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Toolbox: Technological Anxiety Resource for University Students

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Abstract

Entering University is an important transition for students. Requires adaptation and can influence academic success. Psychological disorders might emerge when difficulties like anxiety occur due to insecurity about emotions in a student's life. We are currently living in post-pandemic conditions where pressure is increasing. The project "Toolbox: University Student – Web-interactive Platform", a platform for learning anxiety management, was developed to address this problem among university students. The main objective is to understand whether using the platform (based on cognitive behavioural theory) has effectively managed anxiety among students. It is a case study with a sample of 31 students from two Portuguese Universities, aged between 19 and 47 years. They were divided into two groups: intervention (n=17) and control (n=13). The results show that participants subjected to intervention with the interactive platform decreased their anxiety.

Keywords: Anxiety; University Students; Web-Interactive Platform

1. Purpose

Entering University is an emotional moment. Young people (re) define goals, strengthening identities (Le Gallès, 1995). Separation from high-school friends can lower self-esteem (Almeida et al., 2000; Lent et al., 2009; Paul & Brier, 2011). Anxiety may trigger phobias, obsessive-compulsive disorders, deviant behavior (Gonçalves & Cruz, 1988), cause lower attendance or dropping out (Almeida et al., 2006; Almeida, 2014; Andrews & Wilding, 2004; Hysenbegasi et al., 2005; Kessler et al., 2005;). Postpandemic situations lead to costs to mental health and socioeconomic consequences. Students face requirements for overcoming assessments, time management and relationships (Mondardo & Pedon, 2005). Anxiety is the body's response that alerts them with strategies to deal with adverse periods (Barriga, 2007). However, it is pathological when disproportionate (Castillo & Schwartz, 2013).

These studies frame the "Toolbox: Student University – Web-interactive Platform." It aims to promote personal, social, and academic skills and well-being, providing psychoeducational materials and relaxation exercises for anxiety. The intervention exercises are based on cognitive behavioural theory (CBT). The study evaluates the effectiveness of psychoeducation in managing anxiety (using a platform) and to understand if there are differences in pre and post-test between the target of psychological intervention and the control group. It Intends to answer the question/problem: Is using the interactive web platform effective in managing anxiety among university students?

2. Anxiety: Theoretical Overview

It influences individuals personally, professionally, and socially (Simões, 2014). Bauer (2002) suggests anxiety is a vague feeling expressed through fear, which may become dysfunctional (Cruz, 2008). It triggers psychological and physiological symptoms, with social and professional problems. Increased heart rate, sweating, high blood pressure, and crying may associate with the external situation (state anxiety) or an internal response (Queirós et al., 2020).

In 2008, the first study of mental disorders was done in Portugal and pointed to an incidence of 22.9% of the population (Conselho Nacional de Saúde, 2019). Psychiatric disorders were 12.0% of disability-adjusted years of life lost and 18.0% of years lived with disability in 2017. Anxiety in professionals resort to pharmacology to alleviate physical symptoms (Fávero et al., 2018), intensified in the last two years due to COVID2 19. The pandemic is a risk factor for anxiety (Albuquerque et al., 2021): isolation, social distancing, unemployment (Barros et al., 2020), the high number of deaths, and fear of contracting disease and dying (Santana et al., 2021). At Family Health Unit in Portugal, a study by Santana et al. (2021) showed anxiety in patients during a pandemic. Of the 285 participants, 47% had anxiety, higher in females. Unemployed, lay-off workers had the highest prevalence.

Cognitive-Behavioral Theory (CBT), as psychoeducation, is used with mental disorders, training social skills, and restructuring negative thoughts. Ito et al. (2008) mainly use it for anxiety with pharmacological treatment (Ito et al., 2008; Del Rey & Pacini, 2006).

The 3rd generation therapies (Mindfulness) improve socio-emotional functioning, attention, concentration, and sleep (O'Driscoll et al., 2017; Weis, Ray & Cohen, 2021; Sheikhzadeh, Zanjani & Baari, 2021). It activates brain regions responsible for positive emotions, benefits the body's immune functions (Davidson et al., 2003), and promotes body self-awareness. When aware of the "present moment," avoids focusing on the past/future, which is what happens with anxiety. Bamber and Morpeth (2019) studied 1492 students who showed better concentration levels after mindfulness/meditation.

