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Article

THE EFFICACY OF A COMPASSION, ACCEPTANCE AND MINDFULNESS-BASED PILOT INTERVENTION FOR ADOLESCENTS' TEST ANXIETY: A CASE STUDY USING THE ACADEMIC PROGRAM

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Abstract

Test anxiety (TA) is one of the most common difficulties for secondary school students, with a negative impact in performance, mental health and well-being, and involving high levels of shame, self-criticism, and experiential avoidance. TA may also be conceptualized through an evolutionary and contextual approach to human suffering. To the best of our knowledge, no study has covered this conceptualization, nor has any previous TA treatment been simultaneously manualized, psychotherapeutic, and co-integrated compassion, acceptance and mindfulness-based practices. Moreover, studies on the efficacy of individual treatments directed to TA in adolescents are scarce, and case studies provide a comprehensive, detailed, and useful input about new models and treatments to both researchers and practitioners. The AcAdeMiC Program (*Acting with Acceptance, Mindfulness and Compassion to overcome Test/Exam Anxiety*) is a manualized 12-session online individual psychotherapeutic intervention, aiming to decrease test anxiety and boost well-being, compassion, acceptance and mindfulness. This is the first study presenting the treatment of an adolescent with high levels of test anxiety using this program. The Reliable Change Index (RCI) showed improvement, and maintenance or increase of gains over time, across all targeted symptoms and processes. The AcAdeMiC was also qualitatively and quantitatively perceived as useful and effective at posttreatment. This clinical case study provides a first glance at

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the conceptualization and treatment of TA with the new AcAdeMiC program.

Keywords: test anxiety, adolescents, intervention, case study, compassion, acceptance, mindfulness.

Many adolescents experience anxiety symptoms in the school context, especially when their performance is being examined (American Psychiatric Association, 2022). In test/exam situations, this is defined as *test anxiety* (TA), an intense fear or worry of negative evaluation when facing a formal evaluation of performance, that can result in unpleasant behavioural, physiological, and emotional responses (Zeidner, 1998). Up to 55% of adolescent students report feeling highly anxious for a test, despite the degree of preparation (Organisation for Economic Cooperation and Development; OECD, 2017; Putwain & Daly, 2014; Putwain & Symes, 2018), which carries consequences like impaired performance (Steinmayr et al., 2016), concentration, memory and attention (Owens et al., 2014), increased depression, anxiety and stress (Akinsola & Nwajei, 2013; Putwain et al., 2021; Wuthrich et al., 2021), and reduced life satisfaction and well-being (Steinmayr et al., 2016; World Health Organization, 2016). Academic achievement is, in fact, extremely valued, both in secondary education and at university (Feld & Shusterman, 2015), when TA becomes the primary reason for seeking specialized psychological support (Melo et al., 2006). This demands a broader understanding of the TA phenomenon, and the development of targeted and structured early interventions.

Test anxiety conceptualization and treatment efforts

TA remains unclassified in the DSM-5 (APA, 2022), which may account for the little attention it has received, especially in terms of novel clinical interventions. Conceptual models are either cognitive and/or affective-physiological with elements like test-irrelevant thoughts, confidence or perceived competency (e.g., Spielberger & Vagg, 1995; Zeidner & Matthews, 2005), or biopsychosocial, with contextual and social components like fear of social humiliation, influences of family, school, or community (e.g., Lowe et al., 2008; Segool et al., 2014). Treatment interventions for adolescents' TA in the last two decades have also pointed to either cognitive-behavioural conceptualization and techniques, or solely to academic skills training. Although varying in format and duration (see Soares & Woods, 2020; von der Embse et al., 2013, for reviews), none encompassed a structured psychotherapeutic program, which predicts stronger treatment outcomes (Cummings et al., 2013). Furthermore, they mainly pursued the reduction of TA levels, not targeting other mechanisms. It is paramount that new interventions follow a contemporary concept of recovery and mental health, conceived as a more "*dynamic state of internal*

equilibrium", which includes emotional regulation, empathy, flexibility and ability to cope with adverse events (Galderisi et al., 2015).

New directions

The notion that meaningful therapeutical change is more than just symptom reduction (e.g., changing the content of negative automatic thoughts in cognitive-behavioural therapy) is not new (Stott, 2007). Developing more flexible and adaptive responses to difficult environments, and coping with the affective experiences that co-occur, is crucial to said change (Gilbert, 2010). This requires developing and experiencing feelings of reassurance and safeness, through the access to certain neurophysiological systems that enable emotional regulation (Gilbert, 2010). In the last few years, new treatment advances have emerged in this direction. While also focusing on improving well-being, these approaches defend the need to develop a different relationship with our internal experience and with ourselves. Mindfulness has been widely studied as a way to learn to pay attention with flexibility, openness, and curiosity, to consciously connect with and engage in whatever is happening in the moment (internally and/or externally) to allow for a wise choice of actions (Harris, 2009; Kabat-Zinn, 1994). The development of this competency is included in several new approaches such as Compassion Focused Therapy (CFT; Gilbert, 2010), and Acceptance and Commitment Therapy (ACT; Hayes et al., 1999).

CFT originates in the understanding that, to regulate emotional states, humans may turn to three emotion regulation systems: the *threat system* (whose role is to quickly detect and protect from threats); the *drive system*, focusing on seeking out resources to survival and prosperity; and the *soothing system*, focusing on settling into states of safeness, rest and digest (Depue & Morrone-Strupinsky, 2005; Gilbert, 2010, 2022). Additionally, humans are evolutionarily programmed to value the way they exist in the mind of others (Gilbert, 2010), to be accepted and chosen (Gilbert, 1998). When perceiving that this is not the case, the feeling and experience of *external shame* arises, which can also become *internalized* (*internal shame*) (Gilbert, 2007; Kaufman, 1996) and is a by-product of the threat system. Our social nature also allows us to have a relationship with ourselves, and often, when things go wrong or do not correspond to what we wanted, self-criticism may emerge, in a form of a hostile internal relationship also wired in the threat system (Gilbert & Irons, 2005).

Shame and self-criticism are linked to psychopathology in general (Gilbert, 2010; Matos et al., 2020) and to TA in adolescents in particular (Cunha & Paiva, 2012; Pires et al., 2020). In fact, and similarly to other anxiety disorders (Welford, 2010), TA may be a result of an unbalance of the three emotion regulation systems. On one hand, there is an overactivation of the threat system, before, during, or after tests, and when grades were not as good as expected. This may be shown in the form of (often self-critical) thoughts about failure and social comparison (e.g., "I cannot do anything right", "I will not get into university", "My parents/ teacher/ classmates will think less of me"), and defensive emotions (e.g., anxiety). Many students may

try to regulate those threats by turning to the drive system (e.g., work too hard to avoid the perceived failure), originating the threat-drive loop (Gilbert, 2014). In turn, there is a difficulty to access the soothing system and more helpful forms of emotion regulation.

