AACES - MST evaluation study 3 on the effectiveness of mentalization-supporting therapy

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ABSTRACT

Mentalization Supporting Therapy (Sulz 2021a, b), 2022a-c, 2023) is a metacognitive therapy approach (Sulz 2017a-c) for the treatment of Axis I and Axis II disorders. Anxious patients have no access to their ability to mentalize in a fearful situation. This is exactly where the anxiety therapy of Mentalization Supporting Therapy (MST) comes into play. This paper deals with the question of the effectiveness of AACES training in the context of Mentalization Supporting Therapy. This will be tested first with a non-clinical sample in a pilot study. 21 test subjects (students who were offered online anxiety management training over five evenings) received AACES (Mindfulness, Acceptance, Commitment, Exposure, Self-reinforcement) training on five evenings, which was first practiced in dry runs and then applied between sessions in the fearful situation. Anxiety symptoms (VDS90-anxiety) improved significantly after AACES training. The effect size is high. The decrease in clinical anxiety/anxiety symptoms (VDS90) is also associated with a decrease in trait anxiety (VDS28) (-VDS90-anxiety). Individuals with higher neuroticism scores showed more clinical anxiety (VDS90-anxiety) and more trait anxiety (VDS28) prior to the training. The more pronounced the overall mentalization and the mentalization of the world are, the more do the anxiety symptoms subside (pre-post difference VDS90-anxiety). The correlation analyses suggested that neuroticism had a negative impact on the effect of anxiety training, while the ability to mentalize led to a better outcome.

In the moderation analyses, we also found a moderating effect for neuroticism: Neuroticism decreases the reduction in anxiety symptoms. Likewise, the moderating effect of attachment insecurity was a decrease in anxiety reduction through AACES training.

The result encourages us to take the next step: controlled randomized trials with a clinical sample. Until then, the statements cannot be generalized.

Keywords

Phobia, anxiety therapy, AACES anxiety training, Mentalization Supporting Therapy (MST), secure attachment, mentalizing ability, neuroticism, mentalization of the world, outcome of anxiety therapy, effect size

Introduction

Mentalization Supporting Therapy (Sulz 2021a, b), 2022a-c, 2023) is a metacognitive therapy approach (Sulz 2017a-c) for the treatment of Axis I and Axis II disorders. It includes a transdiagnostic concept that can be easily adapted for individual psychological disorders. Just as cognitive behavioral therapy puts thinking before action and changes it therapeutically, a metacognitive approach puts metacognition at the beginning – thinking about thinking, feelings and needs, both your own and others' (Allen 2008, 2010, Allen & Fonagy 2009, Fonagy & Bateman 2008, Fonagy et al. 2004, 2008, Schultz-Venrath 2021, Schultz-Venrath & Felsberger 2016, Schultz-Venrath & Rottländer 2020, Schultz-Venrath & Staun 2017, Schultz-Venrath et al. 2019, Sharp & Bevington 2024). Metacognition, theory of mind (Premack & Woodruff 1978, Astington & Jenkins 1995, Sodian 2007) and mentalization are closely related terms, but can only be used as synonyms in certain contexts (Main 1991, Brockmann & Kirsch 2010). Almost all patients having psychotherapy suffer from emotional dysregulation (Hoenes et al. 2014a,b, Gräff-Rudolph & Sulz 2017, Sulz & Gräff-Rudolph 2017). Either they are flooded with feelings or they have no access to them. Bowlby's attachment theory (1975, 1976) and clinical developmental psychology (Bischof-Köhler 2010, Walter 2010, Barth 2017, Bachg & Sulz 2022) assume that an indispensable prerequisite for successful emotion regulation is a sufficiently secure attachment to primary caregivers (Gergely & Watson 1999, Kissgen 2008, cf. Mischel 1972, 2004, 2015). Our patients were not fortunate enough to experience attachment security with their parents. Therefore, the child's second developmental task after establishing attachment security could not be successful (Gergely & Watson 1999, Sulz & Milch 2012). Without a secure attachment, the child's brain cannot take the crucial developmental step of mentalization (Sroufe 1996, Rutter & Sroufe 2000, Strüber 2016). The emotional brain continues to dominate all experience and behavior, even beyond the age at which the prefrontal cortex (PFC) has matured and its functions are available (4 to 5 years, see Roth 1995, Roth & Strüber 2016, see also Damasio 2003).