Successful adaptation reduces dropping out and increases well-being (Almeida et al., 2014; Lent et al., 2009; Paul & Brier, 2011). Reason et al. (2006) suggest that integrated students benefit from intellectual and personal growth. According to Almeida (2014), adaptation requires coping mechanisms and resilience. Kessler et al. (1995) concluded that 86% with mental health problems dropped out. Age of 18 and 25 are the peaks for developing mental health problems: depression, psychotic disorders, and schizophrenia (Kessler et al., 2005).

Most young people with anxiety does not seek help from a professional (Reavley & Jorm, 2010). Diagnoses of suicidal ideation/severe depression are the last resort to help (Cooke et al., 2006). An Australian investigation revealed that 83.9% suffered from mental health disorders, and only 34.3% sought professional help (Stallman, 2010). Alternatively, resort to drinking alcohol and harmful substances (Reavley & Jorm, 2010).

Many universities provide psychological services; however, it is necessary to complementary online interventions. According to Gonçalves and Cruz (1988), they should provide human development for their community. Faced with mental problems, universities promote psychological services to students (Santos, 2011). Responsible for training citizens, it is essential to consider their personal development (Tavares et al., 2007; Oliveira et al., 2016), develop students' cognitive, academic, and professional skills, instilling responsibility and autonomy (Order Portuguese Psychologists, 2018).

These services are scarce in Portugal, face difficulties in financial support, and have extensive waiting lists (RESAPES, 2002). During the confinement period, greater demand was in place compared to 2019. Video appointments increased, including new strategies according to community needs. Anxiety, academic demands, and distance learning were the main problems (RESAPES, 2021). Had positive performance, demonstrating it is possible to reinvent strategies while always maintaining scientific rigor. The lack of human resources was felt more after COVID-19, making it necessary for psychological services (RESAPES, 2021).

Literature supports the prevention of mental disorders held by new technologies (Oliveira et al., 2016). Over the last three decades, online support has grown, accessing more individuals. The pandemic contributed to reinventing new working methods (Simpson et al., 2021): psychotherapy by videoconference, psychoeducational websites, online support groups, blogs, self-guided interventions, and mobile health (Barak & Grohol, 2011; Clough & Casey, 2015). Research sustains beneficial results for that (Spek et al., 2007). Online psychotherapy promotes openness and facilitates disclosure (Fletcher-Tomenious & Vossler, 2009; Roy & Gillett, 2008; Simpson et al., 2021).

Psychoeducational sites are informative but do not provide personalized information; they
help learn topics on mental health. In online support groups, people communicate without
professional intervention (Barak & Grohol, 2011). Ko and Kuo (2009) demonstrate that
the more an individual reveals himself online, the more he changes his perception of social capital, promoting well-being. A study with 238 students (Freeman et al., 2008) who viewed websites about problems and had online support improved their well-being. Self-guided online interventions are a self-help CBT interactive exercise and personalized feedback (Barak et al., 2009; Barak & Grohol, 2011).

According to Oliveira et al. (2016), with Portuguese students, new technologies improve well-being. Most considered online anxiety programs relevant. A study from 2022, with medical students at a Brazilian university, showed satisfaction with the mobile application for monitoring well-being. All recommend it (Aquino Ferreira et. al., 2022). Interventions on online platforms based on CBT show positive results with adolescents (Clarke et al., 2014).

Compared to traditional interventions, new technologies are an asset: economic, easier to access, less stigmatizing, reach isolated communities, overcoming geographic and socioeconomic barriers (Barak & Grohol, 2011; Farrer et al., 2013). Suler (2004) argues that anonymity encourages self-reflection, emotional expression, and flexibility (Hanley & Reynolds, 2009). Despite the evidence, progress could be faster. After the pandemic, countries made efforts to implement online psychotherapy. Blumenstyk (2020) considers the quick response made is not just temporary. Mental health institutions respond well through technology, and there is no reason to abandon this. It is essential when unforeseen viruses and catastrophic events driven by climate change are frequent.

3. Methodology

Evaluate the effectiveness of psychoeducation in managing anxiety among university students, using a web-interactive platform vs. without a web-interactive platform. The case study group that had access to the platform was the experimental group, and the students who did not have access to the interactive online platform

were the control group.

