



UNIVERSIDADE D
COIMBRA

Catarina Santos Carvalho

**THE TRAUMATIC IMPACT OF THE COVID-19 PANDEMIC
ON THE PSYCHOLOGICAL DISTRESS OF UNIVERSITY
STUDENTS AND PROFESSORS:
THE MEDIATING ROLE OF SELF-CRITICISM AND EXPERIENTIAL
AVOIDANCE**

Dissertação no âmbito do Mestrado Integrado em Psicologia, área de especialização em Psicologia Clínica e da Saúde, subárea de especialização em Intervenções Cognitivo-Comportamentais nas Perturbações Psicológicas e Saúde, sob a orientação da Professora Doutora Maria do Céu Salvador, Doutora Marcela Salomé Albuquerque Andrade de Matos e Professor Doutor Daniel Maria Bugalho Rijo e apresentada à Faculdade de Psicologia e Ciências da Educação.

Julho de 2021

Faculdade de Psicologia e de Ciências da Educação
da Universidade de Coimbra

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“Don’t ask for guarantees. And don’t look to be saved in any one thing, person, machine of library. Do your own bit of saving, and if you drown, at least die knowing you were headed for shore.”

Ray Bradbury

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**The Traumatic Impact of the COVID-19 Pandemic on the Psychological Distress of
University Students and Professors: The Mediating Role of Self-Criticism and
Experiential Avoidance**

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Abstract

Several studies have demonstrated the positive association between the impact of the COVID-19 pandemic and psychopathology. Thus, it is crucial to explore factors that could mediate this effect. Self-criticism and experiential avoidance have been linked with a lower adaptability to the pandemic and higher psychopathology levels, namely burnout in student and teacher populations and test anxiety in students. However, to our knowledge, no prior studies have addressed all these variables together. Thus, the present study aimed to examine the mediating role of self-criticism and experiential avoidance on the relationship between the traumatic impact of the COVID-19 pandemic and burnout and test anxiety levels in university students, and burnout levels in university professors. This cross-sectional study included two samples: university students ($N = 484$) and professors ($N = 70$). Participants were recruited from various universities across Portugal and completed self-report measures regarding the traumatic impact of the COVID-19 pandemic, self-criticism, experiential avoidance, and burnout, and in the university students' sample alone, test anxiety was also assessed. Results showed that the traumatic impact of the COVID-19 pandemic was directly and indirectly, through self-criticism and experiential avoidance, associated with burnout and test anxiety levels in university students and with burnout levels in university professors. In conclusion, a higher traumatic impact of the COVID-19 pandemic, self-criticism and experiential avoidance seem to be associated with higher levels of burnout and test anxiety in university students and higher burnout levels in university professors. These results suggest the need for further studies to better understand the damaging impact of the COVID-19 pandemic on university students and professors' mental health and the relevance of developing psychological interventions based upon compassion focused interventions and the Acceptance and Commitment Therapy to minimise the consequences of the COVID-19 pandemic on university students' and professors' mental health and well-being.

Keywords: traumatic impact of the COVID-19 pandemic; self-criticism; experiential avoidance; burnout; test anxiety.

Resumo

Até à data, vários estudos demonstraram uma associação positiva entre o impacto traumático da pandemia COVID-19 e a psicopatologia. Deste modo, torna-se crucial compreender que fatores podem estar a mediar este efeito. O auto-criticismo e o evitamento experiencial estão associados a uma menor adaptabilidade à pandemia e a níveis mais elevados de psicopatologia, nomeadamente os níveis de burnout em populações de estudantes e professores e de ansiedade aos testes nos alunos. No entanto, do nosso conhecimento, estas variáveis não foram ainda investigadas em conjunto em estudos anteriores. Assim sendo, o presente estudo teve como objetivo examinar o efeito mediador do auto-criticismo e do evitamento experiencial na relação entre o impacto traumático da pandemia COVID-19 e os níveis de burnout e ansiedade aos testes em estudantes universitários, e os níveis de burnout nos professores universitários. Deste modo, este estudo incluiu duas amostras, estudantes universitários ($N = 484$) e professores universitários ($N = 70$). Os participantes foram recrutados em várias universidades portuguesas e preencheram medidas de auto-resposta relacionadas com o impacto traumático da pandemia COVID-19, auto-criticismo, evitamento experiencial e burnout e, na amostra de alunos universitários, a ansiedade aos testes foi também avaliada. Os resultados mostraram que o impacto traumático da pandemia COVID-19 estava direta e indiretamente, através do auto-criticismo e evitamento experiencial, associado de forma positiva aos níveis de burnout e ansiedade aos testes nos alunos universitários e aos níveis de burnout nos professores universitários. Em suma, um maior impacto traumático da pandemia COVID-19, auto-criticismo e evitamento experiencial parecem estar associados a níveis mais elevados de burnout e ansiedade aos testes em alunos universitários, e a níveis mais elevados de burnout em professores universitários. Estes resultados sugerem a necessidade de estudos futuros que permitam compreender o impacto nocivo da pandemia COVID-19 na saúde mental dos estudantes e professores universitários, e a relevância de desenvolver intervenções psicológicas baseadas em intervenções focadas na compaixão e na Terapia da Aceitação e Compromisso (ACT) com o objetivo de minimizar as consequências da pandemia na saúde mental e bem-estar dos estudantes e professores universitários.

Palavras-chave: impacto traumático da pandemia COVID-19; auto-criticismo; evitamento experiencial; burnout; ansiedade aos testes.

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Introduction

The COVID-19 pandemic was first reported in China in December 2019, and the number of cases and deaths associated with the SARS-CoV-2 virus has rapidly increased since. Thus, world leaders have been forced to apply restrictions to protect the population and contain the spread of the virus, affecting non-essential businesses, education, and the population's lifestyle (Shevlin et al., 2020). Many researchers have dedicated their efforts to understanding the pandemic's impact on people's physical and mental well-being, reporting an increase in the prevalence of mental health problems (Shevlin et al., 2020). Many authors report higher levels of anxiety, burnout, depression, and trauma, along with an increase in stress, psychological distress, and sleep difficulties (Chakraborty & Chatterjee, 2020; Choi et al., 2020; Dimitriu et al., 2020; Mazza et al., 2020; Shevlin et al., 2020; Xiong et al., 2020). Furthermore, increases in the levels of burnout for teachers (Zadok-Gurman et al., 2021) and university students (Chen et al., 2020) have been reported, as well as higher levels of test anxiety in a specific sample of student-athletes (Li et al., 2021). The poor mental health outcomes seem to be related to health threats (to oneself and loved ones), disruption of day-to-day routines, isolation from family and friends, boredom, and frustration (Choi et al., 2020). However, some individuals have proven to be more vulnerable to the impact of the pandemic on mental health, such as those whose income has been affected, who have children or pre-existing health conditions (Shevlin et al., 2020), who are more concerned about getting infected or having enough surgical masks or worrying about their ability to work from home (Choi et al., 2020).

Additionally, Johnson and collaborators (2005) found that teachers seem to experience more occupational stress and show poorer signs of mental and physical well-being when compared to other professions. Furthermore, Browning and colleagues (2021) described students as vulnerable regarding mental health matters. Furthermore, a study that focused on university students reported that all respondents claimed to have been negatively affected by the pandemic and that 59% experienced high psychological impact levels (Browning et al., 2021). In addition, the authors identified being a woman, younger, knowing someone infected, spending more time on screen and having fair/poor general health as risk factors for higher levels of psychological impact (Browning et al., 2021). Given the pandemic's impact on the students' community, it is vital to understand the risk factors for higher levels of psychological impact in order to safeguard students' mental health.

Moreover, a study that focused on schoolteachers found that the most common stressors they identified during the pandemic were the uncertainty linked to school closures, as well as the immediate demands they implicate, and the concerns about vulnerable students (Kim &

Asbury, 2020). This study found a significant shift from the previously accounted stressors found in literature: workload and behaviour management (Abós et al., 2019; Boyle et al., 1995; Kokkinos, 2007), which were barely mentioned. Furthermore, previous research has found that prolonged experiences of stress can lead to burnout in teachers, lower confidence in their ability to complete job tasks and even lead to the intention of quitting their job (Buric & Kim, 2020). Therefore, since the circumstances demand remarkable resilience and flexibility from teachers and university professors, it is crucial to comprehend the pandemic's impact on teachers' psychological well-being and understand risk factors for higher levels of psychological impact in order to safeguard mental health in a population of such importance.

In addition, the immediate impact of the pandemic should not be the sole focus of research, as the long-term consequences of the pandemic's impact on mental health, such as the increased incidence of trauma and stress-related disorders, could be critical (Imperator et al., 2020). Some researchers have even argued that the impact of the COVID-19 pandemic could redefine the concept of a traumatic stressor (Imperator et al., 2020; Shelvin et al., 2020). Thus, it seems crucial to understand the psychological processes that could further the negative impact of the pandemic on university students' and professors' mental health, serving as risk factors. Since research has shown that self-criticism and experiential avoidance are associated with poorer outcomes following traumatic experiences (Cox et al., 2004; Irons & Lad, 2017; Tull et al., 2004), and seem to be linked to lower levels of psychological well-being (Hayes et al., 2004; Gilbert et al., 2006), we considered them as potential risk factors in the present study.

Burnout and Test Anxiety

One of the most common anxiety types among students is test anxiety (Sarason & Sarason, 1990), with an estimate of 10% of the students reaching test-anxiety levels worthy of treatment (Schaefer et al., 2007). Test anxiety seems to be present in significantly higher levels in females (Hembree 1988) and undergraduate students, in comparison with graduate students (Duraku, 2017). Test anxiety is commonly considered a bi-dimensional construct, including a cognitive dimension that involves self-criticism, negative thoughts, worry and concerns about the negative consequences of failure in evaluation situations, and an emotional component which includes the muscle tension, nervousness, accelerated heart rate and sweaty palms students feel during their exams (Zeidner, 1998; Asghari et al., 2013). Moreover, higher test anxiety levels have been linked to lower success (Hembree 1988), impaired performance, delay and drop-out in university studies (Schaefer et al., 2007). Finally, the pressure to achieve admirable results in exams is linked to increased stress levels for students (Erlauer, 2003).

Burnout has been described as emotional, cognitive, and physical exhaustion caused by the long-term involvement in emotionally demanding situations (Maslach et al., 2008). Furthermore, burnout has been defined in three dimensions: exhaustion, cynicism and reduced efficacy (Schaufeli et al., 2002). Thus, as a work-related phenomenon, burnout may be experienced by students, since an array of student activities such as preparing homework and studying for long hours, can be seen as work (Law, 2007). Research suggests that lower levels of self-efficacy (Rahmati, 2015), school engagement (Arlinkasari et al., 2017), and social support (Jacobs & Dodd, 2003), as well as higher levels of loneliness (Stoliker & Lafreniere, 2015), are associated with higher levels of burnout in students. Moreover, burnout influences students' learning and overall health and well-being (Schaufeli et al., 2002), and higher burnout levels in students have been associated with lower levels of life satisfaction (Capri et al., 2012), motivation, academic commitment and achievement, and higher absenteeism and percentage of drop-out (Salanova et al., 2010; Yang, 2004). In teachers, higher levels of burnout have been associated with lower feelings of competence and self-worth (Syed & Nazir, 2008), lower levels of hardiness (Chan, 2003), lower social support and optimism (Otero-López et al., 2008), higher levels of occupational stress (Reddy & Poornima, 2012) and higher effort-reward imbalance (Wang et al., 2015), as well as poor recovery experiences (Demerouti et al., 2009). Furthermore, higher levels of burnout in teachers seem to impact job performance (Swider & Zimmerman, 2010) and to be associated with lower levels of intrinsic motivation and enthusiasm, as well as higher levels of discouragement and indifference (Schaufeli & Enzmann, 1998). Further, higher burnout levels are linked with more negative reactions to pupils (Stokli, 1999), the incidence of sick leave, absenteeism, and mental health problems (Leiter & Maslach, 1998, 2000).

