, The Netherlands: Bohn Stafleu van Loghum.
- Haug, T., Nordgreen, T., Öst, L. G., Kvale, G., Tangen, T., Andersson, G., ... & Havik, O. E. (2015). Stepped care versus face-to-face cognitive behaviour therapy for panic disorder and social anxiety disorder: predictors and moderators of outcome. *Behaviour research and therapy*, 71, 76-89.
- Hauschka, M. (2004). *Kunstzinnige therapie*, Christofoor, Zeist.
- Hassink-Franke, L.J.A., Terluin, B., Van Heest, F.B., Hekman, J., Van Marwijk, H.W.J., & Van Avendonk, M.J.P. (2012). *NHG-Standaard Angst* (tweede herziening). Huisarts Wet, 55(2), 68-77.

- Hayes, S. C., Luoma, J. B., Bond, F. W., Masuda, A., and Lillis, J. (2006). Acceptance and commitment therapy: model, processes and outcomes. *Behav. Res. Ther.* 44, 1–25. doi: 10.1016/j.brat.2005.06.006
- Heldt, E., Manfro, G. G., Kipper, L., Blaya, C., Maltz, S., Isolan, L., ... & Otto, M. W. (2003). Treating medication-resistant panic disorder: predictors and outcome of cognitive-behaviour therapy in a Brazilian public hospital. *Psychotherapy and Psychosomatics*, 72(1), 43-48.
- Hendricks, G.-J., Keijsers, P. J., Kampman, M., Hoogduin, C. A. L., & Voshaar, R. C. (2011). Predictors of outcome of pharmacological and psychological treatment of late-life panic disorder with agoraphobia. *Geriatric Psychiatry*, 27, 146-150. doi:10.1002/gps.2700
- Illari, P., & Russo, F. (2014). *Causality: Philosophical theory meets scientific practice*. OUP Oxford.
- Karpinski, R., Kinase Kolb, A., Tetreault, N., & Borowski, T. (2018). High intelligence: A risk factor for psychological and physiological overexcitabilities. *Intelligence*, 66, 8.
- Katzman, M. A., Bleau, P., Blier, P., Chokka, P., Kjernisted, K., & Van Ameringen, M. (2014). Canadian clinical practice guidelines for the management of anxiety, posttraumatic stress and obsessive-compulsive disorders. *BMC psychiatry*, 14(1), S1.
- Kiene, H. (2013). *Komplementäre Methodenlehre der klinischen Forschung: Cognition-based medicine*. Springer-Verlag.
- Lankston, L., Cusack, P., Fremantle, C., & Isles, C. (2010). Visual art in hospitals: case studies and review of the evidence. *Journal of the Royal Society of Medicine*, 103(12), 490-499.
- Liebmann, M. (1990). *Art therapy in practice*. London: Jessica Kingsley.
- Linden, M., Zubraegel, D., Baer, T., Franke, U., & Schlattmann, P. (2005). Efficacy of cognitive behaviour therapy in generalized anxiety disorders. *Psychotherapy and psychosomatics*, 74(1), 36-42.
- Lucas, C. (2015). *Bewijsgestuurde zorg. Evidence Based Practice versus practice based evidence*. Rede uitgesproken bij de aanvaarding van het ambt van bijzonder hoogleraar Evidence Based Practice aan de Faculteit der Geneeskunde van de Universiteit van Amsterdam, AMC, 2015
- Mululo, S. C. C., de Menezes, G. B., Vigne, P., & Fontenelle, L. F. (2012). A review on predictors of treatment outcome in social anxiety disorder. *Revista Brasileira de Psiquiatria*, 34, 92-100. doi:10.1590/S1516-44462012000100016
- Nanda, U., Barbato Gaydos, H. L., Hathorn, K., & Watkins, N. (2010). Art and posttraumatic stress: A review of the empirical literature on the therapeutic implications of artwork for war veterans with posttraumatic stress disorder. *Environment and behaviour*, 42(3), 376-390.

- Nederlands Kenniscentrum Angst en Depressie (2019). Accessed 29 January 2019, at <https://nedkad.nl/voor-patienten-en-belangstellenden/angst/>
- Newman, M., Llera, S., Erickson, T., Przeworski, A., & Castonguay, L. (2013). Worry and Generalized Anxiety Disorder: A Review and Theoretical Synthesis of Evidence on Nature, Etiology, Mechanisms, and Treatment. *Annual Review of Clinical Psychology*, 9(1), 275
- NVKToag, 2018 Kunstzinnige Therapie. Retrieved August 20, 2018, from <https://www.kunstzinnigetherapie.nl/>
- Pelissolo A. (2008). Efficacy and tolerability of escitalopram in anxiety disorders: a review. *Encephale*. 2008;34:400–408. French.
- Porges, S. W. (2007). The Polyvagal perspective. *Biological Psychology*, 74, 116-143.
- Porter, M. (2010). What Is Value in Health Care? *The New England Journal of Medicine*, 363(26), 2477-2481.
- Ramirez J. (2016). A Review of Art Therapy Among Military Service Members and Veterans with Post-Traumatic Stress Disorder. *Journal of Military and Veterans' Health* 2016;24(2).
- Rolff, H. & Gruber, H. (2015). *Anthroposophische Kunsttherapie – Aspekte und Grundlagen*. [Anthroposophic art therapy – Aspects and fundamentals]. EB-Verlag. Berlin.
- Safer, D. L., & Hugo, E. M. (2006). Designing a control for a behavioural group therapy. *Behavior therapy*, 37(2), 120-130.
- Schouten, K.A., de Niet, G.J., Knipscheer, J.W., Kleber, R.J., & Hutschemaekers, G.J.M. (2014). The Effectiveness of Art Therapy in the Treatment of Traumatized Adults. *Trauma, Violence, & Abuse*. 2014;16(2):220-8.
- Segerstrom, S. C., Boggero, I. A., & Evans, D. R. (2016). *Pause and plan; the physiology of self-regulation*. Handbook of self-regulation: Research, theory, and applications, 131-145.
- Slayton, S.C., D'Archer, J., & Kaplan, F. (2010). Outcome Studies on the Efficacy of Art Therapy: A Review of Findings. *Art Therapy*. 2010;27(3):108-18.
- Smeijsters, H. (2008). *Handboek creatieve therapie*. Bussum, The Netherlands: Coutinho.
- Spielberger, C.D., Gorsuch, R., Lushene, R., Vagg, P.R., & Jacobs, G.A. (1983) *Manual for the State-Trait Anxiety Inventory*. Consulting Psychologists Press, Palo Alto.
- Starcevic, V. (2010). *Anxiety disorders in adults: A clinical guide*. Oxford, England: University Press.