The Project "ToolBox: University Student – Web-Interactive Platform" is a Web-Interactive Platform with three objectives (Lucas, Oliveira & Soares, 2010; Lucas, Santos, Soares, Baras & Oliveira, 2018; Santos, 2018):
1) development of personal, social, and professional skills;
2) academic success, help in the transition to a job;
3) eliminate barriers to students' psychological help, making requests more online.

Includes psychoeducational content, interactive exercises on CBT, ideas, and support personal reflection. Students create a user account (not mandatory). All have access to toolkits (anxiety management), quizzes and self-questionnaires. After informed consent, (registered) users start exercises. They access the "Thermometer of emotions", to monitor emotional states and activate helping tips. There is a forum where registered users participate: with questions, suggestions, and psychologists' moderation. They find daily tips and access them in the personal area of each user (Lucas, Santos Soares, Baras & Oliveira, 2018).

First, a joint action occurred between all elements to survey mental health problems and needs. Focus groups showed us perceptions before and during the platform testing phase, which topic they would look for in a website that could help them. Then, an online platform was disseminated, and registrations were collected.

The methodology is a case study quasi-experimental analysis pre and postintervention.
The aim is to compare the pre and post-intervention, where anxiety management exercises were implemented via an online platform (intervention group), with a group that was not the target of intervention via an online platform (control group). A quantitative analysis was done, including research hypothesis, characterization sample, instruments, procedures, and analysis/discussion of results.

4. Research Hypothesis

Academic demands can lead to exhaustion (Cruz et al., 2020). Young people have
difficulty recognizing disorders and do not seek help (Lopez et al., 1998; Komiya et al.,
2000; Mackenzie et al., 2004 & Lucas et al., 2010). The study is on anxiety management
supported by literature and students, as one of the problems they most ask for psychological help. The hypothesis is: to investigate the effectiveness of an interactive platform in managing anxiety in both groups (experimental/control). Did anxiety levels improve after intervention with an interactive web platform?

The convenience criterion was chosen for sample gathering, as subjects are selected considering availability/willingness criteria (Freitag, 2018). There were 49 students from two Portuguese public universities, with 18 missing cases (36% still need to answer pre and post-test).

The sample was 31 participants, 61.3% (n=19) female, 35% (n=11) from University 1 (U1) and 25.8% (n=8) from University 2 (U2); 38.7% (n=12) male, with 22.6% (n=7) attending U1 and 16.2% (n=5) U2. The intervention group is 35% (n=11) female and 19.4% (n=6) male. Control group, 25.8% (n=8) corresponds to females and 19.4% (n=6) males (Table 1).

Gender		**Group**		**University**											
		Intervention		**Control**		**U2 Intervention**		**U2 Control**		**U1 Intervention**		**U1 Control**		**Total Gender**	
		N	%	N	%	N	%	Control	%	N	%	Control	%	Gender	%
	Female	11	35,5	8	25,8	5	16,1	3	9,7	6	19,4	5	16,1	19	61,3
	Male	6	19,4	6	19,4	2	6,5	3	9,7	4	12,9	3	9,7	12	38,7
		17	54,8	14	45,2	7	22,6	6	19,4	10	32,2	8	25,8	31	100

Table 1: Distribution of sample Intervention/Control group, Gender/University

The age is 19 to 47, averaging 23.7 (M=23.7; SD= 1.17). The students attend undergraduate, master's degrees in Engineering (n=16), Design (n=1), Psychology (n=2), Management (n=3), Cultural Management (n=1) Cultural Studies (n=1), Organic Agriculture (n=1), Economics (n=1), Basic Education (n=2), Educational Sciences (n=2) and Mathematics (n=1).
In pre-intervention, a questionnaire was applied to both groups: 1) sociodemographic/contextual data; 2) State-Trait Anxiety Inventory (STAI Y1/2; Spielberg, Gorsuch and Lushene 1970), validated for the Portuguese population by Silva and Campos (1998). After the intervention, the State-Trait Anxiety Inventory (STAY) was applied to both.