Thus, given that higher burnout and test anxiety levels seem to affect students' success and well-being, leading to higher drop-out rates, and burnout levels seem to affect teachers' performance and well-being, leading to a higher incidence of absenteeism and sick leave, we decided to include burnout and test anxiety levels in the present research.

Self-criticism and Psychopathology

Self-criticism has been defined as anger and attack towards the self, mainly in failure situations (Gilbert, 1992), and described as a shame-based process that happens when the self is perceived as undesirable and inadequate (Gilbert and Irons, 2004). Thus, when self-critical people fail to achieve their goals, they tend to have feelings of insufficiency, guilt, insecurity, hopelessness, and helplessness (Gilbert et al., 2004). A large body of research indicates an association between self-criticism and various forms of psychopathology, namely burnout

(Atuk, 2020; Melo & Oliver, 2012), test anxiety (Bieling et al., 2004; Cunha & Paiva, 2012; Eum & Rice, 2011), depression (Blatt, 2008; Gilbert et al., 2006; Shahar, 2015) but also higher levels of anxiety (Castilho et al., 2014, 2017), social anxiety (Iancu et al., 2014; Shahar et al., 2015; Werner et al., 2019), and stress (Castilho et al., 2017).

To the best of our knowledge, no studies have focused on examining the traumatic impact of the COVID-19 pandemic on self-criticism levels. However, one study (Besser et al., 2020) found that self-criticism, while associated with higher levels of loneliness and adverse emotional reactions, was linked to lower adaptability to the pandemic. Furthermore, Matos and colleagues (2021) found that fears of compassion had an amplifying effect on the negative impact of the COVID-19 pandemic on mental health, while fears of compassion have been linked to higher levels of self-criticism (Kirby et al., 2019). Additionally, self-criticism has been described as a common experience among traumatised individuals (Irons & Lad, 2017) and has been identified as a predictor of poorer outcomes following a traumatic experience (Cox et al., 2004; Irons & Lad, 2017). Thus, given the impact of self-criticism on psychopathology, we find it crucial to assess whether it could transport the effect of the traumatic impact of the COVID-19 pandemic on the university students' and professors' mental health.

Experiential Avoidance and Psychopathology

As opposed to acceptance, experiential avoidance occurs when individuals are unwilling to contact their private experiences, taking steps to modify their form, frequency or the contexts that prompt them, even if such avoidance ultimately leads to negative consequences (Hayes et al., 1996). These individuals may react to unwanted internal experiences with unproductive attempts towards emotional regulation, such as emotional or thought suppression, inactivity, or reason-giving (Hayes et al., 2004). Hence, there is some indication that experiential avoidance may be linked to self-criticism. In fact, Burns (1980) found that perfectionist individuals may develop reactions of self-criticism when realising that perfection is unattainable and may wish to avoid contact with opportunities for failure and self-critical thoughts. Santanello and Gardner (2006) defended that such behaviours may reflect experiential avoidance.

Although experiential avoidance may seem to lead to immediate positive effects, private events are usually either unresponsive or paradoxically increased by deliberate control efforts, leading to a self-amplifying loop that could become somewhat resistant to change (Hayes et al., 1996). Thus, research suggests that higher levels of experiential avoidance are likely to be directly associated with lower subjective well-being (Machell et al., 2015) and psychological flexibility (Bond et al., 2006), reducing the individual's capacity to deal with various situations

and negatively impacting the quality of life (Hayes et al., 2004; Kashdan et al., 2006). Moreover, research indicates that experiential avoidance is linked to higher psychopathology levels (Chawla & Ostafin, 2007; Hayes et al., 2004), more specifically, with higher levels of burnout (Hinds et al., 2015; Iglesias et al., 2009), test anxiety (Furr et al., 2006; Kellardeh et al., 2019), trauma (Orcutt et al., 2005), depression (Hayes et al., 2004; Hinds et al., 2015), anxiety (Hayes et al., 2004; Kashdan et al., 2006), and social anxiety (Heimberg et al., 2010).

Additionally, following a traumatic event, experiential avoidance may generalise to non-related stimuli, predicting poorer long term mental health outcomes (Polusny & Follette, 1995; Rosenthal et al., 2005). Also, fear of COVID-19 was found to be positively linked to experiential avoidance levels, which weakened psychological adjustment skills (Seçer et al., 2020), which in turn may deprive individuals of effective coping skills and lead to various psychopathologies (Kashdan & Rottenberg, 2010). These results might lead us to expect experiential avoidance to predict poorer outcomes regarding burnout and test anxiety levels. Thus, we found it essential to comprehend the magnitude of experiential avoidance in furthering the impact of the COVID-19 pandemic on university students' and professors' mental health.

The Present Study

A growing body of research indicates that the COVID-19 pandemic has had a negative impact on the general population's mental health, namely on burnout levels. Studies that have focused on student and teacher samples indicate similar results regarding the impact of the COVID-19 pandemic on burnout levels and demonstrate a negative impact on students' test anxiety levels. Furthermore, some authors have reported an increase in trauma and stress-related disorders, which has started a discussion on the impact of COVID-19 as a traumatic stressor. Traumatic events have been associated with self-criticism and experiential avoidance, which have been identified as predictors of poorer mental health outcomes. Moreover, experiential avoidance has been linked to self-criticism in such a way that perfectionist individuals may develop reactions of self-criticism and may wish to avoid contact with experiences that could entice self-critical thoughts. In addition, both self-criticism and experiential avoidance seem to be associated with higher levels of psychopathology, namely higher burnout and test anxiety levels. Thus, focusing on two populations considered vulnerable from a mental health perspective, we sought to explore the mediator effects of self-criticism and experiential avoidance on the relationship between the traumatic impact of the COVID-19 pandemic and university students' burnout and test anxiety levels, and professors' burnout levels. We started by assessing the participants' context regarding the pandemic to understand possible risk or

protective factors against the traumatic impact of the COVID-19 pandemic, and comprehend which factors, regarding the experience of online exams, could be contributing to either increased or decreased test anxiety levels in university students.

Study 1. Traumatic Impact of the COVID-19 Pandemic on University Students' Burnout and Test Anxiety Levels: The Mediating Role of Self-criticism and Experiential Avoidance

Specifically in the student sample, we aimed to study whether the traumatic impact of the COVID-19 pandemic was associated with university students' burnout and test anxiety levels, and comprehend the role of self-criticism and experiential avoidance in this relationship. Thus, firstly, we hypothesised that the traumatic impact of the COVID-19 pandemic, self-criticism, experiential avoidance, burnout, and test anxiety levels would be positively and significantly correlated (H1). Secondly, we hypothesised that an increased traumatic impact of the COVID-19 pandemic would be associated with higher burnout and test anxiety levels (H2) and that this relationship would be mediated by self-criticism and experiential avoidance (H3).

Study 2. Impact of the COVID-19 Pandemic on University Professors' Burnout Levels: The Mediating Role of Self-criticism and Experiential Avoidance

Regarding the professor sample, we aimed to examine whether the traumatic impact of the COVID-19 pandemic would be associated with university professors' levels of burnout and, again, the role of self-criticism and experiential avoidance in this relationship. Hence, we hypothesised that the traumatic impact of the COVID-19 pandemic, self-criticism, experiential avoidance, and burnout levels would be positively and significantly correlated (H4). Secondly, we hypothesised that an increased traumatic impact of the COVID-19 pandemic would be associated with higher burnout levels (H5) and that self-criticism and experiential avoidance would mediate this relationship (H6).

Method

Study 1 – Students' Sample

The participants were 484 university students (74.2% female, 25% male, 0.8% preferred not to respond), whose ages ranged from 18 to 56 ($M = 22.96$; $SD = 5.64$). Regarding the students' residence area, 13.6% reported they were living in the North region of the country, 55.6% in the central region, 11% in the Lisbon and Tagus Valley region, 5.4% in the Alentejo region, 3.1% in Algarve, 6.8% in the Madeira islands, and 4.5% preferred not to respond. Regarding the participants' education, 46.1% of the students reported having completed high

school, 2.3% declared they had instead completed a professional course, 40.9% of the students reported they had a bachelor's degree, 7.4% declared having a master's degree, 0.4% reported they had a PhD, and 2.9% preferred not to respond. Furthermore, years of education ranged from 12 to 27 ($M = 15.04$; $SD = 2.14$). Moreover, 67.6% of the students reported they studied at a public university, 12% at a private university, 14.7% at a polytechnic institute, and 5.8% preferred not to respond. Regarding the students' field of studies, 2.5% study Exact Sciences, 7.2% study in the fields of Engineering and Technology, 1.7% study Natural Sciences, 19.8% study in the fields of medicine and health, 43.2% study social sciences, 5.6% study Humanities, 5.2% study Agrarian Resources, 5.4% study Tourism and 9.5% preferred not to respond. Finally, only 12.8% of the participants reported having received psychological help, while 0.6% preferred not to respond. When questioned about the motive of the psychological aid, these students reported support regarding anxiety disorders (55.2%), depression (8.6%), and other psychopathologies (34.5%), while 1.7% of the participants that received psychological help preferred not to respond. We found no statistically significant gender differences.

Study 2 – Professors' Sample

The sample consisted of 70 professors (55.7% female, 44.3% male), whose ages ranged from 23 to 66 ($M = 50.29$; $SD = 9.91$). Regarding the professors' residence area, 5.7% reported they were living in the North region of the country, 48.6% in the central region, 21.4% in the Lisbon and Tagus Valley region, 5.7% in the Alentejo region, 8.6% in Algarve, 8.6% in the Madeira islands, and 1.4% preferred not to respond. Years of profession ranged from 1 to 46 ($M = 23.53$; $SD = 11.21$) and, regarding their education, 10% of the professors reported having a bachelor's degree, 18.6% declared having a master's degree, and 71.4% reported they had a PhD. Furthermore, 47.1% of the professors reported they taught at a public university, 18.6% at a private university, 27.1% at a polytechnic institute, and 7.1% preferred not to respond. Regarding the professors' field of teaching, 4.3% reported teaching Exact Sciences, 2.9% taught in the fields of Engineering and Technology, 7.1% taught Natural Sciences, 25.7% taught in the fields of medicine and health, 11.4% taught Social Sciences, 10% taught Humanities, 1.4% taught in the field of Agrarian Resources, 8.6% taught in the field of Tourism, and 28.6% preferred not to respond. Finally, only 5.7% of the participants claimed to receive psychological support. When questioned about the motive of the psychological aid, participants reported support regarding depression (75%) and anxiety disorders (25%). We found statistically significant gender differences in age ($F = 5.96$; $p = .017$) with a moderate effect size ($\eta^2 = .08$). No other gender differences were found.

Procedure

Following the approval of the Ethics Committee of the Faculty of Psychology and Educational Sciences of the University of Coimbra (CEDI, February 17th, 2021), the present study was advertised online, and participants were recruited through means of social networks and professional mailing lists, between March and May of 2021. Inclusion criteria selected participants who were 18 or older, spoke Portuguese, and studied or taught at a Portuguese University. Additionally, due to incomplete data from the protocols, only 398 students were considered for the model analysis including the Reaction to Tests questionnaire.

Furthermore, the participation occurred entirely online, using the LimeSurvey platform, in only one assessment moment for each sample. Prior to the application of the research protocol, participants were informed about the study's aim and confidentiality policies. They were reminded that their participation was anonymous and entirely voluntary and that they could abandon the task at any point if they wished to do so. They were then asked to provide their informed consent if they wished to proceed. Finally, after the initial information they received, both students and professors were asked to fill out a self-report protocol whose components can be found in the *measures and materials* section.

Measures and Materials

Participants were required to complete a set of self-report measures and, although the students' protocol differed from the professors', many of the questionnaires overlapped. Thus, common measures are described first, followed by those specific to each sample's protocol. Cronbach's alpha values found in the current study are presented in Table 7.

