Intervention in a Case of Test Anxiety, Maladaptive Perfectionism, and Procrastination

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Abstract

Introduction: the difficulties to regulate emotions in evaluative settings, appear as high levels of anxiety towards tests and avoidance behaviors. Perfectionism traits and procrastinative behaviors, are associated with increasing emotional discomfort across the different steps of the learning/testing cycle. **Objective:** asses the intervention´s efficacy to improve emotion regulation in evaluative settings. **Method:** a case study was performed, with the participation of a female universitary law student, who showed high levels of anxiety during oral exams. A six session cognitive behavioral treatment was applied, to diminish test anxiety, non-adaptive aspects of perfectionism and procrastinative behaviors. Quantitative and qualitative data were collected, at the intervention´s beginning and finalization, and six months later. **Results:** Comparative analysis of the pre - post scores, showed a decrease in anxiety and procrastination. Perfectionism scores did not change. The analysis of the qualitative data suggests an increase in sense of control, self confidence, satisfaction with the performance, and more fluid communication during oral exams. **Discussion:** clinical aspects, functional analysis, and associated symptoms are described, and the results implications are discussed.

Keywords: anxiety, test anxiety, procrastination, perfectionism, case study

Intervención en un caso de ansiedad ante exámenes, perfeccionismo desadaptativo y procrastinación

Resumen

Introducción: las dificultades para regular emociones en situaciones de evaluación se manifiestan como niveles elevados de ansiedad y conductas evitativas. Los rasgos de perfeccionismo y las conductas de procrastinación se asocian con el incremento del malestar emocional, en las diversas fases del ciclo aprendizaje-evaluación. **Objetivo:** evaluar la eficacia de una intervención para mejorar la regulación emocional en situaciones de evaluación. **Método:** se realizó un estudio de caso, en el que participó una estudiante universitaria de la carrera de abogacía con elevada ansiedad ante los exámenes orales. Se aplicó un tratamiento cognitivo conductual de seis sesiones, orientado a disminuir la ansiedad ante la evaluación, los aspectos desadaptativos del perfeccionismo y las conductas de procrastinación. Se reunieron datos cuantitativos y cualitativos al inicio de la intervención, a su finalización y seis meses después. **Resultados:** el análisis comparativo de los puntajes previos y posteriores mostró disminuciones en la ansiedad y la procrastinación. Los puntajes en las medidas de perfeccionismo

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no variaron. El análisis del material cualitativo indica un incremento en la sensación de control, la confianza en las propias habilidades y la satisfacción con el desempeño, mayor fluidez en la comunicación durante el examen oral. **Discusión:** se describen los aspectos clínicos, análisis funcional, sintomatología asociada y se discuten las implicancias de los resultados.

Palabras clave: ansiedad, fobia a los exámenes, procrastinación, perfeccionismo, estudio de caso

Introduction

During a university career, there are several instances in which knowledge and skills are evaluated. Performance in an evaluation and its emotional consequences depend, among other factors, on the time dedicated to study, achievement goals, learning strategies, and personality styles interacting with characteristics of the academic context. Academic results vary in relation to intellectual capacity, self esteem, motivation, study routines, the relationship between professors and students, the family, the socioeconomic and cultural context, among other variables (Chilca, 2017; Gómez et al., 2011).

The results are also related to emotional regulation during test preparation and confrontation. Anxiety, at moderate levels, contributes to preparation and performance, but when it becomes elevated, it interferes with the motivational and cognitive processes of learning (Putwain, 2008; Zeidner & Mattews, 2005).

Maladaptive perfectionism is a personality profile that increases anxiety before performance situations, where it is possible to fail and exhibit incompetence, which activates negative valence affects and turns them into an aversive stimulus (Arana & Furlan, 2016). An avoidant coping behavior for emotional distress during test preparation is procrastination, which consists of postponing temporarily anxiety generating tasks (Guzmán-Pérez, 2013).

Perfectionism, procrastination, and test anxiety interact with each other, generating a complex dynamic in which personal traits, behavioral self regulation and emotions influence each other.

In situations of achievement, when discrepancies or imbalances are perceived between the action plans and the actions implemented, anxiety is activated as a signal that anticipates difficulties derived from the non fulfillment of what was planned (Furlan et al., 2014; Pekrun & Perry, 2014). Preoccupation motivates the use of auxiliary strategies that increase the availability of cognitive resources to perform the task (Gutiérrez-Calvo, 1996; Piemontesi & Heredia, 2011).