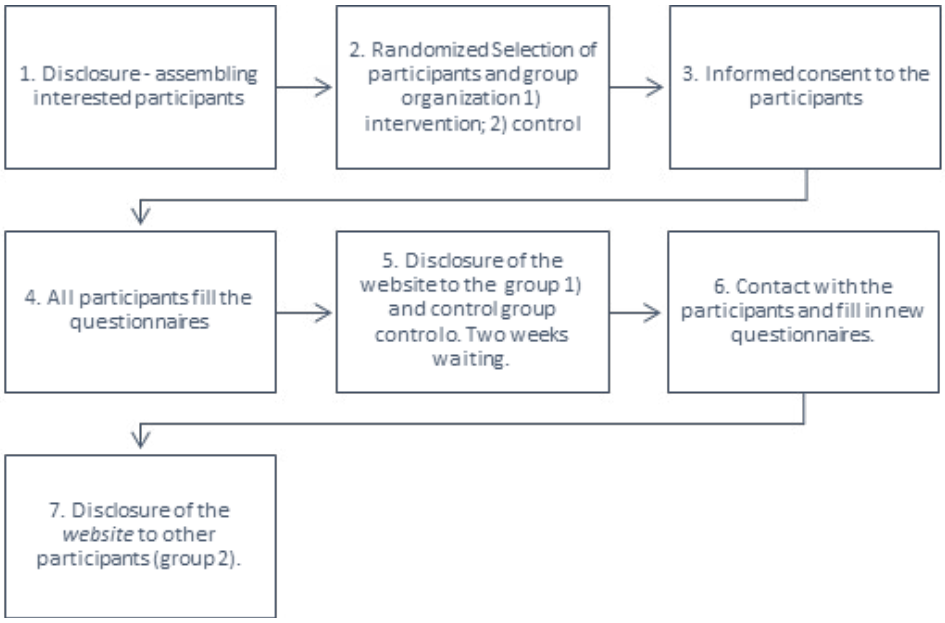
The State-Trait Anxiety Inventory (STAY) assesses anxiety. Two scales, 20 items, the State Scale (Y1) and Trait Scale (Y2), Likert type, vary between 1 (rarely) and 4 (almost always). Each Scale has a maximum score of 80 and a minimum of 20.

Adapted for Portuguese population by Silva and Campos (1998) items are: State Scale (Y1): 1) "calm"; 2) "safe"; 3) "tense"; 4) "exhausted"; 5) "at ease"; 6) "disturbed"; 7) "worried about misfortunes"; 8) "satisfied"; 9) "scared"; 10) "rested"; 11) "confident"; 12) "nervous"; 13) "restless"; 14) "indecisive"; 15) "relaxed"; 16) "happy"; 17) "worried"; 18) "confused"; 19) "stable"; 20) "good"; Trait Scale (Y2): 21) "good"; 22) "nervous"; 23) "satisfied"; 24) "happy"; 25) "like a failure"; 26) "calm"; 27) "calm,"; 28) "difficulties"; 29) "worry"; 30) "happy"; 31) "worrying thoughts"; 32) "don't have confidence"; 33) "safe"; 34) "make decisions"; 35) "I am not capable"; 36) "happy"; 37) "unimportant thoughts"; 38) "take disappointments seriously"; 39) "stable person"; 40) "tense."

Cronbach's Alpha was more outstanding than .70, with values of α= .91 and α= .93 onY1 Scale and α= .89 and α= .90 on the Y2 Scale for men and women (Silva & Campos, 1998). In another study, high school, 112 males and 110 females obtained Cronbach's Alpha of α=.89 on the State scale (Y1) and α=.88 on the Trait scale (Y2) (Silva & Campos, 1998). In 2000, Silva et al. performed a final validation for the Portuguese population, involving 1000 subjects. The results on Y1 Scale were α= .91 and .93 (female and male), and on Y2 Scale, α=.89 (female and male). Cronbach's Alpha corresponds to α= .86 in the Y1 inventory and α= .89 in the Y2 inventory, revealing good internal consistency greater than .70 (Silva & Campos, 1998).

5. Procedures

During the first phase, the platform was disseminated (figure 1), inviting into the pilot project and collecting registration. They were assigned to groups (intervention and control). All ethical procedures were considered (informed consent/ anonymity). Students received a guide, and psychologists remained available. Then, it was disclosed to the intervention group for carrying exercises for one week. Participants completed the questionnaires, and, in the end, the platform was also made available to the control group, respecting equity and methodological ethics, but these results were not analyzed.



(Lucas, et al, 2018; Santos, 2018)

Figure 1: Dissemination platform - intervention phase

The database was in SPSS, version 28. Gender, age, University, and course characterized the sample. A descriptive analysis was done: means, standard deviations, and minimum/maximum response values. The normality was analyzed to decide which tests to use. The Paired Samples t-test was used for pre and post-test, an Anova, to compare students from two universities and genders. The reliability measurement was done by Cronbach's alpha coefficients (α).