Sociodemographic and COVID-19 related questions. We asked participants to register their age; gender; district; university, educational qualification, and field of study in which they study or teach; years of education or teaching; and whether they were receiving any psychological help. Regarding the COVID-19 pandemic, participants were asked whether they or someone close to them had been identified as part of the high-risk population or infected with the Coronavirus, using a 4-item list: "yes", "no", "I do not know", and "I prefer not to respond". We also asked participants what type of social distancing they were practising, and how long they were practising it for, using a 4-item list: "self-isolation in a specific area of the house", "social isolation with limited outings to purchase food or medicine", "social distancing – keeping a safe distance from people outside the house", and "I do not usually practice social distancing". Additionally, participants were asked how much social support they perceived during this time and from whom, using a 10-point Likert scale (from 0 = not at all, to 10 = very

much). The perceived impact of the pandemic on participants' general life was assessed using a 10-point Likert scale, ranging from 0 to 10, which evaluated the perceived impact on life in general, academic/professional, social and family life, psychological well-being, and physical health. The scores for each factor were considered categorically for the level of perceived impact, where 0 = extremely negative, 1 or 2 = very negative, 3 or 4 = negative, 5 = neutral, 6 or 7 = positive, 8 or 9 = very positive, and 10 = extremely positive. Furthermore, the total mean score of these factors was computed to evaluate the overall perceived impact on participants' general life. Finally, using the same scale and scoring categories, the perceived impact of the pandemic on the academic aspects of students' and professional aspects of professors' lives was evaluated by assessing the perceived impact on their relationship with other students and professors, workload, the quality of work they produced, quality of learning and life balance. Once more, the total mean score on these factors was computed to evaluate the perceived impact on participants' academic (students) or professional (professors) lives.

Impact of Event Scale-Revised (IES-R; Weiss & Marmar, 1997; Portuguese version: Matos & Pinto-Gouveia, 2006; COVID-19 adaptation: Matos, 2020). The IES-R is a 22-item self-report measure designed to assess subjective suffering derived from a specific experience, which in our study consists of the traumatic impact of the COVID-19 pandemic. Each item is rated on a five-point Likert scale (ranging from 0 = not at all to 5 = extremely). The original study proposed three factors: avoidance ($.84 < \alpha < .85$), intrusion ($.87 < \alpha < .92$), and hyperarousal ($.79 < \alpha < .90$), with robust construct and convergent validities. The Portuguese version presented a single factor ($\alpha = .96$) with a test-retest reliability of $r = .82$ after four weeks.

Shirom-Melamed Burnout Measure (SMBM; Shirom & Melamed, 2006; Portuguese Translation and adaptation: Gomes, 2012). The SMBM is a 14-item, single-factor scale designed to assess burnout levels, comprising three factors: emotional exhaustion, physical fatigue, and cognitive weariness. Each item is rated on a seven-point Likert scale (ranging from 1 = almost never to 7 = almost always), with higher scores indicating higher levels of burnout. The authors found an excellent internal consistency ($\alpha = .91$) and strong construct validity.

Forms of self-criticizing/attacking and self-reassuring scale (FSCRS; Gilbert et al., 2004; Portuguese Version: Castilho & Pinto-Gouveia, 2011). The FSCRS is a 22-item, three-factor scale designed to assess how supportive or critical participants are when things go wrong for them. Both the original and the Portuguese studies found a robust congruent validity and internal consistency for each factor: the inadequate, reassured, and hated self ($.72 < \alpha < .90$), and the Portuguese study also found a test-retest reliability between ($.65 < r < .78$)

after a four-week period. Furthermore, each item is rated on a five-point Likert scale (ranging from 0 = not at all like me to 4 = extremely like me), with higher scores in each factor implicating stronger feelings of either inadequacy, reassuring attitudes or self-repugnance. However, only the total of self-criticism was considered in this study, which is composed by the sum of the inadequate and hated self factors.

In addition to the common measures for both samples, the students' protocol comprised the AAQ-II and the RTT questionnaires, described below.

Acceptance and Action Questionnaire–II (AAQ-II; Bond et al., 2011; Portuguese Version: Pinto-Gouveia et al., 2012). The AAQ-II is a seven-item, single-factor scale that assesses experiential avoidance. Each item is rated on a Likert scale (ranging from 1 = never true to 7 = always true), with higher scores indicating greater levels of psychological inflexibility. Both the original ($.78 < \alpha < .88$) and the Portuguese ($\alpha = .90$) studies presented robust internal consistencies, and discriminant and convergent validities, and the original study showed a strong test-retest reliability of $r = .81$ and $r = .79$ after 3 and 12 months, respectively.

Reactions to Tests (RTT; (Sarason, 1984; Portuguese Version: Baptista et al., 1988). The RTT is a 40-item, four-factor scale designed to assess participants' reactions to tests by evaluating tension, worry, test-irrelevant thinking, and bodily symptoms. Each item is rated on a four-point Likert scale (ranging from 1 = not at all typical of me to 4 = very typical of me). Additionally, the original study found a robust internal consistency for the full scale ($\alpha = .78$) and for each factor ($.68 < \alpha < .81$). On the other hand, the Portuguese study generated a 34-item scale that showed an acceptable internal consistency and a test-retest reliability of $.72 < r < .91$ after four weeks. Furthermore, we added some further questions to assess the perceived impact on student's test anxiety levels and asked participants to identify which factors most increased or decreased their test anxiety levels on a scale from 1 to 10.

Once again, in addition to the common measures for both samples, the professors' protocol also comprised the TAAQ questionnaire, as described below.

Teacher Acceptance and Action Questionnaire (TAAQ; Hinds et al., 2015; Portuguese Version: Galhardo et al., 2017). The TAAQ is a 10-item, single-factor scale designed to assess experiential avoidance among teachers. Each item is rated on a seven-point Likert scale (ranging from 1 = never or very rarely true to 7 = very often or always true), with higher scores indicating greater experiential avoidance. Both the original and the Portuguese studies found robust internal consistencies ($\alpha = .87$; $\alpha = .92$).

Data Analysis

Data was exported from the LimeSurvey platform regarding both the students' and the professors' separate online protocols. Statistical analyses were then carried out using the SPSS program (Statistical Package for the 23 Social Sciences version 25; Armonk, NY: IBM Corp.) and the PROCESS computation tool (version 3.3) for SPSS (Hayes, 2018).

We considered an $\alpha \leq .05$ as the criterion for statistical significance in the current study. Additionally, the sample's adherence to normality was assessed by evaluating each variable's skewness and kurtosis, with acceptable values of $|Sk| < 3$ and $|Ku| < 8-10$ (Kline, 2005). Furthermore, variance homogeneity was tested using Levene's test, and the outlier analysis was performed by graphing the results in box diagrams. Moreover, internal consistency coefficients were calculated for each measure and its respective factors. These coefficients were interpreted considering an $\alpha < .60$ as inadmissible; $.60 \leq \alpha \leq .69$ as weak; $.70 \leq \alpha \leq .79$ as acceptable; $.80 \leq \alpha \leq .89$ as high; and $.90 \leq \alpha \leq 1$ as excellent (Pestana & Gageiro, 2008).

Differences according to the sociodemographic features for the variables under study were tested using univariate analysis of variance (One Way ANOVA). According to Cohen (1988), The effect size was interpreted considering partial eta square values from .01 to .06 as small, from .07 to .13 as medium, and above .14 as large (Cohen, 1988). Furthermore, descriptive statistics were performed for each variable under study, including the sociodemographic variables. Pearson correlation coefficients were computed to explore the associations between sociodemographic variables and variables under study, as well as the association between independent, outcome, and mediator variables (Cohen et al., 2002). The magnitude of these coefficients was interpreted considering a correlation of $r \leq .20$ as very low; $.21 \leq r \leq .39$ as low; $.40 \leq r \leq .69$ as moderate; $.70 \leq r \leq .89$ as high; and $r \geq .90$ as an excellent association (Pestana & Gageiro, 2008).

For study 1, regarding the university students' sample, two mediation models were estimated with PROCESS (model 6 in Hayes, 2018) to assess the mediating role of self-criticism and experiential avoidance on the relationship between the traumatic impact of the COVID-19 and levels of burnout (Study 1A; Fig. 1) and test anxiety (Study 1B; Fig. 2). For study 2, regarding university professors, two mediation models were estimated with PROCESS (model 4 in Hayes, 2018) to investigate the mediating role of self-criticism on the relationship between the traumatic impact of the COVID-19 pandemic and burnout levels (Study 2A; Fig. 3) and, in a different model, to assess the mediating role of experiential avoidance on the relationship between the traumatic impact of the COVID-19 pandemic and burnout levels

(Study 2B; Fig. 4). In this sample, the decision to test two independent models instead of the original hypothesis which included self-criticism and experiential avoidance as mediators in the same model, was due to the final sample size, which did not permit the use of further variables in one model. For both studies, mediation effects were assessed using a bootstrapping procedure with 10,000 resamples, which created 95% bias-corrected and accelerated confidence intervals of the indirect and direct effects. These effects were considered significant ($p < .050$) if the zero value was not contained within the lower and upper bounds of the confidence intervals.

Fig 1. Conceptual diagram of the proposed mediation model for Study 1A.

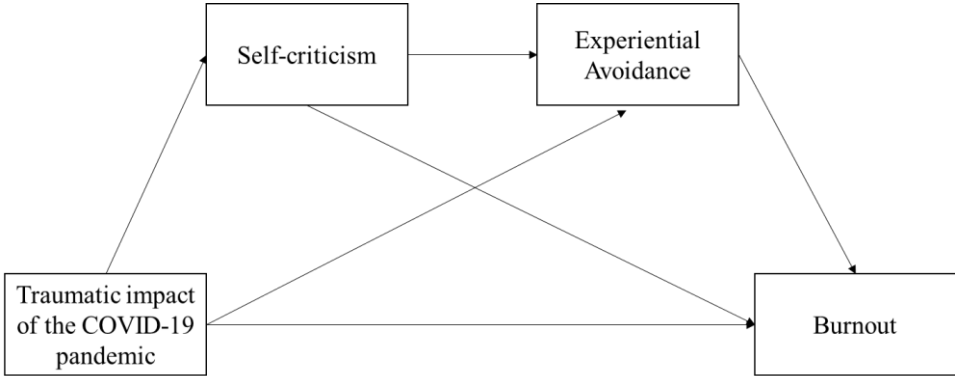


Fig 2. Conceptual diagram of the proposed mediation model for Study 1B.

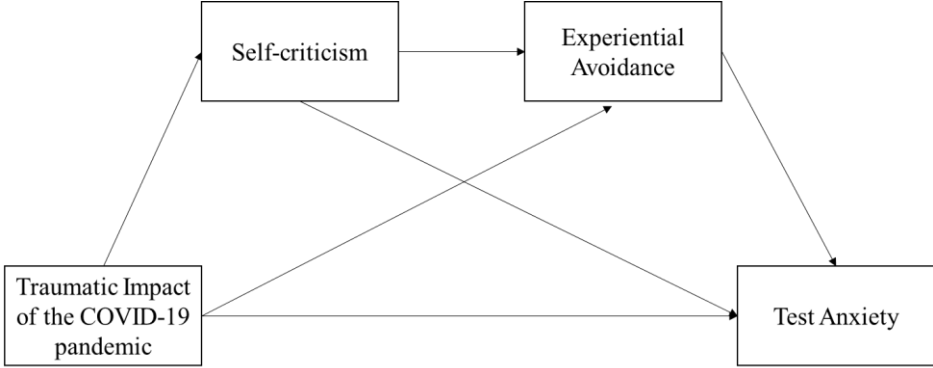


Fig 3. Conceptual diagram of the proposed mediation model for Study 2A.