- Taylor, S.E. & Brown, J.D. (1988). Positive illusions and well-being revisited: separating fact from fiction. *Psychological Bulletin* 1994, Vol. 116, No.1. 21-27.
- Thayer, J. F., Åhs, F., Fredrikson, M., Sollers, J. J., & Wager, T. D. (2012). A meta-analysis of heart rate variability and neuroimaging studies: Implications for heart rate variability as a marker of stress and health. *Neuroscience & Biobehavioral Reviews*, 36(2), 747-756.
doi:<https://doi.org/10.1016/j.neubiorev.2011.11.009>
- Thayer, J. F., & Lane, R. D. (2000). A model of neurovisceral integration in emotion regulation and dysregulation. *Journal of affective disorders*, 61(3), 201-216.
- Tyrer, P., Seivewright, H., & Johnson, T. (2004). The Nottingham Study of Neurotic Disorder: predictors of 12-year outcome of dysthymic, panic and generalized anxiety disorder. *Psychological Medicine*, 34(8), 1385-1394.
- Uitgeest, W. (2016). *Bang voor rood, geel en... blauw? Goethe, Merleau-Ponty en fenomenologisch kleuronderzoek*. Academisch Proefschrift, Vrije Universiteit Amsterdam, 2016.
- Uttley, L., Stevenson, M., Scope, A., Rawdin, A., & Sutton, A. (2015). The clinical and cost effectiveness of group art therapy for people with non-psychotic mental health disorders: a systematic review and cost-effectiveness analysis. *BMC Psychiatry*. 2015;15(1).
- Van Balkom, A. L. J. M., Van Vliet, I. M., Emmelkamp, P. M. G., Bockting, C. L. H., Spijker, J., Hermens, M. L. M., & Meeuwissen, J. A. C. (2013). *Multidisciplinaire richtlijn Angststoornissen* (Derde revisie). Richtlijn voor de diagnostiek, behandeling en begeleiding van volwassen patiënten met een angststoornis. Trimbos Instituut: Utrecht.
- Van Lith T. (2016). Art therapy in mental health: A systematic review of approaches and practices. *The Arts in Psychotherapy*. 2016;47:9-22.
- Van Hooren, S. (2018). *Vaktherapie. Doen wat werkt*. Rede. Open Universiteit.
- Van Yperen, T.A., & Veerman, J.W. (2008). *Zicht op effectiviteit. Handboek voor praktijkgestuurd effectonderzoek in de jeugdzorg*. Delft: Eburon.
- Visted, E., Sørensen, L., Osnes, B., Svendsen, J.L., Binder, P.E., & Schanche, E. (2017). The Association between Self-Reported Difficulties in Emotion Regulation and Heart Rate Variability: The Salient Role of Not Accepting Negative Emotions. *Front. Psychol.* 8:328. doi: 10.3389/fpsyg.2017.00328
- Wampold, B. E. (2001). *The great psychotherapy debate: Models, methods and findings*. Mahwah, NJ: Lawrence Erlbaum.

- Williams, M.E., & Thompson, S.C. (2010). The Use of Community-Based Interventions in Reducing Morbidity from the Psychological Impact of Conflict-Related Trauma Among Refugee Populations: A Systematic Review of the Literature. *Journal of Immigrant and Minority Health*. 2010;13(4):780-94.
- Williams, D., Feeling, N., Hill, L., Spangler, D., Koenig, J., & Thayer, J. (2017). Resting Heart Rate Variability, Facets of Rumination and Trait Anxiety: Implications for the Perseverative Cognition Hypothesis. *Frontiers In Human Neuroscience*, Vol.11
- Williams, D.P., Cash, C., Rankin, C., Bernardi, A., Koenig, J., & Thayer, J.F. (2015). Resting heart rate variability predicts self-reported difficulties in emotion regulation: a focus on different facets of emotion regulation. *Front. Psychol.* 6:261. doi: 10.3389/fpsyg.2015.00261
- Zorginstituut Nederland, overview of all CQI questionnaires. Accessed 18 June 2019, at <https://www.zorginzicht.nl/ontwikkeltools/ontwikkelen/overzicht-van-alle-cqi-vragenlijsten>
- Zou, C., Ding, X., Flaherty, J.H., & Dong, B. (2013). Clinical efficacy and safety of fluoxetine in generalized anxiety disorder in Chinese patients. *Neuropsychiatr Dis Treat.* 2013;9:1661–1670.