Metacognitive understanding of interpersonal interactions is not possible (Fountoglou et al. 2017). Anxiety, anger and other affects control the course of transactions (NICHD Early Child Care Research Network 1997, 2001, 2004, 2019). Instead of reflective restraint within a well-developed theory of mind (ToM), anxiety helps to control behavior (Sulz & Müller 2000, Sulz & Sulz 2005, Sulz & Hauke 2009, Sulz & Maier 2009). The radar of our anxiety signals keeps us away from situations similar to previous threatening events. However, many situations are no longer threatening for adults. But if the situation is consistently avoided in a phobic attitude, there will be no all-clear (Sulz 2017a). The person resorts to the early inner working model (Bowlby 1975, 1976, Frischenschlager 2007) or the child's rule of survival (Sulz 1994, 2017a, b, 2020) predicting danger. Thus, an association with threat becomes indelible. Phobia remains, e.g. anxiety of final loss of love when fighting back, or discomfort in the presence of obese bearded men.

In this context, anxiety exposure is a very effective approach: allowing the anxiety-triggering stimulus to affect me until the anxiety reaction subsides on its own and finally disappears. To ensure and increase the effectiveness of this procedure, various aspects can be taken into account. On the one hand, there is the perception of early anxiety signals, which is easier to achieve with mindfulness. In addition, there is the willful decision to remain in the fearful situation in order to take advantage of the opportunity to practice. And in the situation itself there is no distraction, but the attention remains entirely on the perception of one's own anxiety reaction (rather than the anxiety situation). It can be named and described through an inner dialogue, adding a conscious reflective component. After the situation has passed, its meaning is reflected and the reality of anxiety reduction is secured. As a result, the theory of mind or theory of the mental becomes more and more reality-related.

AACES anxiety exposure

An example of a metacognitive approach to anxiety therapy is Mentalization Supporting Therapy (MST). Anxious patients have no access to their ability to mentalize in a fearful situation. There is only one thing: anxiety signals danger and this must be countered by flight or, if possible, avoidance. Thinking is dominated by the principle of equivalence (if I think so, then it is true). If I recognize a situation as dangerous, then it is dangerous; there is no doubt about that. That is why

there is only one solution to the problem: escape/avoidance. Mentally reflecting on whether things could be different than I think is a luxury that only costs time. This is exactly where the anxiety therapy of Mentalization Supporting Therapy comes into play. It goes back to Sulz (1987, 1994, 2014). The therapist negotiates with the patient (prior to the situation) and a consensus is reached that there is no danger. Thus, the anxiety reaction signals a danger that does not exist. It is a false alarm. This statement is the metacognitive framework for further action. It is only as long as this framework applies that the subsequent anxiety exposure is appropriate. The decisive step is the mentalization-promoting intervention. The patient abandons his pre-mental certainty that there must be a real danger when his anxiety tells him so. He initially considers that there is no danger and ultimately, together with the therapist, comes to the conclusion that the anxiety is a false alarm and therefore the situation no longer needs to be viewed vigilantly. He can now focus more on his anxiety reaction. Since exposure is the most effective intervention, he decides to perceive the anxiety and let it be there until it disappears on its own.

AACES training (Sulz, 2017a,c) consists of five steps:

- A: Mindfulness – I pay attention to early anxiety signals
- A: Acceptance – I accept my anxiety
- C: Commitment – I decide to stay on my way to the goal
- E: Exposure – I clearly feel my anxiety in the fearful situation
- S: Self-reinforcement – Afterwards I reinforce myself for having dealt with the anxiety properly

This paper pertains to the question of the effectiveness of AACES training in the context of Mentalization Supporting Therapy (MST). This will first be tested with a non-clinical sample in a pilot study. It is the third MST outcome study.