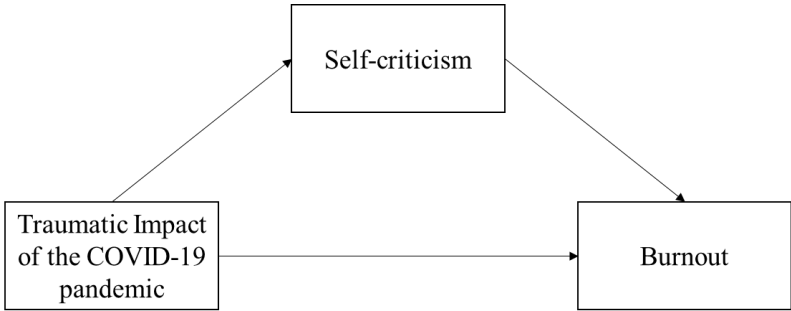
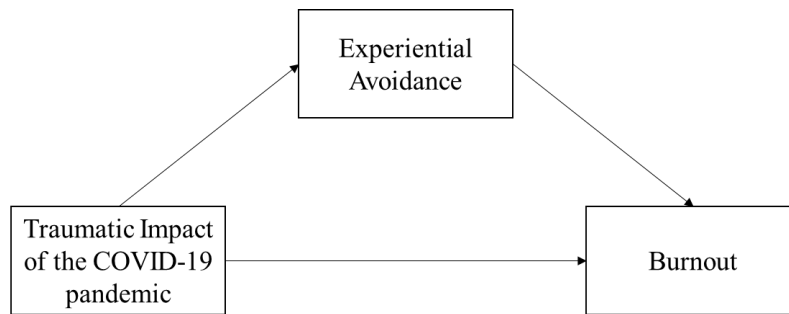


Fig 4. Conceptual diagram of the proposed mediation model for Study 2B.



Results

Preliminary Results for Study 1

Study 1 was divided into Studies 1A and 1B regarding the mediating role of self-criticism and experiential avoidance on the relationship between the traumatic impact of the COVID-19 pandemic and burnout levels (Study 1A) or test anxiety (Study 1B) in university students. No severe violations of the normal distribution were found for the variables under study, with values of skewness and kurtosis within the acceptable range. No significant outliers were found in the students' sample. Furthermore, no multicollinearity problems were found among study variables when assessing the variance inflation factor ($VIF < 5$). Moreover, significant gender differences were found regarding all the study variables, with female students scoring significantly higher on the traumatic impact of the COVID-19 pandemic, burnout levels, self-criticism, experiential avoidance, and test anxiety. However, small partial eta square values were found. Table 1 represents a summary of the gender differences for variables under study. Considering the small effect sizes, we decided not to control for the effect of gender in the correlation and mediation analysis.

Table 1. Gender differences for variables under study in Study 1.

	Female	Male	<i>F</i>	η^2
	(<i>N</i> = 359)	(<i>N</i> = 121)		
	<i>M</i> (<i>SD</i>)	<i>M</i> (<i>SD</i>)		
IES-R	48.92 (20.50)	42.03 (18.36)	9.02***	.04
FSCRS	18.01 (13.29)	14.68 (13.69)	3.79*	.02
AAQ-II	23.46 (10.83)	20.42 (11.16)	5.00**	.02
SMBM	55.84 (20.02)	45.40 (19.88)	12.42***	.05
	(<i>N</i> = 292)	(<i>N</i> = 102)		
RTT	77.15 (21.87)	69.23 (21.54)	6.90**	.03

Note. IES-R = Impact of Event Scale-Revised; FSCRS = Forms of self-criticizing/attacking and self-reassuring scale; AAQ-II = Acceptance and Action Questionnaire-II; SMBM = Shirom-Melamed Burnout Measure; RTT = Reactions to Tests; * $p < .050$; ** $p < .010$ ***; $p < .001$.; 4 students preferred not to identify their gender.

Preliminary results for study 2

For Study 2, we could not analyse a model that included both self-criticism and experiential avoidance as mediators due to the reduced sample size. Thus, we decided to study both mediators in separate simple mediation models. Thus, Study 2 was divided into Studies 2A and 2B regarding the mediating role of either self-criticism (Study 2A) or experiential avoidance (Study 2B) on the relationship between the traumatic impact of the COVID-19 pandemic and burnout levels in university professors. No severe violations of the normal distribution were found for the variables under study since skewness and kurtosis values were found to be within the normal range. Furthermore, given that only two moderate outliers were found, they were included in the analysis to ensure ecological validity. Moreover, no multicollinearity problems among study variables were found when assessing the variance inflation factor ($VIF < 5$). Also, significant gender differences were found regarding self-criticism, in which female professors scored significantly higher, however, exhibiting a small partial eta square value. Table 2 represents a summary of the gender differences for the variables under study within this sample. Considering the small effect sizes found, we decided not to control for the effect of gender in the subsequent correlation and mediation analysis.

Table 2. Gender differences for variables under study in Study 2.

	Female (<i>N</i> = 39)	Male (<i>N</i> = 31)		
	<i>M</i> (<i>SD</i>)	<i>M</i> (<i>SD</i>)	<i>F</i>	η^2
IES-R	43.87 (15.27)	38.39 (14.75)	2.30	-
FSCRS	13.26 (12.29)	6.52 (7.90)	7.02*	.09
TAAQ	26.23 (8.41)	22.61 (8.44)	3.19	-
SMBM	52.21 (22.97)	41.74 (22.41)	3.66	-

Note. IES-R = Impact of Event Scale-Revised; FSCRS = Forms of self-criticizing/attacking and self-reassuring scale; TAAQ = Teacher Acceptance and Action Questionnaire; SMBM = Shirom-Melamed Burnout Measure; RTT = Reactions to Tests; * $p < .050$.

Students' Context During the Pandemic

Participants were asked a series of questions that allowed us to understand their situation regarding the COVID-19 pandemic. Regarding the social distancing they were practising, 0.6% of the participants claimed they were in self-isolation in a specific area of the house, 51.0% reported they were in social isolation with limited outings to purchase food or medicine, 45.2% reported to be practising social distancing and keeping a safe distance from people outside the house, 2.1% reported they did not practice social distancing, and 1.0% preferred not to answer. Furthermore, 7.4% of the participants reported they were a part of the risk population, 88.8%

reported no to be, 3.3% reported they did not know, and 0.4% preferred not to respond. Additionally, 63.8% reported they had someone close to them who was a part of the risk population, 31.8% reported they did not, 4.1% claimed not to know, and 0.2% preferred not to answer. Moreover, when asked whether they had been infected with the SARS-CoV-2 virus, 8.3% answered positively, 85.1% answered negatively, and 6.6% claimed not to know. Furthermore, 44.0% of the participants reported they had someone close to them who had been infected, 53.7% reported they did not, and 2.3% reported not to know. Finally, 2.9% of the students reported they maintained an in-person learning method, 85.5% were learning online, 9.9% were learning both in-person and online, and 1.7% preferred not to respond.

Additionally, the students were asked a series of questions designed to evaluate the support they perceived from others during the COVID-19 pandemic. As a result, 1.0% of the students reported they had perceived no support at all, 1.4% perceived very low support levels, 3.7% perceived low support levels, 20.6% perceived moderate support levels, 37.4% perceived high support levels, 34.5% perceived very high support levels, and 1.2% preferred not to respond. When asked who they felt supported by, 79.9% of the students reported their family, 59.7% reported their friends, and 15.29% reported their partners. Finally, participants were asked a series of questions designed to assess the perceived impact of the pandemic on their personal and academic lives, and participants' distributions across all factors are represented in Table 3. Most students indicated a negative impact on all parameters of both their general and academic life, with a majority of the students indicating a negative impact on their life in general (52.5%), their social life (61.2%), psychological well-being (56.4%), quality of learning (54.1%), and balance between academic and personal life (53.9%). A smaller percentage of the students, but still more prominent than the percentage of those who reported a neutral or positive impact, reported a negative impact on academic life (48.8%), physical health (46.6%), relationship with colleagues (47.1%) and professors (44.4%), workload (45.3%) and work quality (43.9%). Family life was the only parameter where the most prominent percentage of students regarded a positive impact rather than a negative one (40.8%).

Table 3. Impact of the COVID-19 pandemic in university students' general and academic life.

General Life	EN	VN	N	NT	P	VP	EP
Life in General	5.8%	17.0%	29.7%	14.5%	11.6%	12.8%	8.7%
Academic Life	6.2%	19.3%	23.3%	13.8%	15.0%	12.2%	10.1%
Family Life	2.5%	10.9%	22.4%	23.6%	23.2%	11.6%	6.0%
Social Life	11.2%	26.9%	23.1%	9.7%	6.6%	11.6%	11.0%
Psychological Well-being	7.9%	22.9%	25.6%	18.0%	10.8%	9.3%	5.6%
Physical Health	7.9%	14.5%	24.2%	17.6%	20.1%	10.5%	5.4%
Academic Life	EN	VN	N	NT	P	VP	EP
Relationship with Colleagues	5.2%	16.5%	25.4%	21.3%	16.3%	10.3%	5.0%
Relationship with Professors	10.3%	13.8%	20.3%	32.2%	11.3%	9.0%	3.1%
Workload	5.2%	16.9%	23.2%	17.5%	16.8%	13.6%	6.7%
Work Quality	6.1%	15.0%	21.9%	17.6%	19.9%	13.8%	5.6%
Quality of learning	7.1%	20.1%	26.9%	14.9%	11.4%	10.7%	8.7%
Balance Between Academic and Personal Life	9.8%	21.8%	22.3%	14.6%	13.1%	10.4%	8.1%

Note. EN = Extremely Negative; VN = Very Negative; N= Negative; NT = Neutral; P = Positive; VP = Very Positive; EP = Extremely Positive.

Finally, a more negative perceived overall impact on students' general and academic lives was linked to higher levels of the traumatic impact of the COVID-19 pandemic, burnout, self-criticism, experiential avoidance, and test anxiety on a significant level (Table 4).

Table 4. Correlations between the perceived impact of the pandemic and study variables.

	IES-R	FSCRS	AAQ-II	SMBM	RTT
Impact of the COVID-19 pandemic on student's general life	-.38***	-.30***	-.31***	-.39***	-.30***
Impact of the COVID-19 pandemic on student's academic life	-.22***	-.14*	-.15*	-.27***	-.27***

Note. IES-R = Impact of Event Scale-Revised; FSCRS = Forms of self-criticizing/attacking and self-reassuring scale; AAQ-II = Acceptance and Action Questionnaire-II; SMBM = Shirom-Melamed Burnout Measure; RTT = Reactions to Tests; Values represent Pearson's correlations; * $p < .050$; ***; $p < .001$.

Test Anxiety and Further Questioning

Following the Reaction to Tests questionnaire, we added some further questions to assess the perceived impact on student's test anxiety levels. Out of the 286 students who answered these questions, 41.3% reported a perceived increase in test anxiety levels, while 14.3% reported a perceived decrease, and 44.4% reported they noticed no difference. Furthermore, we asked students how a group of factors contributed to the increase or decrease in their test anxiety levels, on a scale from 1 to 10, regarding online exams. Students reported the fear of not having enough internet speed ($M = 6.79$; $SD = 3.02$), of having their computer freeze ($M = 6.68$; $SD = 3.16$), of having a bad grade ($M = 6.65$; $SD = 2.76$), and of being

interrupted during an exam ($M = 6.31$; $SD = 3.05$) as the factors that most contributed to the perceived increase in test anxiety levels. As less impacting factors, students reported fear that their professor might think they are cheating ($M = 6.15$; $SD = 3.19$), fear of not having the proper conditions to focus during the exam ($M = 6.09$; $SD = 3.20$), of blocking and blanking ($M = 6.08$; $SD = 2.92$), and fear. Finally, the factor that students reported as the least impacting was the embarrassment of turning their camera on ($M = 3.44$; $SD = 2.87$). As for test anxiety reducing factors, students reported not having to worry about getting to university on time ($M = 5.75$; $SD = 3.34$), getting to do the exam in a comfortable location ($M = 5.41$; $SD = 3.07$), and not having their professor observing what they are doing ($M = 4.98$; $SD = 3.23$) as having the most substantial impact. Moreover, they reported less impacting factors such as the possibility of cheating ($M = 4.61$; $SD = 3.12$), feeling that their anxiety levels are not as perceivable ($M = 4.28$; $SD = 3.19$), not being surrounded by their colleagues ($M = 4.08$; $SD = 2.99$), and not feeling as embarrassed if they feel the need to give up on the exam ($M = 3.47$; $SD = 3.03$).