Test anxiety (hereafter TA) is an emotional response to situations where aptitudes are evaluated and is characterized by concern about failure or poor performance and its consequences on self esteem, social handicap, and loss of some expected benefit (Gutiérrez-Calvo, 1996; Zeidner, 2007).

High TA makes it difficult to encode, organize, store, and retrieve information (Cassady, 2004; Naveh Benjamín, 1991), because preoccupation consumes attentional resources and working memory, interfering with thought processes, and generating distraction and problems retrieving information from long term memory (Furlan, 2021).

Although it is not a distinct condition in international manuals of mental disorders, TA is a frequent reason for consultation and is similar to circumscribed social phobia, with anxiety when talking to authorities being taken as a symptomatic model (Arana, 2002). It is also considered as a performance anxiety problem, where people with this condition report more debilitating cognitions, few positive self evaluations, and many negative ones at the time of performance (Zatz & Chassin, 1985). High TA symptomatology has also been placed in broader categories such as Generalized Anxiety Disorder (Grandis, 2009) or Obsessive Compulsive Disorder (Lancha & Carrasco, 2003).

A subtype of student with high TA is characterized by the presence of perfectionist beliefs that enable the emergence of social anxiety in test situations (Arana, 2002). Perfectionism (hereafter PRF) is defined, in the first place, by the search for *high standards* in the performance of activities or aspects of life considered valuable (Eum & Rice, 2011). Perfectionists have high self demands, a rigorous evaluation of their performance, and high motivation to study. In addition, they

dedicate numerous hours to learning activities, act in a methodical and organized manner, and experience satisfaction and pride in achieving academic accomplishments (Rice & Slaney, 2002).

The second component of the PRF is called *discrepancy* and refers to the critical self evaluation of performance and is the one that allows differentiating adaptive and maladaptive forms (Arana & Keegan, 2016). It is defined as the existing distance between the actual self perceived performance and the standard to be achieved. The larger it is, the greater the sense of frustration and failure it can generate, affecting self concept and motivation. TA is more related to discrepancy than to high standards, being the self evaluative processes that are particularly rigid and unsuitable to the context where the fear of failing the exam arises (Arana & Furlan, 2016).

Another problem associated with TA is procrastination (hereinafter PCT), which refers to the intention to do a task and the lack of diligence to start, develop, or finish it, whose process is usually accompanied by feelings of nervousness or restlessness or despondency (Ferrari et al., 1995; Steel, 2007). It consists of delaying an activity considered important and whose realization involves the achievement of a specific goal, with a gap between intention and action, which implies a difficulty in the self regulation of behavior (Steel, 2007). PCT is frequent in students with high TA, as procrastination creates conditions that increase preoccupation about failure. Under high pressure, intense negative affect, and limited time, it is difficult to acquire and consolidate knowledge, and if, in addition, high performance standards are sought, and there is a critical self assessment, it is unlikely that the evaluation will be successfully confronted.

Links have been reported between PCT and neuroticism (Beswick & Rothblum-Mann, 1988; Johnson & Bloom, 1995; Schouwenburg & Lay, 1995), TA and various mental symptoms (Furlan et al., 2014), and also between PCT and perfectionism in students (Flett et al., 1992; Onwuegbuzie, 2000), suggesting that procrastinators exhibit perfectionist beliefs, such as emphasizing the importance of always succeeding and self imposing unrealistic demands on themselves (Burka & Yuen, 2008; Yao, 2009).

When comparing individuals with adaptive and maladaptive perfectionism profiles, differences were found with respect to their GPA (Ashby & Bruner, 2005; Rice & Ashby, 2007) and their TA levels (Arana & Furlan, 2016).

The coexistence of TA and PCT generates accumulation of subjects taken and not taken, which delays the effective progress of the career, and produces a vicious circle (Velásquez, 2002, cited in Barreto Espinoza, 2015) that increases the risk of other psychological conditions (Furlan, 2013; Furlan et al., 2014), so it is necessary to develop evidence based interventions to reduce them.

For the treatment of TA, interventions can be grouped into two categories: those that employ specific techniques for anxiety control, alone or integrated into multicomponent programs, and those that promote the increase of study and performance skills (Furlan, 2013). The former emerged in the clinical setting to treat different mental disorders of the anxiety spectrum (specific, generalized, or social phobias and OCD), mood disorders (depression), or disorders associated with stressful events (post traumatic stress). Programs to improve self regulation of learning come from educational psychology and seek to decrease TA, increasing academic self efficacy and improving study practices. It has been suggested that cognitive and behavioral strategies, combined in multicomponent programs, with integrative approaches or technical eclecticism, are more effective in reducing TA than the isolated use of any of them (Zeidner, 1988).