Study design and methods

This is the third of three MST outcome studies.

1st evaluation study:

– 20 participants – psychology students from the Fresenius University

– 7-week mentalization promotion training with pre- and post-measurements (on site and online)

– The effect of 7 MST training sessions on mentalizing ability and personality strength was examined

– *Key results:* Significant increase in the ability to mentalize, reduction in dysfunctional personality traits and better dealing with central anxiety (Sulz et al. 2023)

2nd evaluation study:

– 20 participants – psychology students from the Fresenius University

– 6 double training sessions (on site)

– Focus: emotion tracking

– *Key results:* Correlation between attachment security and mentalizing ability, significance of the effectiveness of the training regarding the increase in mentalizing ability (Sulz et al. 2024)

3rd evaluation study:

– 23 participants – psychology students from the Fresenius University

– 5 double training sessions (on site)

– Focus: AACES anxiety training

– *Key results:* AACES was effective, including correlation between attachment security, mentalizing ability and effectiveness of training *(this study is reported about here)*

Study design

- quantitative, experimental, single-arm longitudinal study
- 3 measurement points (before, during and after intervention)
- Recruitment of test subjects via:
  - social media (Instagram, Facebook)
  - notice board of the Fresenius University
  - SONA test subject system
  - website of Psychologie heute
  - forwarding by email to the Catholic University of Eichstätt-Ingolstadt
  - flyer notice

Participants/sample

- 20–40 years old, suffering from recurring anxiety/phobia in certain situations, no psychotherapy
- Incentive: 12 test subject hours, €50 Zalando voucher
- Participants had to register by email and were then added to a WhatsApp group

- Number of participants set to 20 (minimum 10, maximum 25)
- 17 female, 6 male
- Mean age 23.6 years (SD = 3.44, Min. = 20, Max. = 35)
- 19 students (82.6%), 2 employed (8.7%), 2 unemployed (8.7%)
- 65% simple phobia (n = 15), 26% social phobia (n = 6), 1 panic attack (4.3%), 1 generalized anxiety (4.3%)

Anxiety content of the test subjects:

- Driving a car
- Deep waters
- Sharks and orcas
- Fear of heights
- Spiders
- Long distance
- Birds
- Wasps
- Emetophobia
- Pain
- Social anxiety

Experimental/therapeutic intervention:

- Subjects take part via Zoom in a total of 5 double sessions of group exercises with the aim of reducing the anxiety reaction.
- Mentalization-promoting intervention: **AACES training** (Sulz, 2017b)
    - A: Mindfulness – I pay attention to early anxiety signals

  - A: Acceptance – I accept my anxiety
  - C: Commitment – I decide to stay on my way to the goal
  - E: Exposure – I clearly feel my anxiety in the fearful situation
  - S: Self-reinforcement – Afterwards I reinforce myself for having dealt with the anxiety properly

- In addition to AACES → progressive muscle relaxation (Jacobson, 1934, cited by Hoyer & Knappe, 2020)
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Survey instruments

- General questions on anxiety to record the phobic content (Sulz, 2017)
- VDS scales of the behavioral diagnostic system (Sulz 2017d):
  - VDS20 (new version) – attachment insecurity
  - VDS28 – central anxieties
  - VDS30 – personality questionnaire
  - VDS48 – relationship-emotion-body (mentalizing ability)
  - VDS90 – complete symptoms list
  - VDS90 – questions on anxiety

Independent variables are

Attachment insecurity (VDS20)

Central anxieties (VDS28) before

Dysfunctional personality traits (VDS30)

Mentalizing ability (VDS48)

Psychological complaints/symptoms (VDS90) before

Anxiety symptoms (VDS90 questions on anxiety) before

Dependent variables are

Psychological complaints/symptoms (VDS90) after

Anxiety symptoms (VDS90 questions on anxiety) after

Central anxieties (VDS28) after

Pre-post difference of these three variables (see Fig. 1)