6. Findings

Tables 2 and 3 show descriptive statistics of the State-Trait Anxiety Inventory (Y1) (2) Anxiety in the intervention group. The mean results were lower in some items in the post-test phase compared to the pre-test, showing decreased anxiety. Item 3, "tense" (M pre-test = 2.71; M post-test = 2.12), item 7, "worried about misfortunes" (M pre-test = 2.18; M post-test= 1.59), reveal improvement in anxiety.

		N	Min	Max	M	SD
E Y1						
1) calm	Pré	17	1	4	3,06	.899
	Pós	17	1	4	3,29	.772
2) safe	Pré	17	1	4	2,82	.809
	Pós	17	1	4	2,71	.920
3) tense	Pré	17	1	4	2,71	1,105
	Pós	17	1	4	2,12	.993
4) sold out	Pré	17	1	4	2,41	1,004
	Pós	17	1	4	2,41	1,121
5) at ease	Pré	17	1	4	2,82	.883
	Pós	17	1	4	2,82	.951
6) disturbed	Pré	17	1	3	1,65	.702
	Pós	17	1	3	1,59	.870
7) worried	Pré	17	1	4	2,18	1,185
	Pós	17	1	4	1,59	1,004
8) satisfied	Pré	17	1	3	2,18	.728
	Pós	17	1	4	2,59	.795
9) scared	Pré	17	1	4	1,88	1,054
	Pós	17	1	4	1,59	.939
10) rested	Pré	17	1	4	2,24	.752
	Pós	17	1	4	2,35	.931
11) confident	Pré	17	1	4	2,29	.849
	Pós	17	1	4	2,47	.943
12) nervous	Pré	17	1	4	2,18	1,015
	Pós	17	1	4	2,24	1,147
13) restless	Pré	17	1	4	2,29	1,160
	Pós	17	1	4	2,00	1,118
14) indecisive	Pré	17	1	4	2,76	1,147
	Pós	17	1	4	2,29	1,105
15) relaxed	Pré	17	1	4	2,18	1,074
	Pós	17	1	4	2,41	1,004
16) happy	Pré	17	1	4	2,00	.791
	Pós	17	1	4	2,35	.786
17) worried	Pré	17	1	4	2,59	1,064
	Pós	17	1	4	2,53	1,125
18) confused	Pré	17	1	4	2,12	1,111
	Pós	17	1	4	1,94	1,088
19) stable	Pré	17	1	4	2,29	1,105
	Pós	17	1	4	2,47	1,231
20) well	Pré	17	1	4	2,41	.795
	Pós	17	1	4	2,82	1,015

Table 2 -Descriptive statistics State-Trait Anxiety Inventory (STAI) - intervention group Y1

		N	Min	Max	M	SD
T Y2						
21) fine	Pré	17	1	4	2,59	.795
	Pós	17	2	4	2,71	.686
22) nervous	Pré	17	1	4	2,59	.795
	Pós	17	2	4	2,59	.870
23) satisfied	Pré	17	1	4	2,18	.809
	Pós	17	1	3	2,12	.697
24) happy	Pré	17	1	4	2,06	1,144
	Pós	17	1	4	2,00	1,061
25) failed	Pré	17	1	4	2,18	.951
	Pós	17	1	4	2,12	1,111
26) quiet	Pré	17	1	4	2,24	.903
	Pós	17	1	3	2,41	.795
27) weighted	Pré	17	1	4	2,65	.862
	Pós	17	1	4	2,71	.985
28) difficulties	Pré	17	1	4	2,47	1,125
	Pós	17	1	4	2,29	1,105
29) worry	Pré	17	1	4	2,94	1,029
	Pós	17	1	4	2,71	1,047
30) happy	Pré	17	2	4	2,82	.728
	Pós	17	1	4	2,76	1,033
31) worried	Pré	17	1	4	2,29	.985
	Pós	17	1	4	2,12	.993
32) poor confidence	Pré	17	1	4	2,71	.920
	Pós	17	1	4	2,41	1,064
33) insecure	Pré	17	1	4	2,24	.903
	Pós	17	1	4	2,59	.795
34) decisions with ease	Pré	17	1	3	1,76	.831
	Pós	17	1	4	1,94	.827
35) not able	Pré	17	1	4	2,65	.862
	Pós	17	1	4	2,65	1,115
36) happy	Pré	17	2	4	2,65	.702
	Pós	17	1	4	2,59	.795
37) unimportant thoughts	Pré	17	1	4	2,76	1,200
	Pós	17	1	4	2,65	1,272
38) disappointment	Pré	17	1	4	2,47	1,068
	Pós	17	1	4	2,35	1,057
39) stable	Pré	17	1	4	2,59	1,004
	Pós	17	1	4	2,59	1,064
40) tense	Pré	17	1	4	2,59	1,064
	Pós	17	1	4	2,65	1,272