In a recent study (Randle, 2019), relationships between TA and PCT and factors incorporated by the third wave of cognitive-behavioral therapies and metacognitive therapy were found (Wells, 1995). Specifically, TA presented relationships with all five factors of the Metacognitive Inventory (Cartwright Hatton & Wells, 1997), supporting the possibility of applying aspects of metacognitive therapy in the treatment of concerns regarding test situations such as fear of failure.

Some treatments for PCT focus on self regulation of learning, time management, and cognitive variables involved in motivation and achievement emotions (Pekrun & Perry, 2014). Others, from a

cognitive behavioral clinical perspective, seek to modify dysfunctional cognitions and difficulties in emotion regulation associated with PCT (Guzmán-Pérez, 2013). Recently, interventions for PCT based on Acceptance and Commitment Therapy (Hayes, 2004) using mindfulness techniques have emerged (Dionne et al., 2016; Wang et al., 2017).

Finally, for maladaptive perfectionism, there are psychoeducational programs (Keegan et al., 2016) and psychotherapeutic interventions (Arana, 2002) that aim to make beliefs and patterns of thought and behavior less functional, which are associated with increased subjective discomfort concomitant with self criticism and unfavorable evaluation of one's own performance in situations of achievement. Performance standards are not questioned, since suffering is not related to them, but more flexible, contextualized, and evidence based self evaluations are promoted.

Considering the similarities between interventions for TA, PCT, and PRF and the existence of common cognitive and emotional processes involved in their origin and maintenance, it could be expected that addressing such processes would promote favorable changes in individuals presenting with all three conditions.

By virtue of the above, the main objective of this case study is to gather evidence of the effectiveness of an intervention to improve emotional regulation in test situations.

Specifically, it seeks to establish its impact on the reduction of TA, PCT, and dysfunctional aspects of the PRF.

Method

Design

A quasi experimental (Campbell & Stanley, 2005) or case study design with quantitative analysis (Hilliard, 1993) was used.

Participant

Law student (25 years old), single, and working in customer service. At the time of her participation, five years had passed since her admission and she was in her fourth year of studies, although she had subjects pending from previous years.

She had difficulties with exams in two subjects of the same area, failing four times. She states that she is "afraid to take oral exams" and feels that she "does not express herself correctly." She has no difficulties in written exams.

At the beginning of her career, her performance was good, although she says she "had a bad time and felt embarrassed," with some physical discomfort when it was time to take her final exams: "I had a lump in my throat, but I passed all the finals." The second year began with problems in one subject, still without passing, and difficulties in public speaking, stuttering, and anxiety. This worsened during the third year, delaying her academic progress and promoting procrastination in her studies.

At the beginning of the treatment, she manifested several symptoms. At a cognitive level, some biases linked to perfectionist beliefs and circumscribed social anxiety were identified that could affect test confrontation and academic performance: "When I have to take a final, I need to have everything ready." "I should know everything." "I should express myself correctly." On an affective level, she expressed fear of taking the exam and embarrassment about asking questions and speaking in public: "I'm ashamed that I don't remember something that I should know."

At the physiological level, she experienced excessive sweating. At the behavioral level, motor symptoms were reported as a result of anxiety, such as stuttering, moving a lot, and voice trembling, thus generating difficulties in expressing herself: "I feel that I am not understood. I want to elaborate a concept but and end up saying nothing." She said that some professors gave her feedback that makes her behavior evident: "I can't understand you," "you speak very quietly." Avoidance behaviors were also observed: "I can't look at professors in the face," "there came a day when I didn't want to attend." In addition, assertiveness deficits were evidenced: "It is quite difficult for me to say no," "I usually leave things I am doing to go help other people." In organization: "Sometimes I have so much that I

do not know where to start." In time management and procrastination behaviors: "Maybe I do not dedicate the time I really should," "maybe I get up early to organize the morning and it takes me two hours to start studying," "it was not in my plans to leave so many finals to perform."

Instruments

A semi-structured interview was administered with questions referring to academic background, study modality, difficulties associated with study, resources, or usual coping strategies, among others

For test anxiety, we used the Spanish adaptation of the German Test Anxiety Inventory (GTAI-A, Heredia et al., 2008), a 28-item self-report (α=.92) with the scales: emotionality ("I feel my body tense," 8 items, α=.88), preoccupation ("I worry about whether I will be able to complete the whole exam," 9 items, α=.82), lack of confidence ("I have confidence in my own performance," 6 reverse coded items, α=.89) and interference ("I think about anything and get distracted," 5 items, α=.78).