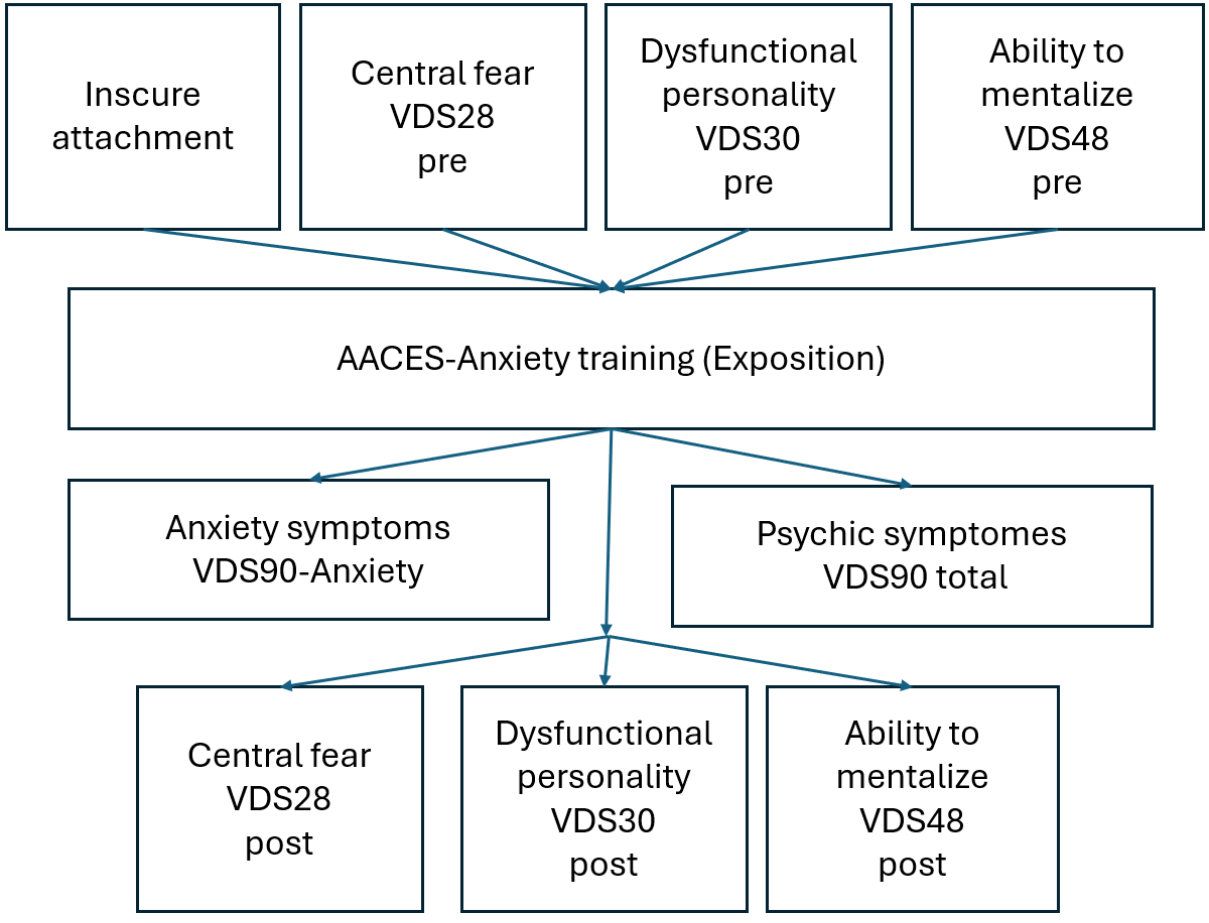

Figure 1. Study design of the 3rd MST evaluation study

The five practice evenings:

1. Introduction and practice of AACES training

2. Reports on the application, refining the approach

3. Reports on the application, refining the approach

4. Reports on the application, refining the approach

5. Final discussion in the group

The first evening comprised psychoeducation (psychology of anxiety), personal reports on the individual anxiety problem (with emotion tracking and mentalization promotion) and AACES dry exercises. The subjects agreed on how, how often, when and where to practice until the next training evening to experience the anxiety and practice dealing with it. Protocols are intended to make the exercises transparent. On the second evening, the concept of anxiety exposure was introduced theoretically (taking up a relatively short time) after initial experiences with it had already been made. The rest of the evening consisted of individual reports on attempts to apply the AACES training. Participants received feedback and advice on how to make their training more effective. It was decided together how to continue practicing. Particular attention was paid to emotional and physical experience, and metacognitive considerations were made.