       This is central in CFT (Gilbert, 2010), namely, the fostering of (self-)compassion, a motivation rooted in the soothing system that orientates to "(…) a sensitivity to suffering in self and others with a commitment to try to alleviate and prevent it" (Gilbert & Choden, 2014, p. 98), and an alternative internal relationship to self-criticism (Gilbert, 2010). Therapists compassionately guide patients to realize that our functioning is not our fault (Cowan et al., 2016), while providing training (Compassionate Mind Training; CMT; Gilbert, 2010) on specific practices that speak to the triggers of the threat system and boost the soothing system, hence balancing the three emotion regulation systems (Gilbert, 2019). There is empirical evidence of CFT and other compassion-based interventions in reducing psychopathology, shame, and self-criticism, and improving well-being (Kirby, 2017; Leaviss & Uttley, 2015), particularly with adolescents (Bluth et al., 2016; Figueiredo et al., 2021), and of the protective role of self-compassion in test anxiety (O'Driscoll & McAleese, 2022).

       Cultivating compassion also involves developing more flexible responses that may be more helpful for the person's life journey (Gilbert, 2010, 2022), which is consistent with the contemporary concept of therapeutic change and mental health (Galderisi et al., 2015). This flexibility means focusing on "what matters", taking perspective regarding our actions, thoughts and emotions, with a wise sensitivity to the context. In fact, one of the main key risk factors for psychopathology (e.g., anxiety) is cognitive, emotional, and behavioural rigidity (Beck et al., 1985), defined by the Acceptance and Commitment Therapy model (ACT; Hayes et al., 1999) as *psychological inflexibility*, that is, the inability to act according to valued ends while in the presence of unpleasant thoughts, emotions, or physical sensations (Hayes, 2004), causing suffering. Psychological inflexibility combines six interrelated processes. The first, *cognitive fusion*, means overidentifying with uncontrollable internal events (e.g., thoughts, memories), taking them and reacting to them as if they were what they represent – reality itself (Hayes, 2004). This overidentification takes the name of *conceptualized self* (2) when occurring with unhelpful thoughts about ourselves (Harris, 2009). This fusion then leads to *experiential avoidance* (3), the unwillingness to experience internal unpleasant events, resulting in efforts to avoid, change, or control them (Hayes et al., 1999). These processes also reflect the overactivation of the threat system: when entangled in our minds and avoidance strategies, our attention is narrowed (and future-directed, in anxiety problems) to process those perceived perils (Gilbert, 2010). This *loss of contact with the present moment* (4) refers to a sense of not being "fully present" in life (Hayes et al., 1999). Particularly in TA, the notion that attention is shifted from the task to interfering thoughts about failure goes way back (Sarason, 1984). Thus, individuals not only do not act on what is important (*lack of committed action*) (5), as sometimes they lack

clarity about what is really important (*weak values clarification*) (6) (Hayes et al., 1999). This state of psychological inflexibility is the case for adolescents with TA (Cunha & Paiva, 2012; Pires et al., 2020), and may be conceptualized as a *cognitive fusion* with failure related thoughts or self-judgments (*conceptualized self*), diverting the student's attention from the task (*loss of contact with the present moment*). Consequently, this leads to *experiential avoidance* of those thoughts or feelings in important situations, resulting in a *lack of committed action* with *values* that might also be weakly clarified, such as learning or spending quality time with friends and family.

It is possible to say that, in this state of psychological inflexibility, people get stuck in threat processing, resulting in an unbalance of the three emotional regulation systems.

The ACT model presents the alternative six processes of *psychological flexibility* (Hayes et al., 1999). *Contacting with the present moment* (1) refers to the previously described competency of *mindfulness* (Harris, 2009). This allows for *cognitive defusion* (2), that is, learning to detach from our thoughts, images, and memories, while becoming an *observing self* (*self-as-context*) (3), a viewpoint from which we observe our internal experiences (Harris, 2009). This is done with *acceptance* (4), an openness and willingness to experience private events as they are, without struggle (Hayes et al., 1999). The aim is to wisely change to or persist on behaviours that are aligned with our *clearly defined values* (5), called *committed action* (6) (Hayes et al., 1999). Boosting the soothing system permits this state of flexibility, as self-compassion smoothly bonds all these components. For adolescents with TA, this might mean acknowledging their human nature, context, and avoidance patterns, while choosing to access a stillness of mind and the courage to act wisely, even in the presence of difficult inner experiences.

ACT interventions have been effective in reducing psychopathology and in increasing psychological flexibility (Twohig & Levin, 2017), particularly in adolescents (e.g., Livheim et al., 2015). Parallelly, some were proved effective in reducing test anxiety in elementary school (Bozorgi et al., 2018) and university students (Miri & Mansouri, 2018).

Overall, the efficacy of interventions that foster compassion, acceptance and mindfulness in adolescents, as well as the pertinence of using these components to conceptualize TA, invite to their further exploration in this condition.

A psychological intervention that is structured, manualized and empirically validated finds support to its appropriateness and scientific relevance, inspiring its use from clinical practitioners, but also to replication and expansion of its findings by researchers (Sanderson, 2016). Additionally, as the history of the research-practice alliance has shown, a more descriptive and expositive input is a suitable and rather valuable first step to the building of the knowledge that will ultimately guide practice. A case study, for instance, holds that heuristic value, and properly embodies that primary effort of putting theory into (more) research and practice (Crowe et al., 2011; Davison & Lazarus, 2007; Schwandt & Gates, 2018). Case studies grant a

more complex and in-depth comprehension that does not fit in larger quantitative studies (Crowe et al., 2011; Davison & Lazarus, 2007; Schwandt & Gates, 2018). This bears special significance in this study, considering that, to the best of our knowledge, TA has never been conceptualized through the lens of the evolutionary and contextual approach to human functioning and suffering, nor has an intervention for adolescents' TA been simultaneously structured, manualized, with a psychotherapeutic setting, focusing beyond symptom reduction, and boosting compassion, acceptance, and mindfulness competencies combined.

Therefore, the current paper aims to present a case study, whose conceptualization and intervention were based in the mentioned approach, as well as describe and present the first qualitative and quantitative results of a novel intervention for adolescents with TA. By presenting the story and therapeutic process and progress of this teen, this case study seeks to be the first glimpse to this new interventions' adequacy and efficacy, and the scientific gate for broader advances in the field of TA intervention, to ensure informed and improved practices with teens with similar struggles.