The test Anxiety Behavior Scale (TABS, Furlan, 2013) contains 14 items that describe avoidance behaviors (7 items, α=.78; "I prepare to take the exam, but on the day of the exam I don't show up") or difficulties in performance during the exam (7 items, α=.81; "When I answer the exam questions, I express what I want to say in a disorganized way"). Response alternatives range from 1 = "not at all frequent in me" to 4 = "very frequent in me."

For academic procrastination, the Argentine adaptation of the Tuckman Procrastination Scale (ATPS; Furlan et al., 2012), a unidimensional self report of 15 items, was used ("I put off starting on things I don't like to do"; α=.87), with response alternatives from 1 (never) to 5 (always).

Almost Perfect Scale revised (APS-R Slaney et al., 2001; adapted by Arana et al., 2009)b is an instrument composed of 23 items distributed in three subscales: high standards (α=.75; "I have high expectations for myself"), order (α=.74; "I like to be always organized and disciplined"), and discrepancy (α=.91; "I am never satisfied with my achievements"). It presents a Likert type response format with 7 options, indicating the degree of agreement with the statements (1=strongly disagree, to 7=strongly agree).

Procedure

To select the participant, a virtual call was made to recruit university students with difficulties in regulating emotions in test situations and who presented PCT behaviors and PRF traits. Then, questionnaires were sent to obtain pre treatment data and informed consent. A semi structured interview was conducted to collect information on symptomatology, difficulties and academic trajectory, personal data, among others. It was also corroborated that the participant met the criteria for inclusion in the program, and the treatment modality was agreed upon (six online weekly sessions of one hour and a half).

At the end of the treatment, the questionnaires were repeated, and an interview was administered after six months.

Data Analysis

To establish changes between pre and post treatment, scores on each self-report measure were compared, and the Clinical Change Objective (OCC) index was calculated. The objective clinical change is expressed as a percentage and is considered significant when the difference between the final and initial scores divided by the initial score is greater than 20% (Cardiel, 1994). Additionally, the verbal material obtained in the follow up interview was analyzed, considering similarities and differences between pre- and post-intervention evaluative experiences.

Treatment Protocol

A six-session plan with cognitive behavioral strategies was proposed to reduce the symptomatology of circumscribed social anxiety and to modify underlying cognitive processes and avoidance behaviors. The table below shows the relationship between the objectives of each session, techniques used, and tasks between sessions (Table 1).

Table 1

Relationship of Objectives, Techniques, and Tasks between Sessions throughout Treatment

Session	Subject	Content of the sessions	Tasks
1	Collection of emotional and academic information. Psychoeducation of emotions. Establishment of objectives.	Presentation of concepts related to TA, academic performance, PCT, and achievement emotions. Psychoeducation of shame as a "normal" emotion in some social contexts. Information about your current emotional state, study planning, and upcoming exam dates. Definition of priority objectives (decrease anxiety, embarrassment, test avoidance, and behaviors associated with PCT).	Study schedule, important dates, and academic activities. Establishment of realistic objectives spread over the short and medium term.
2	IIdentification of thoughts, emotions, and behaviors. Coping and emotional regulation.	Review of the task. Identification of thoughts, emotions, and behaviors related to test situations, oral presentations, and academic exposition (reading in class, presenting a topic, giving an exam). Description of coping and emotional regulation strategies. Description of test preparation mode, mode of study, and difficulties associated with procrastination.	Table of advantages and disadvantages of PCT.
3	Relationship between thoughts, emotions, and behaviors. Identification of distortions and cognitive biases	Review of the task. Explanation of the ABC model based on Rational Emotive Behavior Therapy (Ellis, 1962), with the elaboration of example in an expository situation (reading in class). Identification of the most frequent distortions and cognitive biases in test situations with specific examples of perfectionist thematic (Keegan et al., 2016).	ABC register. Elaboration of reinforcing self phrases.
4	Cognitive restructuring strategies..	Review of the task. Application of cognitive reappraisal strategies, identification of alternative thoughts, evidence seeking, behavioral experiments, and hypothesis testing (it was asked that she activates the web cam in class, asks a question, and reads in class progressively, in the order established).	ABC register with alternative and flexible thoughts column.
5	Social skills. Relaxation and mindfulness strategy. Behavioral essay.	Work on social skills: assertiveness, refusal, rejection requests (using the example of an aunt who always asks her for favors that she no longer wants to do), and interpretation of basic rights of people in relation to the need to give opinions, make and refuse requests, be assertive, etc. Explanation of the DESC technique (Describe, Express, Specify, and Consequences) to request behavioral changes and positive reinforcement of the new behavior. Realization of brief relaxation technique focused on breathing, with the use of mindfulness components: "body scanner" and cycle of thoughts, emotions, and sensations..	Practice behavioral rehearsal where she had to expose a behavioral academic subject orally in session.
6	Behavioral essay. Relapse prevention.	Presentation of the chosen topic with feedback from the evaluator on the positive aspects of the presentation and on the aspects to be improved, focusing on the use of strategies for the regulation of anxiety, management of time, and focus on the task, as well as behavioral aspects of verbal and non verbal expression (molecular social skills). Relapse prevention instructions for test situations with emphasis on and review of the the strategies learned during the six sessions.	