Table 3-Descriptive statistics State-Trait Anxiety Inventory (STAI) - intervention group Y2

Tables 4 and 5 show descriptive statistics of the Control group's State-Trait Anxiety

Inventory (Y1) (Y2). State Inventory (Y1) 5 items have lower average results in the posttest compared to the pre-test (items: 4, 7, 14, 16, 18). Items 7 (M pre-test= 2.43; M posttest=2.07) and 18 (M pre-test=2.29; M post-

test= 1.86) are significant. The control group was not subject to exercises on the interactive platform, and State Inventory data (Y1), considered the most modifiable, did not undergo significant changes. On the contrary, Trait Inventory (Y2) average response was lower in the post-test (11 items) when compared pre-test (items: 21, 22, 24, 25, 27, 28, 29, 30, 31, 34, 36).

		N	Min	Max	M	SD
(Y1)						
1 calm	Pré	14	1	4	2,64	1,082
	Pós	14	1	4	2,79	1,051
2 safe		14	1	4	2,50	1,092
		14	2	4	2,86	.663
3 tense		14	1	4	2,43	.938
		14	1	4	2,57	.938
4sold out		14	1	4	2,64	1,151
		14	1	4	2,57	.852
.5		14	1	4	2,50	.941
		14	1	4	2,64	1,008
6 disturbed worried		14	1	3	1,79	.699
		14	1	3	1,86	.864
7 worried		14	1	4	2,43	1,284
		14	1	4	2,07	.997
8 satisfied		14	1	3	2,29	.726
		14	1	4	2,50	.855
9 scared		14	1	4	2,00	1,038
		14	1	4	2,07	.917
10 rested		14	1	3	1,79	.802
		14	1	3	1,86	.770
11 confident		14	1	4	2,29	.914
		14	1	4	2,57	.938
12 nervous		14	1	4	2,36	1,151
		14	1	4	2,50	1,092
13 restless indecisive		14	1	4	2,71	1,069
		14	1	4	2,71	1,139
14 indecisive relaxed		14	1	4	2,36	1,151
		14	1	4	2,07	1,141
15 relaxed happy		14	1	3	2,07	.829
		14	1	3	2,14	.663
16 happy worried		14	2	4	2,57	.646
		14	1	4	2,50	.941
17 worried confused		14	1	4	2,86	1,099
		14	2	4	2,93	.829
18 confused stable		14	1	4	2,29	1,204
		14	1	3	1,86	.770
19 stable		14	1	4	2,50	.855
		14	1	4	2,57	.938
20 well		14	1	4	2,50	.855
		14	1	4	2,64	1,008

Table 4 : Descriptive statistics State-Trait Anxiety Inventory (STAI) - control group Y1

		N	Min	Max	M	SD
(Y2						
21 fine	Pré	14	1	4	2,79	.802
	Pós	14	1	4	2,64	.929
22 nervous		14	1	4	2,86	.864
		14	1	4	2,50	.855
23 satisfied		14	1	4	2,57	.852
		14	1	3	2,57	.646
24 happy		14	2	4	2,29	1,139
		14	1	4	2,07	1,072
25 failed		14	1	4	2,29	1,204
		14	1	4	1,93	.997
26 quiet		14	1	3	2,14	.770
		14	1	4	2,36	.745
27 weighted		14	1	4	2,50	1,019
		14	1	3	2,29	.726
28 difficulties		14	1	4	2,57	.938
		14	1	4	2,50	.760
29 worry		14	1	4	2,71	1,069
		14	1	4	2,43	.938
30 happy		14	1	4	3,00	.961
		14	1	4	2,64	.745
31 worried		14	1	4	2,29	,914
		14	1	4	2,21	1,188
32 poor confidence		14	1	4	2,43	1,089
		14	1	4	2,57	1,089
33 insecure		14	1	4	2,43	.938
		14	1	4	2,50	.855
34 decisions with ease		14	1	4	2,36	.842
		14	1	4	2,21	.893
35 not able		14	1	4	2,21	1,122
		14	1	4	2,29	1,069
36 happy		14	1	4	2,86	.864
		14	1	4	2,64	.842
37 unimportant thoughts		14	1	4	2,29	1,069
		14	1	4	2,29	1,069
38 disappointment		14	1	3	1,93	.730
		14	1	4	2,36	1,008
39 stable		14	1	4	3,14	.949
		14	3	4	2,43	.646
40 tense		14	2	4	3,21	.802
		14	1	4	2,64	1,151