The AcAdeMiC Program

The AcAdeMiC: *Acting with Acceptance, Mindfulness and Compassion to cope with Test/Exam Anxiety* (ClinicalTrials.gov Identifier: NCT04850872) was developed from the aforementioned theoretical background, in the context of a larger study with a larger sample, by a research team with experts in the fields of anxiety disorders, adolescent psychology, CFT and/or ACT, most of them with clinical experience in the assessment and treatment of individuals with TA. The team performed an extensive literature search and had advanced training on compassion, acceptance, and mindfulness-based approaches with a special focus on adolescents with anxiety difficulties. The program was initially to be applied in-person; however, due to the 2020-2021 pandemic context constraints, its format changed to online. Online mental health interventions are generally well-received by adolescents and represent a cost-effective and accessible treatment alternative (Sweeney et al., 2019).

A manualized draft of the AcAdeMiC was developed and tested individually with a small group of adolescent students with TA. Qualitative and feasibility data led to content and structure related changes that resulted in the final version.

This program has some similarities with other compassion, acceptance, and/ or mindfulness-based programs, such as Compassionate Mind Training (Gilbert, 2010), Youth DNA-V (Hayes & Ciarrochi, 2015), Mindful Self-Compassion (Germer & Neff, 2019), and Making Friends with Yourself (Bluth et al., 2016), but sticks out by addressing the specific difficulties and experiences of adolescents with TA.

The AcAdeMiC is a manualized online psychotherapeutic program for adolescent students that encompasses 12 90-minute individual weekly sessions, delivered by a trained therapist. The main goals are to decrease TA levels, increase general well-being, and foster competencies of self-compassion, acceptance and

mindfulness. Participants receive a workbook to follow the sessions, comprising summaries, exercises, and visual aids that portray the program's key skills. The structure follows a progressive strategy of change, including four modules that cover the following main topics: i) Psychoeducation regarding the mind's nature in general, and anxiety and TA in particular, using an evolutionary and contextual approach to human experience and suffering; ii) Psychoeducation on key concepts and competencies, such as mindfulness, acceptance, cognitive defusion, values, committed action, and self-compassion; iii) Mindfulness exercises to cultivate present moment awareness and a non-judgmental attitude towards one's experiences, particularly concerning TA and academic performance; iv) Promotion of an adaptive attitude towards learning, studying and evaluative situations, namely through academic behaviour focused on values and committed action, rather than one exclusively focused on performance and results (which serves anxiety, the threat and/or the drive system, and experiential avoidance); v) Acceptance of difficult internal experiences (feelings, body sensations), and cognitive defusion skills to reduce avoidance patterns; vi) Promotion of a relationship with oneself based on self-compassion, to counteract a relationship based on shame and self-criticism. Table 1 displays an overview of the AcAdeMiC's modules, sessions and key messages.

Table 1. Brief Overview of The AcAdeMiC Program.

Module	Session	Theme	Key messages of the session
1. How our mind works and the role of test anxiety	1	The tricky brain Emotion regulation systems Test anxiety and the threat system Common humanity	Humans have a tricky brain, a result from the interaction of its old and new parts
			Anxiety is an evolutionarily inherited human emotion, focused on our survival
			We have three emotion regulation systems: The threat system (where test anxiety is mostly coded), the drive system and the soothing system
			All humans experience suffering, which can be particularly challenging in adolescence. We are not alone.
	2	Emotion regulation systems (cont.)	The threat system, and sometimes the drive system, are recruited when we experience test anxiety; the soothing system is deactivated
			We can learn how to cope with our test anxiety when it is not useful, through balancing the three systems, especially through activating the soothing system
2. Awareness of avoidance and motivation to change	3	Life values	Values are qualities or ways we choose to act that are important to us and can guide our goals and actions
			Values clarification can help us balance our emotion regulation systems and activate the soothing system
	4	Creative hopelessness Overview of the competencies to develop in the Program	Many of us try to avoid or control our test anxiety trough several strategies that, in addition to not helping reduce it, on the long term, can drive us away from what is valuable to us
			These sessions aim to boost several competencies that can be more useful in managing test anxiety and moving towards what's important to us
3. Coping with test anxiety	5	Mindfulness: definition, in daily life, in test anxiety	Humans function mainly in "automatic pilot" mode, coded in the threat system and focused on our protection and survival
			This "automatic pilot" can be useful or not, depending on whether we use it to follow our values
			When not useful, we can learn to kindly pay attention to the present

Module	Session	Theme	Key messages of the session
			moment, without judgement, to choose what we do wisely – mindfulness –, hence stimulating our soothing system
	6	Shame and self-criticism Learning to soothe the inner critic	Feelings of shame and a harsh inner critical voice (both from the threat system) may often emerge in the context of test performance, aiming to "keep us from failing"
			However, despite not having a bad intention, this inner critic is not very effective as it makes us even more anxious, frustrated, sad and often hopeless
			Activating our soothing system is key to calm this inner critic
	7	Self-compassion: definition, resistances, practice	Self-compassion means treating ourselves the same way we would treat a dear friend
			It is a part of us that can reassure both the critical and the criticized parts
			It is a helpful resource that can take the form of a "compassionate friend" that we can count on when we are going through a rough moment, that wisely comforts, accepts and encourages us
	8	Compassionate cognitive defusion	Our mind is always producing thoughts, some of them in the form of self-evaluations or "stories" about us.
			Not all our thoughts are useful or help us go in the direction of our values. We can be mindfully aware of them, activating our soothing system to compassionately recognize our mind's good intention of protecting us, and deciding to do what's best for us
	9	Compassionate acceptance	It is not possible to control thoughts or feelings, despite us trying hard to do so – this is called *resistance* (a defence of the threat system) and it increases suffering
			A more helpful strategy is to be willing to experience our thoughts and feelings, however unpleasant – *Acceptance*. This means openly allowing the presence of unwanted internal experiences, in order to fully commit with our values, which inherently requires compassion
	10	Self-compassion: practice (cont.)	There are several practices which can help us activate our soothing system, that recruit self-compassion, mindfulness, acceptance and defusion, all competencies that allow actions committed with our values and greater well-being
			We can, for instance, vividly imagine and describe our compassionate friend, and imagine what and how they would talk to us in a difficult moment
	11	Self-compassion: practice (cont.) Loving-kindness: definition, practice	The compassionate part of us can always respond with wisdom, assertiveness and kindness to the critical part
			To meet difficult emotions, we can label them, be aware of them in the body, and then soften them, soothing ourselves and allow us to feel them
			Loving-kindness is a friendly attitude and a wish that us and others may be happy, and can be developed for everyone, starting with a loved one
4. On the road to well-being. Reviewing gains and relapse prevention	12	Loving-kindness: practice (cont.) Gratitude Self-compassion: practice (cont.)	Loving-kindness can also be directed to ourselves
			Gratitude means appreciating and being thankful for the good things in life, however small they may seem. It allows us to be in and enjoy the present moment and to focus on what matters to us
			Gratitude extends even to what we learned in or from the subjects in school that trigger us greater anxiety
			Self-compassion may materialize in an empowering and encouraging compassionate letter to our future self

Therapist and patient were required to secure their privacy during sessions. The setup for both included a laptop, a web camera, a headset (preferable), and a

stable internet connection. The sessions were delivered using the *Zoom* program (Zoom Video Communications, Inc., 2020 [Computer software]).