The same procedure was followed on the third and fourth evening, and the individual course of the exercise process was also analyzed. Moreover, it was recommended that progressive muscle relaxation be used once daily to reduce baseline tension levels. The fifth evening comprised final reports, observations with regard to the training as a whole and decisions on how to continue practicing independently after the end of the training.

The content of the AACES training was as follows:

- **A Mindfulness – I pay attention to early anxiety signals**
    - You may have denied the onset of anxiety and acknowledged it only when it was so severe that it was too late to manage it cognitively.

- Paying attention to early anxiety signals gives you the opportunity to begin managing anxiety when the feeling of anxiety can still be well controlled.

- **A Acceptance – I accept my anxiety**
  - So far, you have been reluctant to the approach of anxiety that can no longer be kept out of your consciousness. You tensed, staring or listening paralyzed as the anxiety grew, expecting it to continue to grow and you to be at its mercy.
  - If you allow and admit that you are (still) afraid, you will be much more able to focus on the actual task of overcoming anxiety. This is the hardest part to begin with. If you finally succeed, it will be easy from then on.
- **C Commitment – I decide to stay on my way to the goal**
  - Until now you have had only escape and avoidance in mind. You looked for ways to escape and avoid things. When no external escape route was visible, you chose cognitive avoidance (e.g. distracting thoughts).
  - If you decide with all your will to stay in the situation, these efforts are no longer necessary. You can use your energy to face anxiety. You have taken a second step to take control.
- **E Exposure – I clearly feel my anxiety in the fearful situation**
  - Until now, when external escape was not possible, <u>on the one hand</u>, all the finesse of internal anxiety avoidance had been applied: distraction, shallow breathing, tension, anger. “The situation will be over in a moment, I can just about hold out for that long!”, “This time, my husband is there, but if I were all alone, then...”
  - <u>On the other hand</u>, thoughts of anxiety and catastrophe had fueled your anxiety. Now you just focus on your anxiety reactions, sense them and study them.

From this, you can establish your own self-instructions and write them, preferably in your own language, on a piece of paper and take them with you in the fearful situations:

- <u>Example of AACES self-instruction:</u>

- My anxiety is a false alarm! I feel a pressure in my chest, I feel slightly dizzy, my eyes water and I start shaking (*mindfulness*). My anxiety is there. It is there and it can stay (*acceptance*). I stay in the situation and do not run away. I want to face my anxiety (*commitment*). I feel my anxiety increasing. I do not want to stop it. I want to face it until it disappears (*exposure*). I took the opportunity to practice. I did it! Well done! This time I did not avoid the anxiety-triggering situation (*self-reinforcement*).

All individual self-instructions were checked by the therapist and returned with suggestions for changes.

Results

In this study, the 21 subjects (students who were offered online anxiety management training over five evenings) received four sessions of AACES (Mindfulness, Acceptance, Commitment, Exposure, Self-Reinforcement) training that was first practiced in dry runs and then used between sessions in the fearful situation. From the third evening onwards, they could also use progressive muscle relaxation to lower the baseline levels of their arousal, reducing the peaks of the anxiety reaction and keeping the anxiety within manageable limits. Before and after the training, the level of anxiety in the fearful situations was determined. In this way, it was possible to assess how much mean anxiety had decreased after the AACES training. In addition, the type and extent of psychological and psychosomatic symptoms before and after were evaluated using the VDS90 to determine whether the overall psychological complaints had decreased after the AACES training. Finally, it was also assessed whether the trait anxiety (VDS28), which represents the basic form of anxiety as a disposition for reacting anxiously in social situations, had decreased.