Table 5: Descriptive statistics State-Trait Anxiety Inventory (STAI) - control group Y2

Statistic	gl	Sig.
,973	31	.609

Table 6: Results of Sample Normality- Shapiro-Wilk test

7. Originality

Did anxiety levels improve after intervention with an interactive web platform? Yes. The pre and post-test of the State-Trait Anxiety Inventory (the Paired Sample t-test) show that (table 6). The State Inventory (Y1) intervention group average obtained in the posttest (M=44.00; SD=14.874) is lower than the pre-test (M=48.24; SD=12.602). So, after using the platform, students showed less anxiety, as Silva (2003) mentioned. In Trait Inventory (Y2) intervention group, despite improvement in the post-test (M=49.12; SD=13.724) compared to the pre-test (M=51.88; SD= 12,154), the differences are not significant (p> .05; sig= .09). Exercise contributed to managing anxiety. Despite significant results only on the State scale (Y2; sig= .34), on the Trait scale (Y1) average result also indicates an anxiety reduction (M pre-test= 51.88; M post-test= 49,12), although not significant. The results obtained from State (Y1) Trait (Y2) Anxiety Inventory in the pre and post-test control group (table 7) were not significant in any of the scales, with sig values of .21 and .46.

These students were not the target of intervention.

				Significance	
	Mean	**Standard deviation**	**t**	**Unilateral p**	**Bilateral p**
STAI Intervention (Y1) Pré Pós	4,24 48,24 44,00	9,516 12,602 14,874	1,835	**.043**	.085
STAI Intervention (Y2) Pré Pós	2,76 51,88 49,12	8,143 12,154 13,724	1,400	.090	.181
STAI Control (Y1) “	1,79 49,86 48,07	8,144 13,002 10,064	,820	.213	.427
STAI Control (Y2) “	,14 48,36 48,21	5,332 10,470 11,878	,100	.461	.922

Table 7: Results Paired Sample t-test State (Y1) Trait (Y2) Anxiety Inventory (STAI) pre/post-intervention groups: intervention/ control

8. Discussion

After the intervention, State-Trait Anxiety Inventory showed significant improvement in the post-test of Y1 Scale - intervention group when compared pre -the test. The same did not happen with Y2 Scale, although anxiety decreased post-test. Although not expressive, Y1 Scale expresses the student's state and is modifiable with training; it shows an anxiety reduction. STAI results between genders were insignificant, although females showed higher levels in line with Silva and Campo's (1998) study with secondary students, where higher anxiety levels occur in females. Although the sample size was limited, students who underwent intervention showed improvements.

9. Social Implications

Results encourage investments in online platforms that help students manage their anxiety levels. The Internet is growing exponentially, providing more access to people. Barak and Grohol (2011) highlight the importance of online groups, social interaction and well-being. Freeman et al. (2008) found that students who viewed websites about anxiety and had online support improved their well-being. The use of a platform like the one tested here is compelling. It helps decrease mental health problems, prevent academic dropouts, and promote career skills for a successful transition to the job (Lucas, Santos, Soares, Barras & Oliveira, 2018). Provides support to students who otherwise do not seek psychological help (Soares et al., 2018).

Investment in these approaches is highly recommended, after COVID-19, considering that stress experienced by students has intensified in the last two years. Despite the small sample size and the recognition that further studies with larger groups using stratified sampling to assign groups are needed, we point out that it is crucial to meet students' needs after adopting different pedagogical methods to understand their integration into their

academic path and well-being.

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