Case introduction

Daniel (D.; pseudonym) is a 17-year-old boy in the 11th grade in a secondary school in Centre Portugal. Written consent from D. and his education guardian was obtained, and anonymity and confidentiality were guaranteed. At baseline, D. completed the assessment protocol, scoring 101 on the Reactions to Tests for Adolescents (RTT-A; Pires et al., 2022a), which was one standard deviation above the mean, representing high test anxiety. He was additionally diagnosed with Social Anxiety Disorder (cf. Assessment). Other variables collected at baseline, post-treatment and 3-month follow-up are further presented in the Assessment section and in Table 2.

Table 2. Daniel's Scores from Baseline to 3-month Follow-up and Clinical Improvement

Measures (M, SD)	T0	T1	T2	RCI 1	RCI 2
RTT-A – Reactions to Tests for Adolescents (69.02, 17.53)	101	94	65	-1.47	-7.55
Tension (18.63, 6.16)	24	21	17	-1.61	-3.76
Worry (20.45, 5.82)	35	33	24	-0.71	-3.91
Test Irrelevant Thinking (19.28, 6.53)	31	30	16	-0.35	-5.27
Bodily Reactions (10.66, 3.75)	11	10	8	-0.35	-1.06
SAS-A – Social Anxiety Scale for Adolescents (40.77, 17.64)	68	51	52	-3.04	-2.86
Fear of Negative Evaluation (18.01, 10.18)	29	19	19	-3.70	-3.70
Social Anxiety and Distress-New (15.70, 7.01)	26	25	24	-0.39	-0.77
Social Anxiety and Distress-General (7.06, 4.94)	13	7	9	-3.06	-2.04
EISS – External and Internal Shame Scale (8.87, 5.26)	13	7	4	-1.79	-2.67
FSCRS-A – Forms of Self-Criticizing and Reassuring Scale for Adolescents					
Inadequate Self (13.30, 8.54)	26	12	11	-4.54	-4.86
Hated Self (2.32, 2.28)	4	0	1	-1.56	-1.17
DASS-21-A – Depression, Anxiety and Stress Scales for Adolescents					
Depression (4.33, 4.37)	14	10	3	-1.45	-3.98
Anxiety (3.28, 3.60)	6	2	0	-1.19	-1.79
Stress (5.19, 4.27)	16	9	2	-2.18	-4.35
SCS-A – Self-Compassion Scale for Adolescents (78.99, 14.62)	67	84	106	+2.20	+5.04
TA-AAQ-A – Test Anxiety Acceptance and Action Questionnaire for Adolescents (61.56, 16.17)	26	42	46	+2.90	+3.62
CAMM – Child and Adolescent Mindfulness Measure (24.28, 5.89)	18	27	25	+2.75	+2.14
MHC-SF – Mental Health Continuum-Short Form					
Emotional Well-Being (11.76, 2.70)	8	8	11	0	+1.61
Social Well-Being (13.48, 5.50)	9	9	9	0	0
Psychological Well-Being (19.68, 6.13)	16	21	25	+1.46	+2.63

Note. T0 = Pre-treatment, T1 = Post-treatment, T2 = 3-month follow-up; RCI 1 – improvement from T0 to T1; RCI 2 – improvement from T0 to T2. RCI values of ±0.84 correspond to significant clinical change within 80% CI, ±1.28 within 90% CI, and ±1.96 within 95% CI. M = mean of the general sample; SD = standard deviation of the general sample.

Presenting complaints

D. reported feeling high TA for approximately six years, although "it feels like forever". This anxiety was greater in Math and Chemistry, subjects to be "tested in national exams" that year and that would count to his university admission.

D. felt anxious especially before and during tests. He reported always studying hard, "at least one week beforehand". When feeling anxious during studying, he described sensing his heart racing, and coping by "continuing my task to follow my schedule, I only allow myself to stop after dinner". During tests, he used to think that "I am totally 'freaking out'" and "I am not getting it". To cope, he would "try to isolate myself in a bubble and would not get out until I finished", doublecheck his answers several times, and in open-ended questions he would write more than was needed "to make sure the teacher counts it all". At times, he had mental blocks, thinking that he "needed to quit" and would start to cry. He would either not move to the next question until he remember the answer, or finished the test as soon as he could for it "to just be over". After tests, although he admitted he would like to discuss the answers with his classmates, he would "run away" to avoid being with "the risk of being wrong".

D. acknowledged these strategies were not effective in reducing his anxiety and had brought him negative consequences in concentration, learning and interaction with classmates, and less time to finish the tests. Although he generally has "good grades", that year he started to have negative ones in Chemistry. D. fears what his teachers, tutors, and parents might think if he has a "bad grade" ("I do not want them to think I did not put an effort"). He also does not want his classmates "to think I know less than them". When he has a "bad grade", he thinks "I did not study enough", "I should have prepared myself more", and "I will not get into university", triggering more anxiety.

D. also felt anxious in oral presentations: "When I am in my seat, I know what I have to say, but in front of the class I get blocked, I just read and do not take my eyes off the paper, which influences my grade". Furthermore, he fears and avoids social interactions (with adults and adolescents), except with two or three close friends. He avoids "going to parties unless I know who is going", "talking to strangers or people I do not know well", and "when I have to participate, I try to rehearse what I am going to say". In public places, he is usually on his phone or drawing, "to not attract attention".

History

D.'s personal history was obtained from the baseline assessment using semi-structured interviews (cf. Assessment). D.'s development occurred as expected, with no significant concerns. He grew up in a city in Centre Portugal. He always had a

shy temperament; he had a few friends at school but always preferred solo activities. At 7-8 years old, he suffered bullying from peers, who mocked him about being very quiet and always drawing. He believed this event exacerbated his difficulty in making friends.

He lived with both his parents and his younger brother up until the age of 13, when his parents got divorced. He had a good relationship with both his parents, although better with his father, since "we have the same interest in art" – D. loves drawing in his free time, an activity they used to enjoy together. His father was a calm and reserved person. When he left home, D. had "a hard time" accepting the divorce, not only because he missed his father but also "my mom got a boyfriend way too fast", and he came to live with them shortly after. This event happened around the same time D. changed schools (in the 7th grade), leaving his (few) closest friends. He was showing depressive symptoms, as he felt tired, sad and angry "all the time", lost appetite and had trouble sleeping. At this time, "only the computer games helped me escape". His mother got concerned and took him to a clinical psychologist, which helped him "accept the situation and get better".