The participants were very committed and tried to benefit personally as much as possible from the anxiety training. In the debriefing, they were happy to have been able to acquire the skills to deal better with their anxiety in the future and, looking back on their own experience, to having been able to apply the training and overcome the difficulties that arose, and to having experienced anxiety decreasing. It was important that they were able to understand the origins of their anxiety and no longer had to devalue themselves because of it (the shared fate of the group members also helped here).

Outcome 1: Decrease in anxiety symptoms after AACES training (VDS90-Anxiety)

Table 1: Decrease in anxiety symptoms after AACES training (VDS90-Anxiety)

Means	N	Mean	Std.-deviation	Standarderror of Means
Pre Anxiety_VDS90	21	,93	,57	,13
Post Anxiety_VDS90	21	,54	,43	,09

t-Test			Significance		Mean Difference	95% Konfidenz-intervall der Differenz Lower value	95% Konfidenzintervall der Differenz Upper value
		df	1-sided p	2-sided p			
PreAnxiety_VDS90	7,5	20	<,001	<,001	,93	,67	1,19
PostAnxiety_VDS90	5,8	20	<,001	<,001	,54	,34	,73

Effektgrößen

		Standardiser[a]	Point estimation
Pre Anxiety_VDS90	Cohen's d	,57	1,6
	Hedges' correction	,60	1,6
Post Anxiety_VDS90	Cohen's d	,43	1,3
	Hedges' correction	,44	1,2

[a]The denominator used in estimating effect sizes.
Cohen's d uses the standard deviation of a sample.
Hedges' correction uses the standard deviation of a sample and a correction factor.

Result: Anxiety symptoms (VDS90-anxiety) improved significantly after AACES training. The mean dropped from 0.93 to 0.54 on a scale of zero to three. The effect sizes are high.

Outcome 2: Decrease in symptoms overall after AACES training (VDS90 total)

Table 2: Decrease in symptoms overall after AACES training (VDS90 total)

Means	N	Mean	Std.-deviation	Standarderror of Means
Pre Total_VDS90	21	,56	,37	,08
Post Total_VDS90	21	,33	,19	,041

t-Test					
	df	Significance		95% confiden	95% confidencei

						ceinterv all f Differenc e Lower value	ntervall f Difference Upper value
			1-sided p	2-sided p	mean Differenc e		
Pre Total_VDS90	6,9	20	<,001	<,001	,56	,39	,72
Post Total_VDS90	7,8	20	<,001	<,001	,33	,24	,41

Effect size		Standardise r[a]	Point estimation
Pre Total_VDS90	Cohen's d	,37	1,5
	Hedges' Korrektur	,38	1,6
Post Total_VDS90	Cohen's d	,19	1,7
	Hedges' Korrektur	,20	1,6

Result: Symptoms ovrall (VDS90 total) improved significantly after AACES training. The mean dropped from 0.56 to 0.33 on a scale of zero to three. The effect sizes are high.

Outcome 3: Decrease of anxiety (trait) after AACES-training (VDS28)

Table 3: Decrease of anxiety (trait) after AACES-training (VDS28)

Means

	N	Mean	Std.-deviationg	Standarderror des Means
Pre-Total_VDS28	21	.9921	.67245	.14674
Post-Total_VDS28	21	.5952	.54743	.11946

t-Test

	Test value = 0				
			Signifikance		Mean
	T	df	1-sided p	2-sided p	Difference
Pre Total_VDS28	6.761	20	<.001	<.001	.99206
Post Total_VDS28	4.983	20	<.001	<.001	.59524

Effect size

			Point	95% Confidence intervall	
		Standardiser[a]	estimation	Lower value	Upper value
Pre Total_VDS28	Cohen's d	.67245	1.475	.843	2.090
	Hedges' Korrektur	.69905	1.419	.811	2.011
Post Total_VDS28	Cohen's d	.54743	1.087	.536	1.622
	Hedges' Korrektur	.56908	1.046	.515	1.560

[a]The denominator used in estimating effect sizes.

Cohen's d uses the standard deviation of a sample.