Professors' context during the pandemic

To understand professors' context during the COVID-19 pandemic we asked them a series of questions. Regarding the practice of social distancing, 35.7% of reported they were in social isolation with limited outings to purchase food or medicine, 57.1% reported to be practising social distancing and keeping a safe distance from people outside the house, 4.3% reported they did not practice social distancing, and 2.9% preferred not to respond. Furthermore, 17.1% of the participants reported they were a part of the risk population, 80.0% reported no to be, and 2.9% reported not to know. Additionally, 57.1% of the professors reported they had someone close to them who was a part of the risk population, 41.4% reported they did not, and 1.4% claimed not to know. Moreover, when asked whether they had been infected with the SARS-CoV-2 virus, 10.0% answered positively, 80.0% answered negatively, and 10.0% claimed not to know. Furthermore, 41.4% of the participants reported someone close to them who had been infected, 54.3% reported they did not, and 4.3% reported they did not know. Finally, 2.9% of professors reported they were teaching in-person, 81.4% were teaching online, 14.3% were teaching both in-person and online, and 1.4% preferred not to respond.

Additionally, professors were asked a series of questions designed to evaluate the support they perceived from others during the COVID-19 pandemic. As a result, 2.9% of the professors reported they had perceived no support at all, 1.3% perceived low support levels, 12.8% perceived moderate support levels, 27.2% perceived high support levels, and 55.7% perceived very high support levels. When asked who they felt supported by, 70.0% of the

professors reported their family, 30.0% reported their friends, and 28.57% reported their partners. Finally, we asked professors a series of questions to assess the perceived impact of the pandemic on their general and professional lives. The majority of the professors indicated a negative impact on their life in general (57.1%), social life (68.0%), psychological well-being (52.6%), their relationship with students (55.0%) and colleagues (52.0%), and students' learning quality (60.8%). A smaller percentage of the professors, but still more prominent than the percentage of those who reported a neutral or positive impact, identified a negative impact on their professional (50.1%) and family life (42.8%), physical health (47.0%), workload (44.2%) and quality of work (47.0), and on the balance between professional and personal life (48.6%). There were no parameters in which more professors reported a positive impact rather than a negative one. Participants' distributions across all factors are represented in Table 5.

Table 5. Impact of the COVID-19 pandemic in university professors' general and professional life.

General Life	EN	VN	N	NT	P	VP	EP
Life in General	7.1%	17.2%	32.8%	17.1%	8.5%	14.3%	2.9%
Professional Life	2.9%	21.5%	25.7%	18.6%	15.7%	14.3%	1.4%
Family Life	0.0%	11.4%	31.4%	21.4%	15.7%	18.6%	1.4%
Social Life	8.7%	36.2%	23.1%	15.9%	2.8%	2.8%	10.1%
Psychological Well-being	5.7%	24.2%	22.7%	21.4%	11.4%	7.1%	2.9%
Physical Health	1.4%	17.1%	28.5%	28.6%	15.7%	5.8%	2.9%
Professional Life	EN	VN	N	NT	P	VP	EP
Relationship with Students	2.9%	24.6%	27.5%	21.7%	14.4%	4.3%	4.3%
Relationship with Colleagues	2.9%	16.2%	33.8%	20.6%	14.7%	7.3%	4.4%
Workload	2.9%	18.5%	22.8%	15.7%	18.6%	11.4%	10.0%
Work Quality	1.4%	12.8%	32.8%	18.6%	20.0%	11.4%	2.9%
Quality of students' learning	5.8%	29.0%	26.0%	15.9%	15.9%	7.2%	0.0%
Balance Between Professional and Personal Life	8.6%	20.0%	20.0%	22.9%	10.0%	14.3%	4.3%

Note. EN = Extremely Negative; VN = Very Negative; N= Negative; NT = Neutral; P = Positive; VP = Very Positive; EP = Extremely Positive.

Finally, a more negative perceived overall impact on professors' general life was linked to higher levels of self-criticism and burnout, on a significant level. The perceived impact on professional life was not significantly associated with any of the study variables (Table 6).

Table 6. Correlations between the perceived impact of the pandemic and study variables

	IES-R	FSCRS	TAAQ	SMBM
Impact of the COVID-19 pandemic on professors' general life	-.14	-.30*	-.28	-.43*
Impact of the COVID-19 pandemic on professors' professional life	-.08	-.18	-.14	-.07

Note. IES-R = Impact of Event Scale-Revised; FSCRS = Forms of self-criticizing/attacking and self-reassuring scale; TAAQ = Teacher Acceptance and Action Questionnaire; SMBM = Shirom-Melamed Burnout Measure; * $p < .050$.

Descriptive Statistics and Correlations

Descriptive statistics regarding sample size, means, and standard deviations, along with Cronbach alpha values for each of the study variables are presented in Table 7. The correlation analysis in Study 1 revealed positive, significant, and moderate correlations among the traumatic impact of the COVID-19 pandemic, self-criticism, experiential avoidance, burnout, and test anxiety levels, and a positive, significant, and a high correlation between self-criticism and experiential avoidance. Furthermore, the correlation analysis in Study 2 revealed a positive, significant, and moderate correlation between the traumatic impact of the COVID-19 pandemic and burnout levels, among self-criticism, experiential avoidance and burnout levels and revealed low correlations between the traumatic impact of the COVID-19 pandemic and self-criticism, and between the traumatic impact of the COVID-19 pandemic experiential avoidance.

Table 7. Sample size (*N*), Means (*M*), Standard Deviations (*SD*), Cronbach alphas (α) and Intercorrelation scores on self-report measures.

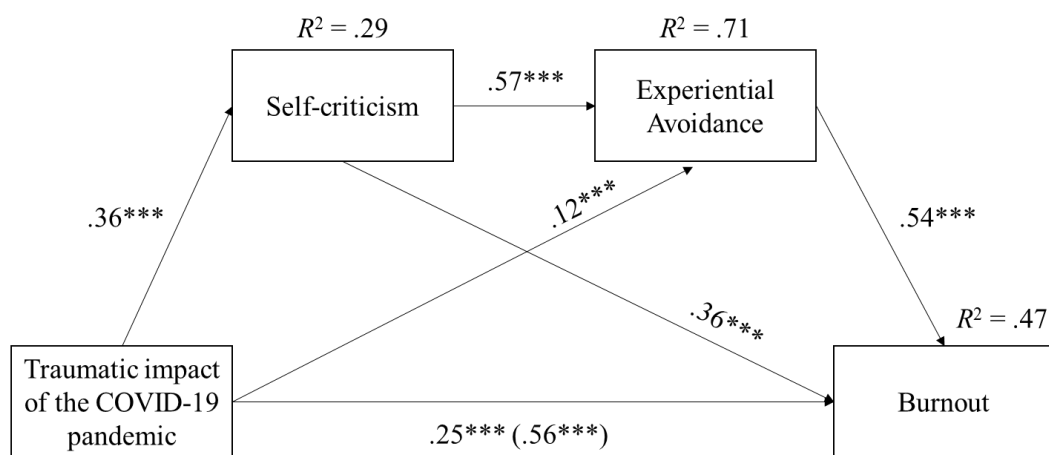
Study 1	<i>N</i>	<i>M</i>	<i>SD</i>	α	1	2	3	4	5
1 IES-R	484	47.41	20.38	.97	-				
2 FSCRS	484	17.25	13.53	.95	.54***	-			
3 AAQ-II	484	22.77	11.05	.94	.60***	.82***	-		
4 SMBM	484	53.26	20.61	.96	.55***	.61***	.63***	-	
5 RTT	398	75.32	22.19	.96	.48***	.63***	.63***	.58***	-
Study 2	<i>N</i>	<i>M</i>	<i>SD</i>	α	1	2	3	4	
1 IES-R	70	41.44	15.18	.94	-				
2 SMBM	70	47.57	23.16	.97	.49***	-			
3 FSCRS	70	10.27	11.03	.95	.35**	.67***	-		
4 TAAQ	70	24.63	8.55	.84	.25*	.58***	.54***	-	

Note. IES-R = Impact of Event Scale-Revised; SMBM = Shirom-Melamed Burnout Measure; FSCRS = Forms of self-criticizing/attacking and self-reassuring scale; AAQ-II = Acceptance and Action Questionnaire-II; RTT = Reactions to Tests; TAAQ = Teacher Acceptance and Action Questionnaire; Values represent Pearson's correlations; * $p < .050$; ** $p < .010$ ***; $p < .001$.

Study 1A: The Mediating Role of Self-Criticism and Experiential Avoidance on the Relationship Between the Traumatic Impact of the COVID-19 pandemic and Burnout Levels in University Students

As represented in Fig. 5, the traumatic impact of the COVID-19 pandemic positively and significantly predicted self-criticism, explaining 29.13% of self-criticism’s variance. Additionally, the traumatic impact of the COVID-19 pandemic and self-criticism also positively and significantly predicted experiential avoidance, explaining a total of 70.68% of its variance. Furthermore, the traumatic impact of the COVID-19 pandemic, self-criticism, and experiential avoidance positively and significantly predicted burnout levels in university students, explaining 46.58% of their variance. The total effect of the traumatic impact of the COVID-19 pandemic on burnout levels was significant, explaining 30.39% of their variance.

Fig. 5. Mediation model diagram for study 1A (Process Model 6).



Note. Path values represent unstandardised regression coefficients; the value inside parenthesis represents the total effect of X on Y. *** $p < .001$.

Although self-criticism and experiential avoidance mediated the relationship between the traumatic impact of the COVID-19 pandemic and burnout levels, the results indicated that some of the direct effect between these variables was maintained. Thus, self-criticism and experiential avoidance partially mediated the effect of the traumatic impact of the COVID-19 pandemic on burnout levels. Direct, indirect, and total effects are presented in Table 8.

Table 8. Summary of the direct, indirect, and total effects – Study 1A

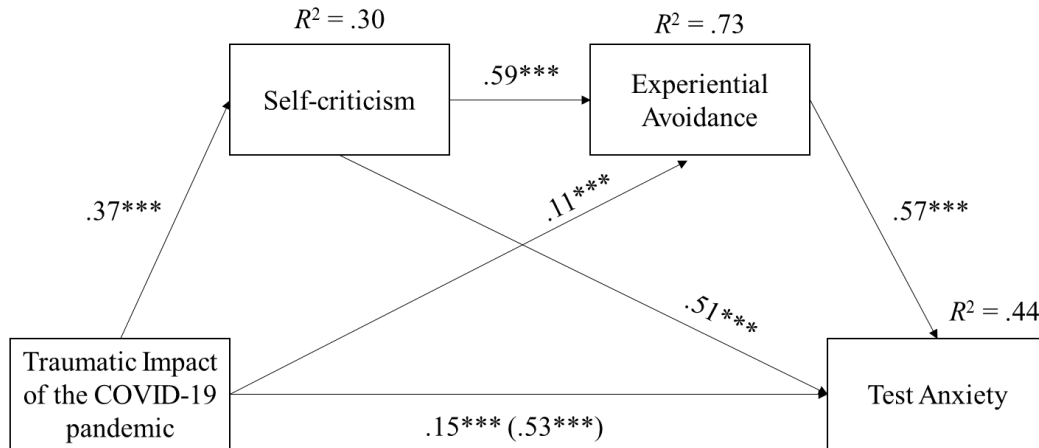
Direct Effects	<i>b</i>	<i>SE</i>	<i>t</i>	<i>p</i>	95% CIs
Traumatic Impact of the COVID-19 pandemic → Self-Criticism	.36	.03	14.07	< .001	.31/.41
Self-Criticism → Experiential Avoidance	.57	.02	23.79	< .001	.52/.62
Traumatic Impact of the COVID-19 pandemic → Experiential Avoidance	.12	.02	7.68	< .001	.09/.15
Traumatic Impact of the COVID-19 pandemic → Burnout	.25	.04	5.92	< .001	.17/.33
Self-Criticism → Burnout	.36	.09	4.04	< .001	.18/.53
Experiential Avoidance → Burnout	.54	.12	4.73	< .001	.32/.77
Indirect Effects	<i>b</i>	<i>SE</i>	<i>t</i>	<i>p</i>	95% CIs
Traumatic Impact of the COVID-19 pandemic → Self-Criticism → Burnout	.13	.04	-	-	.05/.21
Traumatic Impact of the COVID-19 pandemic → Experiential Avoidance → Burnout	.07	.02	-	-	.03/.11
Traumatic Impact of the COVID-19 pandemic → Self-Criticism → Experiential Avoidance → Burnout	.11	.03	-	-	.06/.17
Total Effects	<i>b</i>	<i>SE</i>	<i>t</i>	<i>p</i>	95% CIs
Traumatic Impact of the COVID-19 → Burnout	.56	.04	14.51	< .001	.48/.63

Note. *b* = unstandardized regression coefficient; *SE* = standard error; *p* = statistical significance; *CI* = confidence interval.