D. also stated not feeling comfortable at home, due to not having that much in common with his mother, stepfather, or brother. He sees his father occasionally but regrets not being more often, as he lives far. He likes to spend time with friends who share the same interests, such as drawing, comic books, and videogames. He says it is easier for him to spend time alone, although he would like to be "more extroverted". He values staying focused in school "to get into the course I want [Computer Engineering]". While he loves drawing, "I see it most as a hobby" and does not consider following it professionally. Despite not experiencing pressure from his parents to excel academically, he said he always cared about school and his grades ("my main motivation").

D. describes himself as a "pleasant person, who values to cheer others up", and "to discuss interesting ideas". He does not like to talk or show much about himself, he prefers to "blend in". When upset, "I always try to appear cool and calm about it, I do not tell what I am really feeling". At the start of the intervention, he was living with his mother, stepfather, and brother, who was 13 at the time. He was preparing for the upcoming tests that school period, and was starting to feel anxious about it.

Assessment

Semi-structured clinical interview

At baseline, D. was assessed online with the *Mini-International Neuropsychiatric Interview for Children and Adolescents* (MINI-KID; Sheehan et al., 2010; Portuguese Authorized Version by Rijo et al., 2016), 2 weeks before the start of the program. The MINI-KID is a short and accurate structured clinical

diagnostic interview to assess a wide range of Axis I disorders in children and adolescents, according to DSM-5 (APA, 2022) criteria, impairment and duration of symptoms. It is organized into diagnostic sections, with "yes/no" questions, each section starting with 2 to 4 screening questions before the additional symptom questions. During the interview, D. presented a low voice and a timid posture, although having disclosed easily to the interviewer. Apart from TA, his primary difficulty (not covered by the DSM-5 or MINI-KID), D. met the criteria for Social Anxiety Disorder (current), and Major Depressive Episode (in the past). Information on D.'s personal history at this moment was also collected.

Test anxiety

As TA has no diagnostic criteria, thus not being included in the existing instruments, a semi-structured interview specifically created by the authors (*Comprehensive Test Anxiety Interview*; Authors, 2022) was used to understand the level and nature of D.'s TA, at baseline. This interview is divided in six main topics: a) Descriptive information and preparation method (e.g., area of study, avoidance strategies during study); b) General description of TA (e.g., level of perceived TA and brief history); c) Anxiety and functioning before, during and after tests (e.g., thoughts, physical sensations, and safety behaviors); d) Grades perception and fear of negative evaluation; e) Impairment perception and expectations motivation to treatment; f) Previous treatment seeking.

Also, D. filled out the Reactions to Tests for Adolescents (RTT-A; Sarason, 1984) by Pires et al. (2022a), a 34-item scale with higher scores indicating higher levels of TA, in four factors: *Tension*, *Worry*, *Test-Irrelevant Thinking* and *Bodily Reactions*. Comparing D.'s scores at baseline with the mean values for Portuguese boys, it was possible to say that the cognitive dimensions were particularly prominent (1 and 2 standard deviations above the mean for *Test Irrelevant Thinking* and *Worry*, respectively), in contrast with the affective-physiological dimensions.

Other variables

Test anxiety is highly related to social anxiety (Bögels et al., 2010; Pires et al., 2019), therefore, it would be relevant to explore the impact of the latter in the program's efficacy. The Portuguese version of the Social Anxiety Scale for Adolescents (SAS-A; La Greca & Lopez, 1998) by Pechorro et al. (2016) was used, with 22 items and higher scores indicating higher levels of social anxiety. It comprises three subscales, *Fear of Negative Evaluation* (FNE), *Social Avoidance and Distress-New* (SAD-New), and *Social Avoidance and Distress-General* (SAD-Gen). D.'s scores were 1 standard deviation above the mean for Portuguese adolescent boys (Pechorro et al., 2016) in the total scale and the three dimensions.

Since the AcAdeMiC targeted feelings of shame, and an inner relationship based on self-criticism, D. filled out the External and Internal Shame Scale (EISS;

Ferreira et al., 2020; adolescent version by Cunha et al., 2021), and the Forms of Self-Criticizing and Reassuring Scale for Adolescents (FSCRS; Gilbert et al., 2004) by Silva and Salvador (2010). Higher scores indicate higher levels of the measured dimensions. The EISS has 8 items and simultaneously assesses *internal* and *external shame*, while the FSCRS has 22 items and assesses the way people self-criticize (subscale *Inadequate Self*), self-attack (subscale *Hated Self*), or self-reassure (subscale *Reassured Self*) in the face of failure or setbacks. Noteworthy were D.'s *inadequate self* scores, 1 standard deviation above average.

As the program also aims to generalize therapeutic gains to life in general, it was important to measure D.'s levels of general mental health (i.e., depression, anxiety and stress), namely, with the Portuguese version for adolescents (Pires et al., 2022b) of the Depression, Anxiety and Stress Scales (DASS-21; Lovibond & Lovibond, 1995). Higher scores on these separate three scales indicate greater symptomatology. At baseline, D. revealed depression and stress scores 2 standard deviations above the mean for Portuguese boys (Pires et al., 2022b).

Self-compassion, acceptance and mindfulness were measured, respectively, with the Self-Compassion Scale for Adolescents (SCS-A, 26 items; Neff, 2003; Cunha et al., 2016), the Test Anxiety Acceptance and Action Questionnaire for Adolescents (TA-AAQ-A, 12 items; Pires et al., 2020) and the Child and Adolescent Mindfulness Measure (CAMM, 10 items; Greco et al., 2011; Cunha et al., 2013). Higher sores indicated higher levels of each competency. While self-compassion was within the range for Portuguese boys, mindfulness and acceptance were, respectively, 1 and 2 standard deviations below.

Finally, D.'s levels of general well-being were measured with the Mental Health Continuum-Short Form (MHC-SF; Keyes, 2002; Portuguese version for adolescents by Matos et al., 2010). It comprises 14 items and the subscales *Emotional Well-Being*, *Social Well-Being*, and *Psychological Well-Being*. Although D.'s emotional well-being levels were 1 standard deviation below average (Matos et al., 2010), he was in a general moderate mental health state at baseline.

D.'s scores per measure at baseline (T0) can be found in Table 2.

Case conceptualization

Although D. also presented diagnostic criteria for Social Anxiety Disorder (APA, 2022), this case formulation will focus on his test anxiety, target of the AcAdeMiC. This conceptualization follows integrated principles of both CFT (Gilbert, 2010) and ACT (Hayes et al., 1999).