Hedges' correction uses the standard deviation of a sample and a correction factor.

Result: Basic anxiety/trait anxiety (VDS28) was significantly lower after AACES training. The mean dropped from 0.99 to 0.60 on a scale of zero to three. The effect sizes are high.

Correlation analysis: Factors that influence the outcome. Correlations of pre-post differences with mentalization and neuroticism

Beyond the direct comparison of means before and after training, we were interested in whether other variables influenced this result. In particular, dysfunctional personality traits were assessed using the VDS30. Previous studies have repeatedly shown high correlations with anxiety. In particular, the personality traits “self-insecure, dependent, obsessive-compulsive, histrionic, and emotionally unstable” were associated with high trait anxiety. Here, only the total score of the VDS30, which can be described as neuroticism, was to be examined. High scoring suggests a personality disorder, which was not the case in the test subjects of this sample.

The second variable of interest was the ability to mentalize, which was measured using the VDS48. Mentalization is seen as a prerequisite for the ability to regulate emotions (Fonagy et al. 2008). It therefore helps to downregulate any anxiety that may arise.

Table 4: Correlations of pre-post differences with mentalization and neuroticism

Korrelationen Pearson N=21, Signifikanz zweiseitig	Difference_Anxiety_VDS90	Difference_VDS90 total	Difference_Total_VDS28	Mentalization World_VDS48	Mentalization Self_VDS48	MW_Total_VDS48
Difference_VDS90	.539*					
	0,012					
Difference_VDS28	0,059	0,296				

	0,800	0,192				
Mentalization world_VDS48	.550**	0,309	0,319			
Mentalization self_VDS48	0,010	0,172	0,159			
Mentalization total_VDS48	0,120	0,117	0,167	0,215		
	0,603	0,613	0,469	0,350		
Mentalization world_VDS48	.436*	0,300	0,295	.793**	.729**	
Mentalization self_VDS48	0,048	0,187	0,194	0,000	0,000	
Mentalization total_VDS48	0,301	0,271	.591**	0,388	-0,059	0,230
	0,185	0,236	0,005	0,083	0,801	0,315

** The correlation is significant at the 0.01 level (2-sided).

* The correlation is significant at the 0.05 level (2-sided).

Result:

The decrease in clinical anxiety/anxiety symptoms (VDS90) is also associated with a decrease in basic anxiety (VDS28) (-VDS90-anxiety). Individuals with higher neuroticism scores showed more pre-training clinical anxiety (VDS90-anxiety) and trait anxiety (VDS28). The more pronounced the overall mentalization and the mentalization of the world are, the more do the anxiety symptoms subside (pre-post difference in VDS90-anxiety).

Correlations of values for anxiety symptoms (VDS90), psychological findings (VDS90-total) and basic anxiety (VDS28) prior to training

Table5: Correlations of values for anxiety symptoms (VDS90), psychological findings (VDS90-total) and basic anxiety (VDS28) prior to training

Spearman 2-sided	Neuroticism_VDS30	Pre Anxiety VDS90	Pre Total VDS90
Pre Anxiety_VDS90	.544*		
	0,011		
Pre Total_VDS90	.677**	0,413	
	0,001	*0,063*	
Pre Total_VDS28	.714**	.493*	.733**
	0,000	*0,023*	*0,000*

Result: Pre-training clinical anxiety symptoms correlate with neuroticism, pre-training basic anxiety and pre-training overall psychological stress. In addition: self-insecure and dependent individuals showed more severe anxiety symptoms and more overall psychological distress (VDS90).