Study 1B. The Mediating Role of Self-Criticism and Experiential Avoidance on the Relationship Between the Traumatic Impact of the COVID-19 Pandemic and Test Anxiety in University Students

As represented in Fig. 6, the traumatic impact of the COVID-19 pandemic positively and significantly predicted self-criticism, explaining 29.59% of self-criticism’s variance. Additionally, the traumatic impact of the COVID-19 pandemic and self-criticism also positively and significantly predicted experiential avoidance, explaining a total of 72.62% of its variance. Furthermore, the traumatic impact of the COVID-19 pandemic, self-criticism, and experiential avoidance positively and significantly predicted test anxiety levels in university students, explaining a total of 44.29% of their variance. The total effect of the traumatic impact of the COVID-19 pandemic on test anxiety was significant, explaining 23.01% of its variance. Direct, indirect, and total effects are presented in Table 9.

Fig. 6. Mediation model diagram for study 1B (Process Model 6).



Note. Path values represent unstandardised regression coefficients; the value inside parenthesis represents the total effect of X on Y. *** $p < .001$.

Once again, despite the mediation role of self-criticism and experiential avoidance on the relationship between the traumatic impact of the COVID-19 pandemic and test anxiety levels, the results indicated that some of the direct effect between these variables was maintained. Thus, self-criticism and experiential avoidance partially mediated the effect of the traumatic impact of the COVID-19 pandemic on test anxiety levels.

Table 9. Summary of the direct, indirect, and total effects – Study 1B

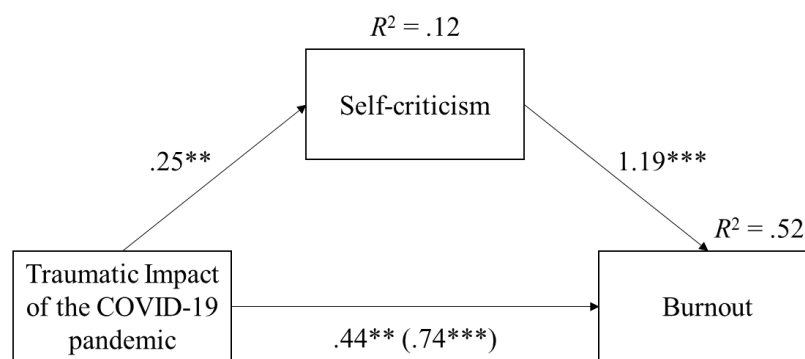
Direct Effects	<i>b</i>	<i>SE</i>	<i>t</i>	<i>p</i>	95% <i>CI</i>s
Traumatic Impact of the COVID-19 pandemic → Self-Criticism	.37	.03	12.90	< .001	.31/.42
Traumatic Impact of the COVID-19 pandemic → Experiential Avoidance	.11	.02	6.33	< .001	.07/.14
Self-Criticism → Experiential Avoidance	.59	.03	23.19	< .001	.54/.64
Traumatic Impact of the COVID-19 pandemic → Test Anxiety	.15	.05	2.99	.003	.052/.26
Self-Criticism → Test Anxiety	.51	.112	4.55	< .001	.29/.73
Experiential Avoidance → Test Anxiety	.57	.14	3.96	< .001	.29/.86
Indirect Effects	<i>b</i>	<i>SE</i>	<i>t</i>	<i>p</i>	95% <i>CI</i>s
Traumatic Impact of the COVID-19 pandemic → Self-Criticism → Test Anxiety	.17	.04	-	-	.09/.25
Traumatic Impact of the COVID-19 pandemic → Self-Criticism → Test Anxiety	.06	.02	-	-	.02/.10
Traumatic Impact of the COVID-19 pandemic → Experiential Avoidance → Test Anxiety	.11	.04	-	-	.05/.18
Total Effects	<i>b</i>	<i>SE</i>	<i>t</i>	<i>p</i>	95% <i>CI</i>s
Traumatic Impact of the COVID-19 pandemic → Test Anxiety	.53	.05	10.88	< .001	.43/.62

Note. *b* = unstandardized regression coefficient; *SE* = standard error; *p* = statistical significance; *CI* = confidence interval.

Study 2A: The Mediating Role of Self-Criticism on the Relationship Between the Traumatic Impact of the COVID-19 pandemic and Burnout Levels in University Professors

As represented in Fig. 7, the traumatic impact of the COVID-19 pandemic positively and significantly predicted self-criticism, explaining 12.13% of its variance. Additionally, the traumatic impact of the COVID-19 pandemic and self-criticism also positively and significantly predicted burnout levels in university professors, explaining a total of 51.72% of their variance. The total effect of the traumatic impact of the COVID-19 pandemic on burnout was significant, explaining 23.60% of its variance. Direct, indirect, and total effects are presented in Table 10.

Fig. 7. Mediation model diagram for study 2A (Process Model 4).



Note. Path values represent unstandardised regression coefficients; the value inside parenthesis represents the total effect of X on Y. ** $p < .010$ *** $p < .001$.

Although self-criticism mediated the relationship between the traumatic impact of the COVID-19 pandemic and burnout levels, the results indicated that some of the direct effect between these variables was maintained. Thus, self-criticism partially mediated the effect of the impact of the COVID-19 pandemic on burnout levels.

Table 10. Summary of the direct, indirect, and total effects – Study 2A

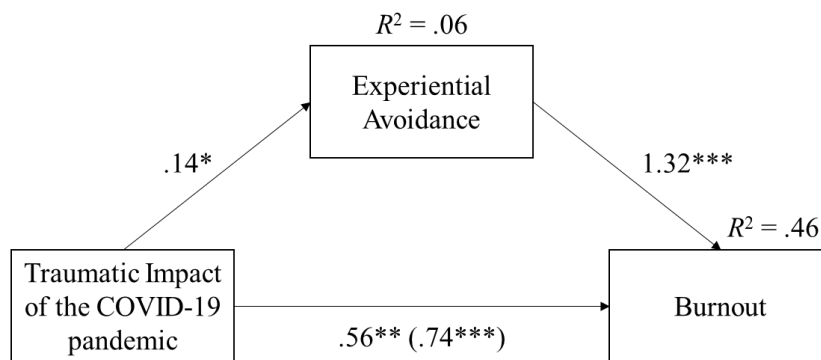
Direct Effects		<i>b</i>	<i>SE</i>	<i>t</i>	<i>p</i>	95% CIs
Traumatic Impact of the COVID-19 pandemic →	Self-Criticism	.25	.08	3.06	.003	.09/.42
Traumatic Impact of the COVID-19 pandemic →	Burnout	.44	.14	3.18	.002	.16/ .72
Self-Criticism →	Burnout	1.19	.19	6.25	< .001	.81/1.57
Indirect Effects		<i>b</i>	<i>SE</i>	<i>t</i>	<i>p</i>	95% CIs
Traumatic Impact of the COVID-19 pandemic →	Self-Criticism → Burnout	.30	.12	-	-	.06/.55
Total Effects		<i>b</i>	<i>SE</i>	<i>t</i>	<i>p</i>	95% CIs
Traumatic Impact of the COVID-19 pandemic →	Burnout	.74	.16	4.58	< .001	.42/1.06

Note. *b* = unstandardized regression coefficient; *SE* = standard error; *p* = statistical significance; *CI* = confidence interval.

Study 2B: The Mediating Role of Experiential Avoidance on the Relationship Between the Traumatic Impact of the COVID-19 pandemic and Burnout Levels in University Professors

As represented in Fig. 8, the traumatic impact of the COVID-19 pandemic positively and significantly predicted experiential avoidance, explaining 6.17% of its variance. Further, the traumatic impact of the COVID-19 pandemic and experiential avoidance also positively and significantly predicted burnout levels, explaining a total of 45.75% of their variance. The total effect of the traumatic impact of the COVID-19 pandemic on burnout was significant, explaining 23.60% of its variance. Direct, indirect, and total effects are presented in Table 11.

Fig. 8. Mediation model diagram for study 2A (Process Model 4).



Note. Path values represent unstandardised regression coefficients; the value inside parenthesis represents the total effect of X on Y. * $p < .050$; ** $p < .010$ *** $p < .0010$.

Although experiential avoidance was a significant mediator of the relationship between the traumatic impact of the COVID-19 pandemic and burnout levels, the results indicated that some of the direct effect between these variables was maintained. Thus, experiential avoidance partially mediated the effect of the traumatic impact of the COVID-19 pandemic on burnout.

Table 11. Summary of the direct, indirect, and total effects – Study 2B

Direct Effects	b	SE	t	p	95% CIs
Traumatic Impact of the COVID-19 pandemic → Experiential Avoidance	.14	.07	2.12	.038	.01/.27
Traumatic Impact of the COVID-19 pandemic → Burnout	.56	.14	3.93	< .001	.27/.84
Experiential Avoidance → Burnout	1.32	.25	5.23	< .001	.81/1.82
Indirect Effects	b	SE	t	p	95% CIs
Traumatic Impact of the COVID-19 pandemic → Experiential Avoidance → Burnout	.18	.09	-	-	.02/.37
Total Effects	b	SE	t	p	95% CIs
Traumatic Impact of the COVID-19 pandemic → Burnout	.74	.16	4.58	< .001	.42/1.06

Note. *b* = unstandardized regression coefficient; *SE* = standard error; *p* = statistical significance; *CI* = confidence interval.

Discussion

Several studies have widely explored the negative effect of the COVID-19 pandemic on mental health and have reported an increase in psychopathology levels (e.g., Dimitriu et al., 2020; Shevlin et al., 2020; Xiong et al., 2020). However, although COVID-19 related factors such as health threats, the disruption of daily routine, isolation, boredom, and frustration have been considered as substantial factors in explaining the poor mental health outcomes (Choi et al., 2020), other factors seem to be explaining the negative impact on mental health. For instance, self-criticism and experiential avoidance have been linked to lower adaptability to the pandemic (Besser et al., 2020; Seçer et al., 2020). Furthermore, higher levels of self-criticism and experiential avoidance have also been linked to higher levels of psychopathology (e.g., Chawla & Ostafin, 2007; Werner et al., 2017), namely burnout and test anxiety (e.g., Atuk, 2020; Cunha & Paiva, 2012; Furr et al., 2006; Hinds et al., 2015), and have been associated with poorer mental health outcomes following a traumatic experience (e.g., Cox et al., 2004; Polusny & Follette, 1995). Finally, when considering specific populations, students and teachers have been considered vulnerable to mental health difficulties (Browning et al., 2020; Johnson et al., 2005) and research suggests that there has been an increase in teachers' burnout levels (Zadok-Gurman et al., 2021) and students' burnout and test anxiety levels (Chen et al., 2020; Li et al., 2021). Thus, this study aimed to assess the relationship between the traumatic impact of the COVID-19 pandemic and burnout levels in university students and professors, test anxiety levels in university students, and explore the mediating role of self-criticism and experiential avoidance in this relationship. More specifically, the aim of Study 1 was to test the mediator effects of self-criticism and experiential avoidance on the relationship between the traumatic impact of the COVID-19 pandemic and burnout and test anxiety levels in university students. Accordingly, the aim of Study 2 was to examine the mediator effects of self-criticism and experiential avoidance on the association between the traumatic impact of the COVID-19 pandemic and burnout levels in university professors.