Table 2
Pre- and Post-Treatment Scores for TA, PCT, and PRF

	LC	EMO	PREO	INT	TA	AVOI	DP	PCT	STA	DISC
pre	4.00	4.00	5.00	5.00	4.50	3.00	3.00	4.40	6.00	6.00
post	2.25	3.50	3.25	3.25	3.06	2.00	2.75	2.20	5.50	6.00
OCC	.44	.12	.35	.35	.32	.33	.08	.50	.08	.00

Note: LC (lack of confidence), EMO (emotionality). PREO (preoccupation) INT (interference), TA (test anxiety) score ranges 1 5. AVOI (avoidance) and DP (deficits in performance) ranges 1 4; PCT (procrastination) range 1 5; STA (standards), DISC (discrepancy, ranges) 1 7. OCC objective clinical change

Results

As can be seen in Table 2, there were moderate decreases in the TA total score (OCC = .32) and in the subscales of lack of confidence (OCC = .44), preoccupation (OCC = .35), and interference (OCC = .35). In the behavioral manifestations of TA only a decrease in the "avoidance" component (OCC = .33) is observed, and there are practically no differences in the subscale "deficit in execution." As for the PCT, a considerable decrease was observed (OCC = .50). There were no significant differences in the Perfectionism scales.

The scores of the "standards" and "discrepancy" subscales were maintained (Table 2).

After participating in the program, the student took a final oral and individual exam, passing with a grade of six points. It was a subject she had previously tried to take, but failed, because she evaluated her preparation as insufficient.

From the information obtained in the follow up interview, complementary data on the patient's condition were obtained, coinciding with the changes observed in the self report scores.

Regarding the preparation phase, she reported less distraction, greater concentration, and organizational capacity to study: "What I learned a lot from the workshop was to get organized." "Making a schedule with the days of the week and putting what I am going to do in the day with some break with study hours included that I had to fulfill." "Set better schedules, for example, from 8:00h to 9:00h have breakfast." "I would say from 10:00h to 11:30h I had to study, and I already knew I was dedicated to that and put the phone aside." "Make a plan where I can actually see what I'm doing."

In relation to embarrassment and symptoms associated with social exposure, she also referred a decrease: "Actually I started to turn on the camera in class and if I can answer, I answer." "When something makes me really embarrassed, I get red; now I couldn't experience it as much."

Regarding pre exam anxiety, she reported decreases: "I was calmer the days before the exam," and during the confrontation phase, the feeling of controllability increased, describing situations in which she was able to manage the story by taking longer pauses, identifying her negative automatic thoughts, and decreasing the physiological response of anxiety: "Through breathing, I learned to pause and to not say things so fast, getting stuck, without being aware of what I was saying; before it was difficult for the teachers to understand me." "After taking the exam, an atmosphere of conversation was created with the professors, and it was very calm; I did not feel bad. I felt nervous, but not so much as to tremble. Before, I used to sweat and tremble, and my heart was beating. Those things were always very strong, but now I was more confident, it was a different experience."

Discussion

From the results obtained in the present case study, in which the effectiveness of a program aimed at improving emotional regulation in test

situations was preliminarily evaluated, elements emerge that allow us to reflect on its scope and limitations.

In general terms, the changes in the variables studied went in the expected direction, although they varied in magnitude, with moderate, slight, and even no variations. As expected, there was a reduction in self reported PCT scores, mainly referred to its behavioral aspects. The program included specific strategies oriented to this purpose, such as the elaboration of schedules with important dates, task division, monitoring of goal fulfillment, control of distracting elements, etc. It was possible to observe a better organization and greater compliance with the plans made.