D. presents the typical manifestations of test anxiety, namely, negative thoughts regarding failure or his competency before and during tests, along with physiological activation. He seems to value learning at school, looks forward to getting into an undergraduate course of Computer Engineering, and values spending

quality time with his family and friends. However, in D.'s history and present functioning, there are some barriers that complicate a fully committed action to these values.

In addition to a predisposition of humans to be sensitive and reactive to social cues of rejection and perceived incompetence (Gilbert, 2000) and apparently having some genetic proclivity to being a shy kid (like his father), D. did not seem to have developed a sense of safeness in his relationships. At 8 years of age, he had already suffered several shame experiences, as he was constantly bullied by his peers, which might have become central to his identity (Matos et al., 2020).

In addition to his parents' divorce being a significative life event to any child, in D.'s case it occurred right in at the start of adolescence (13), when the brain is at a permeable state and the sense of identity starts to consolidate (Konrad et al., 2013), making D. more vulnerable to environmental influences. Also, his father was the person he was closer to and to whom he could relate more. Around the same age, he had to accept the presence of his mother's new partner, changed schools and classmates, and left friends behind, which were additional stressors contributing to his isolation. He did not have much of a sense of safeness or belonging at home, as he felt isolated and unappreciated by his family, and did not see his father much. Therefore, he preferred to focus on his schoolwork and performance ("my main motivation").

The combination of these evolutionary, genetic and environmental factors influenced the development of a hypersensitive and vigilant threat system. In parallel, D.'s soothing system got under stimulated. He seems to have become reliant on schoolwork to feel a sense of purpose and self-worth, as a way of feeling safe in the world, which translates the overactivation of the drive system serving the threat system.

Before or during tests, his threat system is activated, with thoughts about failure (e.g., "I did not study enough", "I will not be able to get into university"), fear of negative evaluation ("I do not want them to think I did not put an effort"), and even social comparison (e.g., "I do not want my classmates to think I know less than them"), along with feelings of anxiety and physiological activation. In these situations, he gets fused with these thoughts and judgments about himself (*conceptualized self*) or his performance (*cognitive fusion*), diverting his attention from the present moment and from important tasks and situations (*loss of contact with the present moment*).

To address these worries and in an attempt to regulate his threat system, D. avoids his feelings and thoughts (*experiential avoidance*). He does not allow himself to stop studying, engaging in excessive study. During tests, he always doublechecks his answers and writes longer than necessary answers. In contrast, he also blocks, forgets the material, stops and simply starts to cry, shifting between being fused with his thoughts of evaluation of his competency (e.g., "I am not getting this") or his emotional experiences (e.g., "I am freaking out"), and quickly finishing the test in

mindless mode. After tests, he would avoid his classmates, to avoid being confronted with "the risk of being wrong".

These behaviours suggest the dysregulation and hyperactivation of his threat system, but also of his drive system. These two systems seem to be functioning on a loop, where the latter is constantly trying to respond to the (also constant) danger detections of the former. The possibility of finding a solution that denotes *psychological flexibility* (e.g., take study pauses, doing a brief mindful compassionate practice to get grounded, and resume the test more concentrated) is hardly accessible due to the analogous under activation of the soothing system. As a sense of safeness is not reached, more self-criticism arises, aggravating the threat-drive loop. Nevertheless, although unhelpful, in the light of an evolutionary and compassionate approach, these behaviours can be conceptualized as D.'s best efforts to be seen as valuable and competent and to feel safe, considering his experiences and environmental influences.

However, these safety strategies not only end up having unintended consequences but become a problem themselves. They cause impaired concentration during studying and tests, less time to finish tests (resulting sometimes in negative grades), less opportunities to discuss the material with his classmates, and less quality time with his friends and family. This, in turn, creates a vicious cycle, reinforcing D.'s core fears of negative evaluation (e.g., being perceived as incompetent), and working against his *committed action*, as he valued to spend time with his family and friends.

Course of treatment and assessment of progress

D.'s therapist in the program was a clinical psychologist with advanced training in compassion, acceptance, and mindfulness-based approaches. D.'s treatment progressed smoothly through the four AcAdeMiC's modules and the 12 sessions (whose contents are summarized in Table 1 for a conjoined comprehension of his therapeutic process). All modules included both expositive and experiential (and interactive) techniques and exercises. The last three sessions occurred when D. was ongoing the annual school exams phase (June 2021).

Module 1 (Sessions 1-2)

This initial module was dedicated to psychoeducation regarding the mind's nature in general, and anxiety and test anxiety in particular. D. initiated the program with curiosity and interest but a little reticence, which was easily comprehensible given his social anxiety difficulties. He was attentive and responsive to the explanation of the nature of the mind, the three emotion regulation systems and the function of test anxiety in this evolutionary frame. He was "relieved" to acknowledge that feeling anxiety was not his fault, and that it was not only a by-product of his

evolutionary and genetic influences, but also of his developmental and contextual circumstances. He understood that his history led him to feel reliant on schoolwork to "feel in control" and that his mind was doing its best to keep him safe. One of the exercises in session 2 was to formulate (through a schematic drawing) his model of test anxiety across the three emotional regulation systems, in which D. used an example of a study situation: overactivation of the threat system and the drive system, while the soothing system remains under activated. He drew the circle of his threat system quite big, including examples of *thoughts* (*The test will be very difficult*), *body sensations* (*heart racing*, *feeling hot*), and *emotions* (*anxiety*). He drew his drive system similarly big, also with examples of *thoughts* (*I must study harder*), *body sensations* (*general agitation*), and *behaviours* (*studying for several hours*). He understood the exercise and it made sense to him; the visual aid to conceptualize his test anxiety and his particular the threat-drive loop was quite helpful.

The common humanity approach seemed to have resonated with him, as he told the therapist that "It is good to know that other people feel like me". At the end of session 2, he commented "I really enjoyed this explanation of our mind, it is easy to understand and makes me see that anxiety can be normal". He seemed curious about the soothing system and how he could stimulate it, as he was motivated "to learn to cope with my anxiety". He was also surprised to realise that he did not have to "turn off" his threat and drive systems completely in order to do that, as he could learn to keep on doing his tasks in a more safe and relaxed state.

Module 2 (Sessions 3-4)

This module focused on helping gain awareness of the avoidance strategies that come from the threat and drive systems, and to clarify what values are, as a motivation to start letting go of those strategies and investing on committed action (doing what is important). This allows for a more positive attitude towards learning, studying and evaluative situations, and recruits the soothing (and, sometimes, the drive) system.

In this module, D. continued responsive and motivated to the intervention. In the values clarification exercise, he was able to define his values and this practice was really important to him, as he was feeling "lost" as for why he was actually trying hard to do his best at school. He was not surprised to acknowledge he valued being "creative" (related to his interest in drawing), but he also discovered he valued being "kind" and "a friend to myself", and he even defined as a valued aim for the following week to try soothing himself during studying, with words that made sense to him (even before he learned about self-compassion): "You are feeling nervous, it is okay. You will get this".