Firstly, we set out to explore the participants' context during the COVID-19 pandemic. Regarding the student sample, most participants reported they were either in social isolation with limited outings to purchase food or medicine (51%) or practising social distancing and keeping a safe distance from people outside the house (45.2%). Most students claimed they were not a part of the risk population (88.8%) but had someone close to them who was (63.8%). Furthermore, most students reported they had not been infected with the SARS-CoV-2 virus (85.1%), and while 53.7% reported no one close to them had been infected, 44.0% claimed they

had. Moreover, most students reported moderate (20.6%), high (37.4%) or very high (34.5%) support levels, mainly referring their family and friends as support groups. Further, more than half of the student sample reported a negative impact on their life in general (52.5%), their social life (61.2%), psychological well-being (56.4%), quality of learning (54.1%), and life balance (53.9%). A smaller, but still prevalent percentage of the students, reported a negative impact on academic life (48.8%), physical health (46.6%), relationship with colleagues (47.1%) and professors (44.4%), workload (45.3%) and work quality (43.9%). Interestingly, family life was the only parameter in which more students reported a positive impact (40.8%) than a negative or neutral one. Finally, a more negative perceived overall impact on students' general and academic lives was positively and significantly associated with higher levels of the traumatic impact of the pandemic, burnout, self-criticism, experiential avoidance, and test anxiety. These findings suggest that a higher perceived impact of the COVID-19 pandemic on university students' general and academic lives, by being associated with a higher traumatic impact of the COVID-19 pandemic and higher levels of self-criticism and experiential avoidance, may impose a risk factor for the levels of burnout and test anxiety in students.

Additionally, regarding the professors' sample, most participants reported they were practising social distancing and keeping a safe distance from people outside the house (57.1%) or in social isolation with limited outings to purchase food or medicine (35.7%). Most professors reported they were not a part of the risk population (80.0%), and while 51.7% claimed they knew someone close to them who was, 41.4% reported they did not. Furthermore, the vast majority reported they had not been infected with the SARS-CoV-2 virus (80.0%), and while 41.4% claimed someone close to them had been infected, 54.3% reported they did not. Moreover, most professors reported high (27.2%) or very high (55.7%) support levels, mainly referring their family, partners, and friends as support groups. Additionally, with a vast majority of professors using online teaching methods (81.4%), more than half of the professors reported a negative impact on their life in general (57.1%), social life (68.0%), psychological well-being (52.6%), their relationship with students (55.0%) and colleagues (52.0%), and students' learning quality (60.8%). Moreover, a slightly smaller but still prevalent percentage reported a negative impact on their professional (50.1%) and family life (42.8%), physical health (47.0%), workload (44.2%), quality of work (47.0), and life balance (48.6%). Finally, a more negative perceived impact of the COVID-19 pandemic on professors' general life was significantly linked to higher levels of burnout and self-criticism, while the perceived impact on their professional life was not. These results may lead one to think that a more negative perceived impact of the COVID-19 pandemic on university professors' general life, being associated with

higher self-criticism levels, may impose a risk factor for the levels of burnout in university professors, while a higher perceived impact on professors' professional life may not. Furthermore, Gomes and collaborators (2021), using the same factors, although using a much broader sample (N = 355), found that a greater percentage of elementary and high school teachers perceived a more negative impact of the COVID-19 pandemic on their general (66.7%), professional (68.7%), family (50.7%), and social lives (77.7%), psychological well-being (61.4%), physical health (49.3%), relationship with students (53.5%) and colleagues (49.3%), workload (63.7%) and work quality (51.5%), quality of students' learning (63.9%), and life balance (65.6%). Although the difference in sample size must be kept in mind, these findings suggest that social life was the parameter in which elementary, high school teachers, and university professors reported a more negative impact. Furthermore, one hypothesis for these results could be that university professors could have been more accustomed to developing digital materials. In contrast, elementary and high school teachers might have had to prepare the materials from scratch, thus increasing their workload and perceived impact on their professional life, which could impact work quality, psychological well-being, the balance between personal and professional life, and thus, life in general. Furthermore, elementary and high school teaching could, in most cases, involve smaller class sizes and a more personalised teaching method, while university regards more independent learning, which could be the cause for the more negative perceived impact on elementary and high school teachers' relationship with students and their quality of learning. Another aspect that could be furthering elementary and high school teachers perceived negative impact on their professional life, quality of students learning and relationship with students is that class attendance is compulsory, while university students may choose whether to engage in their lessons. Furthermore, elementary and high school students are significantly younger and more immature than university students. Thus, for all of these reasons, elementary and high school teachers could be dealing with higher levels of disruptive, inattentive and defiant behaviours during their online classes.

Many researchers have identified significant risk factors for the impact of the COVID-19 pandemic, suggesting, for instance, that physically isolating during the pandemic could further its negative impact (Besser et al., 2020). Thus, given that the vast majority of both the student and professor samples are either keeping a safe distance from people outside the house or in social isolation with limited outings to purchase food or medicine, they could be vulnerable to such a problematic risk factor. Moreover, almost half of the students and professors reported that someone close to them had been infected and having a close relationship with individuals who have been affected by the virus has been associated with lower psychological well-being

(Favieri et al., 2021) and higher levels of psychological impact (Browning et al., 2020). On the other hand, most of the participants in both the student and professor samples reported not to be a part of the risk population, while presenting health risk factors has been associated with lower levels of psychological well-being (Favieri et al., 2021). Furthermore, the vast majority of both our samples reported they had not been infected with the SARS-CoV-2 virus, while being sure that one has had no contact with people affected by the virus has also been associated with higher psychological well-being (Favieri et al., 2021). Thus, our sample seems to have some protective factors regarding the impact of the COVID-19 pandemic on their mental health.

Furthermore, we assessed the impact of the COVID-19 pandemic on perceived test anxiety levels through some further questioning in which 286 students participated. While 85.5% of the total sample reported they were facing online educational methods, the goal was to investigate whether online exam related factors could be identified as contributing to the perceived increase in test anxiety levels that 41.3% of the 286 students reported. Students identified the fear of not having enough internet speed, having their computer freeze, having a bad grade, and being interrupted during an exam as the most impacting factors on their test anxiety levels. These results suggest that the COVID-19 pandemic has imposed new challenges on university students that have not been previously addressed in research. Excluding fear of having a bad grade, students seem to have only pointed out factors they cannot control as the most impacting factors in their test anxiety levels. These results represent a significant addition to previously accounted factors such as knowledge perception, inability to enhance their learning (Carveth et al., 1996), and high pressure to achieve good results in exams (Erlauer, 2003). Thus, adding to their preparation and personal factors, various alternative external factors could significantly impact their performance, which seems to be heightening students' test anxiety levels. Moreover, regarding test anxiety-reducing factors, students reported not having to worry about getting to their university on time, getting to do the exam in a comfortable location and not having their professor observing what they are doing as the most impacting factors. These findings suggest that, while the COVID-19 pandemic brought new challenges for university students, it still raised conditions that had a reducing effect on test anxiety, mostly related to the possibility of doing the exam in the comfort of their own homes. These results represent a significant addition to previously accounted factors such as increased confidence, developed learning skills, positive evaluations in exams, greater knowledge gain (Duraku et al., 2016), and gained experience and adaptability to university routines (Ans et al., 2012). Therefore, our findings could contribute to the explanation of the reports from 14.3% and 44.4%

of the 286 students who reported a perceived decrease and maintenance in test anxiety levels, respectively.

The main aim of the current study was to investigate whether the traumatic impact of the COVID-19 pandemic would directly impact burnout and test anxiety levels in university students and burnout levels in university professors. Furthermore, we set out to explore whether this relationship would be mediated by self-criticism and experiential avoidance. Thus, Study 1 examined the mediating role of self-criticism and experiential avoidance on the relationship between the traumatic impact of the COVID-19 pandemic and burnout (Study 1A) and test anxiety levels (Study 1B) in university students. Study 2 tested the mediating role of self-criticism (Study 2A) and experiential avoidance (Study 2B) on the relationship between the traumatic impact of the COVID-19 pandemic and burnout levels in university professors.

Given that the results for all four studies are congruent and follow the same pattern, we opted to write the discussion not by studies but by results, discussing our findings altogether.

As hypothesised in Study 1 and Study 2 (H1 and H4), positive and significant correlations were found among all study variables in all four studies (1A, 1B, 2A, and 2B).

More specifically, the traumatic impact of the COVID-19 pandemic revealed positive and significant associations with self-criticism, experiential avoidance, and burnout levels in both university students and professors, and test anxiety levels in students. To the best of our knowledge, the association between the traumatic impact of the COVID-19 pandemic and self-criticism had not yet been explored in previous research. However, experiences of self-criticism have been described as common among traumatised individuals (Irons & Lad, 2017), and many authors are defending that the COVID-19 pandemic should be considered a traumatic and challenging life process (e.g., Imperatori et al., 2020; Seçer and Ulaş, 2020). On the other hand, our results are in line with Seçer and colleagues (2020), who found that higher fear of COVID-19 was linked to higher levels of experiential avoidance. Moreover, our findings align with Chen and colleagues (2020), who reported an increase in burnout levels in a university student sample during the COVID-19 pandemic, and with Zadok-Gurman and collaborators (2021), who found an increase in burnout levels in teachers during the COVID-19 pandemic. These findings extend the work on the association between the impact of the COVID-19 pandemic and burnout levels (e.g., Yıldırım & Solmaz, 2020). Furthermore, our findings resemble those of Li and collaborators (2021), who found an increase in students' test anxiety levels in the context of the COVID-19 pandemic.

Additionally, self-criticism had a positive and significant correlation with experiential avoidance, burnout and test anxiety levels in university students, and burnout levels in university professors. These findings align with Cunha and Paiva (2012), who found a negative association between self-criticism and acceptance, while acceptance has been described as a process that is opposite to experiential avoidance (Hayes et al., 1999). Furthermore, our findings are in line with Burns (1980) that suggested that perfectionist individuals at risk of facing self-critical thoughts might resort to experiential avoidance. Still regarding the impact of self-criticism, our results are in line with previous studies that suggest a significant and positive association with burnout (e.g., Atuk, 2020; Melo & Oliver, 2012) and, regarding only the student population, test anxiety levels (e.g., Cunha & Paiva, 2012; Melo 2006).

Moreover, experiential avoidance was significantly and positively associated with burnout and test anxiety levels in university students and burnout levels in university professors. In line with our results, other studies have found associations with higher levels of burnout (e.g., Hinds et al., 2015; Iglesias et al., 2009) and, for the student population, higher test anxiety levels (Furr et al., 2006). These results contribute to the growing body of research that suggests a significant and positive relationship between self-criticism, experiential avoidance, and psychopathology (e.g., Chawla & Ostafin, 2007; Hayes et al., 2004; Werner et al., 2017).

Furthermore, as hypothesised, the traumatic impact of the COVID-19 pandemic directly predicted burnout and test anxiety levels in university students (H2) and burnout levels in university professors (H5). In line with our results, Yıldırım and Solmaz (2020) found that COVID-19 stress was a significant predictor of burnout in the general population. Moreover, our findings align with Chen and colleagues (2020) and Zadok-Gurman and collaborators (2021), who found an increase in burnout levels in university students and teachers, respectively, during the COVID-19 pandemic. We could not find any previous studies that focused on the direct effect of the COVID-19 pandemic on test anxiety levels. However, Li and colleagues (2021) found that the intolerance of uncertainty was a significant predictor of test anxiety levels in the COVID-19 pandemic's context. One hypothesis for the direct effect of the COVID-19 pandemic on burnout and test anxiety levels could be that COVID-19 related stress is associated with a decreased ability to adapt to challenging times (Yıldırım & Solmaz, 2020). In line with this hypothesis, several studies have reported a positive association between stress and burnout regarding the current context of the COVID-19 pandemic (e.g., Sung et al., 2020; Talaei et al., 2020), while Duraku (2017) reported various results that supported the association

between higher levels of test anxiety and stress factors regarding students' academic and personal lives.

Lastly, as hypothesised, self-criticism and experiential avoidance partially mediated the relationship between the impact of the COVID-19 pandemic and burnout and test anxiety levels in university students (H3) and burnout levels in university professors (H6). Thus, our results suggest that, while part of the effect of the traumatic impact of the COVID-19 pandemic on burnout and test anxiety levels can be explained by self-criticism and experiential avoidance, some of its direct effect is still maintained.