Regarding TA, the quantitative indicators and the participant's narrative showed positive changes in the cognitive dimensions of "preoccupation, interference, and lack of confidence." This reduction was accompanied by a decrease in the participant's perceived embarrassment and greater coping and exposure to test situations, with better mastery of the narrative and lower intensity of physiological anxiety responses.

It cannot be established with certainty whether the perceived anxiety is the product of a general condition of social anxiety where authority figures (professors in this case) trigger anxious symptoms, or rather whether it is a specific condition of anxiety when faced with test situations due to fear of failure, or both. The inclination for a diagnosis of AS is supported, since specific indicators of a circumscribed social phobia are observed, such as embarrassment, stuttering, and avoidance of public situations and authority figures. In addition, there is a deficit in social skills that have repercussions in the difficulty of understanding for significant people.

As previously mentioned, Arana (2002) states that it is common to relate circumscribed social phobia as a performance anxiety problem, especially applied to test situations, where people report debilitating cognitions, few positive self evaluations, and many negative self evaluations at the time of performance. It is estimated that changes in the variables "lack of confidence," "interference," and "preoccupation" can be attributed to better management of negative self evaluations through recording thoughts, reinforcing self phrases, and increased exposure to public (classroom) and test situations.

This would have a direct impact on another of the variables analyzed (behavioral avoidance). In this case, the participant reports exposure situations (use of the camera and participation in virtual classes), which would give her the possibility to tolerate the feeling of embarrassment, increase her confidence, and make use of social skills.

Perfectionism is a condition that precedes the central problem affecting the participant. It appears as an element that she recognizes as significant and that is manifested in the quantitative indicators, in which no changes are noticed between the levels before and after the intervention. Although psychoeducational strategies that contemplate information about perfectionist beliefs and biases in test situations (Keegan et al, 2016) were applied for their subsequent recognition and registration, at the time of the consultation, and to advance in time and form in her studies, the discrepancy component was not addressed directly nor with the necessary depth to achieve its modification. In addition, although it was expected that there would be indirect effects on it by applying the program with focus on TA and PCT, the evidence does not indicate that this occurred.

The results suggest that the program used allows to address in a concrete and specific way some interrelated problems, such as AE and PCT, in a way that coincides with what happened with programs previously implemented in the same field (Furlan, 2013; Furlan et al., 2019).

It is believed that the effectiveness of the program could be increased if a greater number of common problems were addressed simultaneously, as is the case with the PFC. However, it is known that there are differential strategies to specifically address the difficulties studied in this case, and that the greater the inclusion of strategies for different problems, the greater the risk of a lesser deepening of these difficulties.

This is the reason why, due to the characteristics of the program in terms of structure and number

of sessions, a transdiagnostic approach could be considered that would allow a common approach to symptoms such as anxiety, emotional dysregulation, and negative affect in test situations. Another possibility to consider is the inclusion of a multicomponent program for cases where there are diverse problems within the spectrum of TA, since experience shows that students with TA have certain underlying pathologies that can interfere in their academic processes in different ways. Such a program should probably contemplate a larger number of sessions and a more personalized design.

Finally, some limitations related to the research design used should be considered. Since this is a case study, the conclusions cannot be generalized, and it is necessary to increase the evidence on the effects of this intervention in studies with larger samples and analyses that allow us to estimate the significance of the changes and the effect sizes. On the other hand, by having only one initial and one subsequent measurement of symptomatology, only two points in time are being compared.

N=1 designs usually repeat measurements, both at baseline and in the treatment phase, to have a larger number of measurements and to be able to estimate whether there are increasing or decreasing trends that are stable over time. In this case, given that the self reports are answered based on experiences of confrontation with final exams, obtaining a greater number of measurements would have required several more months of follow up, since the turns to take the tests occur every two or three months and each person chooses when to take them.

Another limitation is related to the use of self reports and the account of experiences obtained in interviews, which imply an access to the phenomenon under study mediated by the memory and verbal reconstruction of the experience. It would be interesting to combine these sources of information with observations in natural situations to record the manifest behavior of the individuals being evaluated and detect persistent improvements or difficulties in their performance. It would also be valuable to analyze the material produced by the participant in the tasks performed between sessions, such as the recording of negative thoughts and self instructions, in order to document the evolution of cognitions during the intervention.

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