He also became mindful of his anxiety avoidance strategies, including avoiding discussing the material after tests with classmates, rules about organising his room before and during studying, thoughts about perceived incompetence (e.g.,

"I should have paid more attention and not treated study like a 'vulgar' thing", "I will not be able to understand this in time for the test", "I just cannot do this"), and studying without pauses. He then realised the costs of these avoidance behaviours, as anxiety not only was not reduced, but he also got more tired, lost concentration, and lost quality time with his friends, which means his actions were not consonant with his values. At the end of session 4, there was a brief summary of the competencies that would be boosted throughout the remaining sessions, and D. revealed curiosity and motivation to get to know and practice them, as they would help him "follow my values".

Module 3 (Sessions 5-11)

The third module is the more interventive and therapeutic phase of the AcAdeMiC, for in these sessions are presented and practiced the main competencies that help cope with test anxiety, according to the evolutionary and contextual approach to human functioning and suffering, namely, mindfulness, self-compassion, and acceptance. Before introducing self-compassion, the role of shame and self-criticism was also covered. Through the course of these sessions, there was a psychoeducation on the concepts, and experiential practices and exercises. Among these, there were a few meditations, some of which sent in audio guided format, to help boost the three core competencies of the program outside the sessions.

The concept of mindfulness made sense to D., mainly the fact that he could choose to use it "when I need it", that is, when he needed to pay attention to the present moment or task (e.g., studying). There was an introductory meditation to focus on breathing, that he saw as a "moment when I could just stop". "The more I concentrated I was on my breathing, the more I could feel my heart beating slow. Most of the time, I felt like there was nothing around me and nothing to worry about." At the beginning, he noticed "some thoughts, for instance, while noticing my breathing, I started wondering how the respiratory system works, and that I had learned it in Biology". This was used as an additional psychoeducation moment, to reinforce the curious and wandering nature of our mind, and that we can simply notice it and gently return to the present moment (in this case, to noticing his breathing). In other practice that invited to notice the present moment with the five senses, "I was able to feel more connected to where I was and what was around me". In a meditation that asked to recall an anxiety-triggering test situation, "I felt my hands trembling and I was nervous again like in that time. After a while, as I focused on my breathing", he was able to redirect his attention to the task, "and as I was imagining me doing the test, I noticed I was less nervous".

Although being receptive to all concepts and exercises, it was when D. learned about self-criticism itself and self-compassion as an alternative way of relating to himself that his improvement started to be more apparent. When he acknowledged the presence of his inner critic in an exercise, he described it as a black silhouette, with no face, that intimidated him in a low but imposing voice ("it

starts touching me in my shoulder and tells me that I have not studied enough"). He was also able to start stimulating his soothing system and ease this inner critic through a soothing touch exercise, which he discovered to be merely resting his hands on his lap. He said he started to use this touch whenever he felt distressed or anxious, during studying or tests. He asserted how much he liked to learn about self-compassion and the related practices. In an exercise that invited to imagine the compassionate friend (the part of us, wired in our soothing system, that soothes and encourages us in difficult moments), as he loves drawing, he drew it as a character he purposely created, with a name and the message "My compassionate friend can help me when I need and to notice the present moment". His compassionate friend granted him the courage and wisdom he needed to start learning to accept his anxiety and his failure related thoughts. Particularly, in the session more dedicated to compassionate acceptance, after a meditation that invited to notice and let a difficult emotion be, he recognized that "my anxiety is still there, but now I know I can simply notice it, understand where it comes from, and leave it here with me. I do not have to banish it". The exercise that D. resonated the less with was a compassionate defusion exercise, that invited to observe, detach from and compassionately thank our mind for a thought. He felt it "did not work too well for me", as he preferred other practices.

In this module, he also learned about and practiced loving-kindness, a feeling of kindness that does not necessarily involve suffering (like self-compassion practices), and also wired in the soothing system, that he could also grow in his everyday life to enhance his well-being. He enjoyed the practice that asked to wish loving-kindness to a loved one, and found this to be a "good alternative to see life".

At the end of this module, D. was entering a phase of exam preparation and was feeling additional levels of stress. However, as the treatment progressed, D. was getting more open and participative.

Module 4 (Session 12)

The last module, which corresponded to the last session, was dedicated to loving-kindness, gratitude, self-compassion, generalization of therapeutic gains and relapse prevention. There were some last practices, the contents of the program were summarized, and techniques and exercises were remembered, with the aim of maintaining change and well-being over time.

Therapeutical change in D. was evident in this last session. Although he was going through a phase of exam preparation (with added stress), and his shy temperament was still evident, his facial expressions and non-verbal language were open and curious. He continued to practice loving-kindness, and in this last session he directed this feeling to himself, with phrases he created in another exercise, such

as "may I be able to enjoy my own company", "may I get the courage to soothe myself and be with myself", and "may I find peace and happiness".

He integrated the gratitude practices as really meaningful to him, and he seemed keen on wanting to keep using them, as "even small things might mean happy feelings". He even discovered some things he was grateful for in one of the subjects he felt most anxiety (Chemistry), such as the kindness of the teacher and the helpful way he prepared the class for the exam. In the compassionate letter exercise, which invited him to write a letter as his compassionate friend to his future self, he wrote "It is not easy to be with your anxiety and follow your values, I know. But remember, you can overcome the pain. I trust you and I am always here to help you". This was touching for him, and he said he felt "comfort and acceptance".

At the end, he said he was thankful for the intervention "and for the opportunity to learn alternatives to deal with my anxiety", and concluded with "It's good to know that when I feel sad or alone, I have someone to help me in those difficult moments", referring to his compassionate friend.

Complicating factors

D.'s intervention course followed as expected and no major complicating factors to therapy emerged. This is substantiated in D.'s clinical improvement scores reported in Section 10 (*Treatment outcomes*). Still, some minor hampering factors can be referred. First, as the AcAdeMiC was an online intervention, there was no opportunity for in-person contact. This could have been a particularly important aspect of compassionate committed action regarding (new) social contact, considering D.'s social anxiety. Although it did not affect the course of the intervention or the therapeutic relationship, it could have been an enhancer factor in D.'s improvement. Second, the last 3 sessions were conducted during D.'s period of annual exams, which he considered a stress factor. However, as the content of the sessions specifically focused on this topic, it was rather an opportunity to address it in the intervention.

Access and barriers to care

D. accessed the sessions from his home. He presented practically all the conditions needed to be involved in the intervention, such as access to internet connection, headset, webcam, and privacy. Occasionally, as he had some difficulties with the quality of the internet connection, the sessions got a little cut off, but were nevertheless resumed a few minutes later and delivered appropriately.