For articulation purposes, this section firstly addresses the mediating effect of self-criticism, followed by the considerations about the mediating effect of experiential avoidance.

As previously discussed, various studies have found an increase in burnout and test anxiety levels during the COVID-19 pandemic (Chen et al., 2020; Li et al., 2021; Zadok-Gurman et al., 2021), and Yıldırım and Solmaz (2020) found that COVID-19 stress was a significant predictor of burnout in the general population.

However, to our knowledge, the direct effect of the traumatic impact of the COVID-19 pandemic on self-criticism levels has not yet been researched. Nevertheless, in line with our results, previous studies have suggested that self-criticism was a common experience among traumatised individuals (Irons & Lad, 2017). Furthermore, considering the mediating effect of self-criticism, other studies have found an association between self-criticism and lower levels of adaptability to the pandemic (Besser et al., 2020). Additionally, Matos and collaborators (2021) found that fears of compassion, which is positively associated with higher levels of self-criticism (e.g., Kirby et al., 2019), magnified the negative impact of the COVID-19 pandemic on mental health. Moreover, the impact of self-criticism on psychopathology has been widely researched (e.g., Castilho et al., 2014, 2017; Gilbert et al., 2006; Shahar et al., 2015), suggesting a positive association with burnout levels (e.g., Atuk, 2020; Melo & Oliver, 2012), and test anxiety levels in students (e.g., Bieling et al., 2004; Cunha & Paiva, 2012).

When considering a possible explanation for the effect of self-criticism on the relationship between the traumatic impact of the COVID-19 pandemic and burnout levels for university students and professors, and test anxiety levels for university students alone, it is essential to note that Gilbert (2005) and Gilbert and Irons (2005) argued that similar psychological systems are used to operate people's interactions with themselves and others, arguing that we respond to our condemnations and attacks with the same defensive response systems used to deal with external threats and attacks (Gilbert, 2005). Thus, self-criticism could

be considered as an internal process that activates the same strategies used to respond to external threat signals, thus activating the threat system (Gilbert, 2005), which evolved to detect and aid in the response to threats in the world and is associated with protective behaviours and emotions such as anxiety, anger, and disgust (Gilbert, 2014; Gilbert & Irons, 2005). Furthermore, it is the activation of this system that is mostly linked to psychopathology (Gilbert, 2005). If the threat system becomes dominant, it may direct attention to threats and facilitate cognitive distortions such as catastrophising or overgeneralising and promote quick threat-based responses. Thus, this system may help comprehend the development and maintenance of trauma (Gilbert, 2014; Gilbert & Irons, 2005). Moreover, given that trauma and self-criticism operate through the same threat system, whose activation has been linked to higher levels of psychopathology, it could be thought that, while furthering the activation of the threat system caused by trauma, self-criticism could magnify the traumatic impact of the COVID-19 pandemic on psychopathology levels, namely on burnout and test anxiety levels.

On the other hand, fear of COVID-19 was found to have a positive association with experiential avoidance, which was a predictor of lower levels of adaptability and psychological adjustment to the pandemic (Seçer et al., 2020) that were, in turn, linked to higher psychopathology levels (Kashdan & Rottenberg, 2010). Furthermore, Seçer and Ulaş (2020) found that the effect of COVID-19 fear on OCD symptoms was mediated by experiential avoidance. Additionally, the impact of experiential avoidance on psychopathology has been vastly investigated (e.g., Chawla & Ostafin, 2007; Hayes et al., 2004; Hinds et al., 2015), suggesting a significant and positive association with higher levels of burnout (Hinds et al., 2015; Iglesias et al., 2009) and test anxiety (Furr et al., 2006; Kelardeh et al., 2019).

The mediating role of experiential avoidance seems to be explained through different mechanisms. Experiential avoidance is characterised as the unwillingness to contact with private experiences such as feelings, memories, thoughts, and bodily feelings, and as avoidant reactions in taking steps to modify them (Hayes et al., 1996). Thus, the traumatic impact of the COVID-19 pandemic may be prompting experiential avoidance responses, which play an essential role in the emergence and persistence of psychological problems (Seçer et al., 2020). When faced with traumatic situations, individuals may resort to several unproductive attempts at emotional regulation (e.g., thought suppression), which can prepare an environment for the effects of the avoided experiences, paradoxically increasing them and the problems they are associated with (Briggs & Price, 2009; Hayes et al., 1996, 2012). Thus, experiential avoidance has important effects on psychological adjustment skills, both in the short and long-term, when facing negative situations (Hayes et al., 2012), as it reduces psychological flexibility (Bond et

al., 2006), negatively impacting the individual's well-being and quality of life (Hayes et al., 2004; Machell et al., 2015). Seçer and colleagues (2020) suggested that secondary effects due to the pandemic could become chronic in individuals who show avoidance reactions, while other studies have reported signs of severe adjustment disorders in the context of the COVID-19 pandemic (Ornell et al., 2020; Shigemura et al., 2020). In summary, it may be thought that the traumatic effect of the COVID-19 pandemic, namely regarding intense COVID-19 related fear, will elicit traumatic and dysfunctional experiential avoidance responses in individuals, which will lower the individuals' psychological flexibility and psychosocial adjustment skills (Seçer et al., 2020), and lead to various psychopathological symptoms, (Furr et al., 2006; Heimberg et al., 2010; Hinds et al., 2015; Orcutt et al., 2005; Ottenbreit & Dobson, 2004).

Clinical implications

Our results suggested that part of the effect of the traumatic impact of the COVID-19 pandemic on burnout and test anxiety levels in university students and on burnout levels in university professors can be explained by self-criticism and experiential avoidance. Hence, it is crucial to develop interventions that consider both variables and therapeutic work on the traumatic symptoms themselves.

Thus, the present study points to several clinical implications regarding the application of Compassion Focused Therapy (CFT; Gilbert, 2010), which focuses on reducing self-criticism levels and promoting all three flows of compassion. The aim would be to help individuals develop a self-compassionate attitude, relate to others in compassionate ways and be open to the compassion and kindness of others (Irons & Lad, 2017). Thus, critical points of the intervention would be developing compassionate skills and attributes to develop a self-to-self relationship based on warmth, kindness, and compassion towards the self, that will enable the individual to self-soothe, activating the soothing system to self-regulate and toning down distress and negative affect (Gilbert, 2005, 2010). Furthermore, it is crucial to work with the common blocks, fears, and resistances to compassion, since individuals experiencing trauma may have fearful or aversive responses to attempts at self-compassion (Gilbert, 2014; Lawrence & Lee, 2014), and fears of compassion have been reported to have an amplifying effect on the negative impact of the COVID-19 pandemic on mental health (Matos et al., 2021).

Research suggests that the three flows of compassion (Matos et al., 2021), and self-compassion when considered as a unidimensional construct (Jimenez et al., 2020; Kavakli et al., 2020), can be considered as protective factors against psychological distress in the context of the COVID-19 pandemic. Furthermore, self-compassion was found to be negatively

associated with self-criticism, and higher self-compassion levels have been linked to higher psychological well-being (Zeinivand et al., 2017). Moreover, self-compassion has been negatively associated with burnout levels (Zeinivand et al., 2017) and may act as a buffer against psychopathology (Brown & Ryan, 2003; Neff et al., 2007). CFT has a growing evidence base for its use in various difficulties (Leaviss & Uttley, 2014), namely in trauma interventions (e.g., Beaumont et al., 2012), and has proved to be effective in reducing the perceived stress during the COVID-19 pandemic (Wu, 2021) and experiential avoidance levels (Daneshvar et al., 2020). Hence, CFT could have an essential role in reducing university students' and professors' burnout levels and students' test anxiety levels.

In addition, the present study also points out clinical implications regarding the Acceptance and Commitment Therapy (ACT). The main goal of ACT is to promote psychological flexibility, building the ability to fully contact the present moment and accept private events, rather than resorting to experiential avoidance, to involve oneself in valued actions, thus committing to a more valued life (Hayes et al., 2006). Thus, ACT uses paradoxes, metaphors, mindfulness, and experiential exercises to have individuals face their feared private events and still choose to behave in a valued way, promoting a more valued life (Hayes et al., 1999; Harris, 2019). Furthermore, ACT has proven to be efficient in reducing experiential avoidance levels (Dalrymple & Herbert, 2007; Niles et al., 2014) and has proven to be a valuable intervention across a wide range of difficulties (Ruiz, 2010).

Finally, Tirch and colleagues (2014) proposed that compassion-focused techniques may expand the technical base of ACT according to its theoretical underpinnings. They linked the mindfulness component of self-compassion with the acceptance, defusion, and self-as-context aspects of ACT, as a form of flexible and focused attention; the common humanity component of self-compassion with the self-as-context feature of ACT, as a function of flexible perspective taking; and linked the self-kindness component of self-compassion with the authorship of chosen values and the committed actions to serve one's valued aims aspects of ACT. Thus, they considered compassionate flexibility as sensitivity to the presence of suffering in oneself and others, connected to the commitment and motivation to return one's attention to resources and the present to alleviate said suffering; the ability to flexibly shift perspective and develop a broader sense of self and others based on empathy and sympathy; the ability to disentangle oneself from the influence of one's thoughts, developing a noncondemning perspective, thus cultivating the willingness to tolerate the distress of oneself and others.

Therefore, both perspectives could be beneficial in future interventions, in helping university students and professors disentangle from self-critical thoughts, connecting to the present moment and learning how to contact with negative inner experiences, while maintaining a compassionate and kind relationship with themselves and others. These competencies could help individuals improve the ability to follow value committed actions, even in the presence of traumatic external events and painful inner experiences, that typically narrow behavioural repertoires (Tirch et al., 2014).

Limitations and Future Studies

The present study holds some limitations. For instance, due to its cross-sectional design, results can only be interpreted as an association and not as predictions that indicate causality. Thus, it would be relevant to replicate the study in a longitudinal design to better understand and draw causal conclusions about how the traumatic impact of the COVID-19 pandemic influences burnout and test anxiety levels, and whether self-criticism and experiential avoidance carry this effect. Additionally, we did not consider the effect of any protective factors, and thus, it might be pertinent to replicate this study, including the three flows of compassion, resilience, or social safeness, for instance. Furthermore, only community samples were considered, while it would be highly relevant to replicate the study in clinical samples. In addition, our study focused on two very particular samples, and further studies should consider the possibility of exploring the associations between the same variables in the general population. Moreover, in the protocol that participants filled online, we only considered self-report measures, thus basing our results on participants' self-descriptions. In further studies, the possibility of adding measures to control the effect of social desirability in protocol responses, or the usage of other evaluation methods, such as semi-structured interviews, or even other types of physiological well-being measurement such as heart rate variability, could be considered. Finally, although our professor sample was homogenous regarding participants' gender distribution, our student sample was uneven, as it was composed of mainly female participants. Thus, futures studies should consider more homogenous samples to further represent the male population. On the other hand, the professor sample was modest in size, and future studies should aim to recruit larger samples to safely extrapolate the results of their research. Finally, other sociodemographic factors not considered in this study, such as participants' socioeconomic level could be considered, to further study possible risk factors.

Conclusion and Contributions

Despite its limitations, this study adds valuable information to the current literature about the impact of the COVID-19 pandemic on psychopathology. The present study demonstrated that a higher traumatic impact of the COVID-19 pandemic was associated with higher levels of self-criticism, experiential avoidance and burnout in both university students and professors, and with higher test anxiety levels in university students. Additionally, this study was, to our knowledge, the first to indicate that self-criticism and experiential avoidance, while positively associated with each other, mediated the relationship between the traumatic impact of the COVID-19 pandemic and burnout levels in both university students and professors, and test anxiety levels in university students.

By including populations considered vulnerable in mental health matters, our study adds in relevance considering its implications. Thus, to safeguard mental health in these populations, in the context of the COVID-19 pandemic, compassion focused interventions and the Acceptance and Commitment Therapy should be considered, to reduce the traumatic impact of the COVID-19 pandemic, self-criticism, experiential avoidance, burnout levels in both university students and professors, and test anxiety in university students, while also promoting psychological well-being and reducing the long-term impact of the pandemic on these populations' mental health.

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