Analysis of moderator variables moderating the effect of AACES training on the reduction of anxiety symptoms

Even if there is no significant correlation, a variable can have an indirect effect and then acts as a moderator that changes the relationship between two variables. Accordingly, we could not find a significant correlation between attachment

insecurity and the pre-post difference in clinical anxiety (VDS90 anxiety scale). So the question remained whether attachment insecurity has a moderating effect. For neuroticism, it was examined whether there was a moderator effect in addition to the correlation. The moderating effect of these two variables on anxiety reduction was examined:

a) Neuroticism (total score of the VDS30 questionnaire to record dysfunctional personality traits)
b) Attachment insecurity (15 questions about insecure attachment)

Ad a): Neuroticism (total score of the VDS30 questionnaire for recording dysfunctional personality traits) influences many reactions. In this respect, it was obvious to examine whether it influences the ability to benefit from AACES training. Regression analysis revealed no significant moderating effect of neuroticism:

ΔR^2 = 8.02%, F(1.17) = 2.42, p = 0.1382, 95% CI[-0.2150, 1.2421]

Ad b): Attachment insecurity (operationalized by 15 questions about insecure attachment) is primarily seen as an obstacle to development and learning, so it can also be assumed that the effect of AACES training is inhibited. In fact, there is a significant moderation of the training effect. Insecure attachment impairs the effectiveness of AACES:

ΔR^2 = 19.66%, F(1.17) = 15.46, p = 0.0011, 95% CI[0.0312, 0.1115]

Summary of results

The outcome of the experimental study on the effectiveness of AACES training in Mentalization Supporting Therapy was examined with regard to three variables (comparing pre-post means):

a) Anxiety symptoms (VDS90 anxiety)

b) Psychological findings (VDS90 total)

c) Central anxiety as trait anxiety (VDS28 total)

The t-test for dependent samples revealed highly significant differences. After AACES training, anxiety symptoms and psychological well-being as a whole were significantly improved. The effect sizes were high. Trait anxiety as an indicator of general anxiety was also significantly lower. While neuroticism did not influence these results, attachment insecurity had a moderating effect, reducing the effectiveness of the training. However, individuals with higher neuroticism scores showed more clinical anxiety (VDS90 anxiety) and trait anxiety (VDS28) prior to the training.

The influence of other variables on the outcome was examined in two ways: first by a direct correlation analysis and second by an (indirect) moderation analysis. The correlation analyses suggested that neuroticism had a negative impact on the effect of anxiety training, while mentalizing ability led to a better outcome.

In the moderation analyses, we also found a moderating effect for neuroticism: Neuroticism decreases the reduction in anxiety symptoms. Likewise, the moderating effect of attachment insecurity consisted in decreasing the anxiety reduction through AACES training.

Discussion

Mentalization Supporting Therapy (MST) is a transdiagnostic approach that can be used for anxiety and obsessive-compulsive disorders as well as for depression, psychosomatic disorders and also for cluster C personality disorders according to ICD 10 (Dilling et al. 1999). The present experimental study is not based on a clinical sample, but involved volunteers with a simple phobia or social anxiety. They had neither an Axis I nor an Axis II disorder. They took part in an online group training on five evenings where they learned how to apply the AACES training: be mindful of early anxiety signals, accept that the anxiety is still there or keeps coming back, decide to face the anxiety without fleeing or avoiding it, observe the anxiety during the exposure and watch it gradually exhaust itself and diminish, and eventually, encourage yourself that you have practiced and that it was a good start.

The participants worked hard to deal with their anxiety in a new way, got to know its origins, understood why the anxiety remained and what they can do to leave the phobia behind them. Conceptually, the training consisted of two

approaches: on the one hand, the exposure procedure and, on the other hand, a metacognitive approach that led to mentalization, reflection and a deeper understanding of the origins of the symptoms and thus also to a more elaborate theory of mind, from which the best possible way of dealing with anxiety and phobia resulted.

The experimental design raised the question of whether even minimal MST group training can bring about a significant reduction in anxiety symptoms. We found a highly significant decrease in anxiety symptoms with a very high effect size. In addition, improvement of psychological well-being was highly significant, and the trait anxiety “central anxiety” improved as well (Sulz 2017a-c). Dysfunctional personality traits affected an improvement, while a pre-existing mentalizing ability appeared to facilitate the effect of AACES exposure training. Attachment insecurity as a moderator variable also had an unfavorable effect on the improvement of symptoms. As this was an initial pilot study that lacked a control group, generalizations are not possible. The next step must be randomized studies including control groups.

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