Treatment outcomes

Posttreatment assessment (T1) was conducted right after Session 12, and the follow-up assessment (T2) twelve weeks after that, both using the measures described in Section 5 (*Assessment*). To compute D.'s improvement from T0 to T1, and from T0 to T2, across all dimensions, the Reliable Change Index (RCI; Jacobson & Truax, 1991) was employed to each scale (and subscale when applicable). The RCI is considered a reliable indicator to test the efficacy of a particular therapy or program and can show whether an individual improves or deteriorates in comparison to pretreatment. The threshold for significant improvement at $p < .05$ corresponds to a difference score of ±1.96 (difference scores of ±0.84 or ±1.28 indicate, with a confidence interval of 80% or 90%, respectively, that real, reliable, and significant change has also been verified; Wise, 2004). To determine whether the detected change is in fact reliable, the RCI also considers normative data and the measurement error of the scale (Jacobson & Truax, 1991). Thus, the RCI is computed using the formula:

$$RCI = \frac{x2 - x1}{\sqrt{2(SD0\,\sqrt{1-\alpha})^2}}$$

where $x2$ represents the results of the individual in the posttreatment/follow-up, $x1$ represents the results of the individual in the pretreatment, $SD0$ represents the standard deviation of the variable in a normative sample, and α represents the internal consistency of the scale in that same sample. To compute the RCI, data of the normative/community samples for each variable was used.

Table 2 reports D.'s improvements, which were verified in all the assessed dimensions. Overall, the treatment seemed to be effective (pre-post; RCI 1) and gains were maintained and/or increased over time (three months following program completion; RCI 2) regardless of the scores being normative or above the population's average at T0. Particularly noteworthy is the increased clinical improvement in test anxiety across all components, especially at 3-month follow-up. It is important to remember that at posttreatment D. was still in the exams phase, which can explain the greater consolidation of this improvement at T2. D.'s social anxiety levels also significantly generally improved, except in the factor *Social Avoidance and Distress-New*. This can be explained by the fact that the program did not target social anxiety symptoms, and although other components of social anxiety got better, this is the one where D. had the most difficulty (getting to know and interacting with strangers).

The improvement also occurred in D.'s shame and self-criticism levels. The competencies targeted by the AcAdeMiC seem to have resonated with D., as his levels of self-compassion, acceptance and mindfulness grew. Interestingly, self-

criticism (*inadequate self*) and self-compassion held the most significant changes, especially at 3-month follow-up, which is aligned with what D. manifested in the sessions. It was truly helpful for him to learn to soothe his inner critic with his compassionate friend.

His general symptomatology (depression, anxiety, and stress) also got better, along with his general well-being, a possible reflection of the boosting of the core competencies of the program, as well as loving-kindness and gratitude.

At posttreatment, D. was also asked to evaluate the sessions quantitative and qualitatively. First, he was asked to rate various aspects of the Program on a 5-point Likert scale from 0 (*nothing*) to 4 (*extremely*). On questions regarding perceived efficacy, D. considered the sessions *extremely* (4) important to him, *a lot* (3) helpful in aiding to cope with test anxiety, and with difficult thoughts and feelings, and that the relationship with the therapist was *extremely* (4) important to the success of the treatment. Moreover, he stated the following regarding the sessions:

In these sessions I learned a lot about anxiety and how to control it, I also learned about compassion and how to use it with myself and with others. I thought the sessions were really informative and really helped me learn how to cope with my anxiety.

This information provided by D. further reinforces the efficacy and relevance of the AcAdeMiC in his case.

Treatment implications of the case

This case study demonstrates the efficacy of the AcAdeMiC in an adolescent of 17 years of age, in what concerns the quantitative assessment of test anxiety, shame, self-criticism, self-compassion, acceptance, mindfulness, well-being, and additional variables such as general psychopathology and social anxiety (cf. Table 2). The intervention impact observed across the program by the therapist, and the usefulness and efficacy perceived by the adolescent also add to the promising results. In detail, reliable clinical changes in all the assessed variables were verified, at posttreatment and/or 3-month follow-up, even for those that laid within normative range at baseline. Exceptions in these improvements were social anxiety in new situations and social well-being, and the first was not a target of the intervention.

The COVID-19 pandemic context compelled service requesters and providers to adopt new ways of mental health services delivery, which despite having a few limitations, also brought some benefits such as increased accessibility to services and more cost-effective interventions. This was the case for D., who otherwise would not have been able to receive the intervention if it was conducted in-person, because of geographical distance from the therapist.

Moreover, it is important to still note that despite the possibility of the therapeutic relationship in an online intervention being more intrinsically

challenging, it was successfully established and may also have been key to D.'s improvement, as in fact was appraised by him. Evidence has shown that online therapy can indeed make a good therapeutic alliance possible (Backhaus et al., 2012).

Some limitations must also be considered. Although this program is part of another larger study, with this particular case study it is difficult to clearly determine whether D.'s improvements were due to the AcAdeMiC or other external variables. Thus, future studies should use a more representative sample with an experimental and a control group. Also, all assessments occurred while D. was still in high school, making it difficult to assure if his clinical improvements will be maintained in the transition to university, a critical phase to adolescents with test anxiety difficulties (Feld & Shusterman, 2015). Future studies should follow an extended longitudinal design.

Overall, as an individual intervention, and even though the core aims and design are maintained, the AcAdeMiC can be easily adjusted for each adolescent, offering a targeted and structured treatment alternative to group programs and to less guided psychotherapeutic approaches to test anxiety.

Recommendations to clinicians and researchers

The results from this case study provide preliminary support for the conceptualization of test anxiety through the evolutionary and contextual approach to human functioning and suffering, as well as for the adequacy and efficacy of the AcAdeMiC in reducing test anxiety and improving self-compassion, acceptance, mindfulness and well-being. Nevertheless, future empirical data is needed to extend these findings, namely through a clinical trial design, since findings from case studies sometimes fail to be replicated in controlled trials (CONSORT; Moher et al., 2010). Also, and as previously stated, it would be important to track the progress of adolescents as they transition to university, to minimize the risk of relapse. A further interesting note would be the relevance of testing this intervention in university students, and elementary school students, as test anxiety is highly prevalent on students of all ages (Putwain & Daly, 2014; Segool et al., 2013; Thomas et al., 2017).

The AcAdeMiC was built to be delivered through videoconferencing, so all technical tools to ensure a proper conduction of the sessions should be ensured. To conclude, as the online setting holds limitations and does not allow for in-person contact, it might be particularly challenging to efficiently detect non-verbal and emotional cues on the patient. The therapist should therefore be especially mindful and compassionate, towards the patient but also themselves, for which training and personal practice on ACT and CFT-based approaches might be helpful assets.

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