MESTRADO INTEGRADO EM MEDICINA – TRABALHO FINAL

CAROLINA NUNES SECO

PERFECTIONISM, SELF-GENERATED STRESS AND BURNOUT IN MEDICAL AND DENTISTRY STUDENTS

ARTIGO CIENTÍFICO ORIGINAL

ÁREA CIENTÍFICA DE PSICOLOGIA MÉDICA

Trabalho realizado sob a orientação de:

PROFESSSOR DOUTOR ANTÓNIO FERREIRA DE MACEDO

MESTRE MARIA JOÃO BRITO

Novembro/2022

"There is a crack in everything,

that's how the light gets in."

Leonard Cohen

Perfectionism, Self-generated stress and Burnout in Medical and Dentistry Students

Carolina Nunes Seco[1]

Faculty of Medicine, University of Coimbra, Portugal

Maria João Brito, MD[2]

Invited Assistant

Institute of Medical Psychology at Faculty of Medicine of Coimbra University and Department of Psychiatry of Coimbra Hospital and University Center, Portugal

António Ferreira de Macedo, MD, PhD[3]

Full Professor

Institute of Medical Psychology at Faculty of Medicine of Coimbra University and Department of Psychiatry of Coimbra Hospital and University Center, Portugal

[1] carolina_seco@hotmail.com
[2] maria.brito@fmed.uc.pt
[3] amacedo@ci.uc.pt

An abstract with parts of this work has been submitted for presentation as an poster at the 31st European Congress of Psychiatry, taking place from March 25th to 28th , 2023 in Paris, France.

Table of contents

Abbreviations

BTPS-SF - Big Three Perfectionism Scale – Short Form

CI - Confidence interval

Deperson - Depersonalization

EExhaust - Emotional exhaustion

Innef – Academic Inefficacy

M - Mean

MBI-SS - Maslach Burnout Inventory-Student Survey

NarcPerf - Narcissistic Perfectionism

RigPerf - Rigid Perfectionism

SCritPerf - Self-critical Perfectionism

SD - Standard Deviation

SGS - Self-generated stress

SGSS - Self-generated Stress Scale

Abstract

Introduction: Medical students are particularly vulnerable to stress and burnout, which affects more than 40% of this population of students. Perfectionism, a well-known trait in medicine students, has been linked to increased vulnerability to burnout, which in turn may have negative consequences for both students and patients. In this context, self-generated stress, that is also related to perfectionism, constitutes a supplementary stress load, generated by oneself, that makes coping difficult, leading to avoidance and increasing psychological distress. So far, literature has not explored the role of self-generated stress in the relationship between perfectionism and burnout.

Objective: To explore the relationships and influence pathways between perfectionism, burnout, and self-generated stress and to determine whether self-generated stress is a mediator factor in perfectionism and burnout' relationship.

Materials and Methods: A total of 447 medicine, dentistry and other healthcare students, completed an online self-report questionnaire, that included Maslach Burnout Inventory-Student Survey (MBI-SS), Big Three Perfectionism Scale – Short Form (BTPS-SF) and Self-Generated Stress Scale (SGSS).

Results: Total perfectionism and all of its three factors positively correlated to burnout and to all MBI-SS dimensions, with two exceptions: narcissistic and rigid perfectionism did not correlate to academic inefficacy. Perfectionism and all of its three dimensions also positively correlated to self-generated stress. Furthermore, self-generated stress was positively correlated to burnout. In mediation analyses, self-generated stress significantly mediated the relationships between perfectionism (rigid/narcissistic/self-critical) and burnout: as a partial mediator in self-critical perfectionism, and as a full mediator in narcissistic and rigid perfectionism. No significant gender differences were found in any of the variables under study.

Discussion: This study established, for the first time, the positive correlation between self-generated stress and burnout and highlighted the mediation role of self-generated stress in the relationship between perfectionism and burnout.

Conclusion: Our findings underline the importance of self-generated stress control management interventions in the prevention and treatment of burnout in medical students, especially in those with increased levels of perfectionism.

Keywords: Perfectionism; Burnout; Psychological stress; Health occupations students.

Resumo

Introdução: Os estudantes de medicina são particularmente vulneráveis ao stresse e *burnout*, os quais os afetam em mais de 40% dos casos. O perfecionismo constitui um traço de personalidade comum nestes estudantes e associa-se a maior vulnerabilidade para o *burnout*, o que, por sua vez, pode acarretar consequências negativas para os estudantes e para os próprios doentes. Neste contexto, o stresse auto-gerado consubstancia-se como um stresse originado pelo próprio, que prejudica as estratégias de *coping*, levando a comportamento de evitamento e potenciando a perturbação psicológica. Este stresse também está associado ao perfecionismo, mas até agora, a literatura não explorou o papel que tem na relação entre o perfecionismo e o *burnout*.

Objetivo: Explorar as relações entre perfecionismo, *burnout* e stresse auto-gerado e determinar se este último é fator mediador na relação perfecionismo-*burnout*.

Materiais e Métodos: Um total de 447 estudantes de Medicina, Medicina Dentária e da Escola Superior de Tecnologia da Saúde de Coimbra, responderam a um formulário online de autopreenchimento, que incluía as seguintes escalas validadas: Maslach Burnout Inventory-Student Survey (MBI-SS), Big Three Perfectionism Scale – Short Form (BTPS-SF) e Self-Generated Stress Scale (SGSS).

Resultados: O perfecionismo total e os três fatores do BTPS-SF correlacionaram-se positivamente com o *burnout* e com as respetivas dimensões do MBI-SS, com exceção de duas variáveis: tanto o perfecionismo narcisista como o perfecionismo rígido não se correlacionaram com a ineficácia académica. Adicionalmente, o perfecionismo e as suas respetivas dimensões apresentaram uma correlação positiva com o stresse auto-gerado. Por sua vez, o stresse auto-gerado correlacionou-se positivamente com o *burnout*. Nas análises de mediação, o stresse auto-gerado foi mediador significativo nas relações entre as três dimensões do perfecionismo e o *burnout*, tendo sido mediador parcial na relação perfecionismo autocrítico-*burnout* e mediador total nas relações perfecionismo narcisista-*burnout* e perfecionismo rígido-*burnout*. Não foram encontradas diferenças significativas entre géneros, em nenhuma das variáveis em estudo.

Discussão: Este estudo descreveu, pela primeira vez na literatura, uma correlação positiva entre stresse auto-gerado e *burnout*, e destacou o papel mediador do stresse auto-gerado, pelo efeito direto e indireto, na relação entre perfecionismo e *burnout*.

Conclusão: Este trabalho destaca a importância de desenvolver ferramentas direcionadas à gestão e controlo do stresse auto-gerado para intervir e possivelmente

prevenir o *burnout*, em estudantes de medicina e medicina dentária com elevado perfecionismo.

Palavras-Chave: Perfeccionismo; Esgotamento psicológico; Stresse psicológico; Estudantes de Ciências da Saúde.

Introduction

Many people in our societies are increasingly familiar with the word "stress". In fact, it has been recently documented that the levels of stress in general population are now higher than in the nineties.[1] The concept of burnout, which has been associated with stress, has emerged as a topic of interest in both scientific and grey literature.

Burnout is a syndrome characterized by a state of physical and emotional exhaustion, which occurs after an extended period of intense stress in professional or student practices.[2] This syndrome includes three dimensions: emotional exhaustion, depersonalization, and inefficacy. The emotional exhaustion component is a state of severe tiredness, lack of energy and feeling emotionally drained. The depersonalization component (also known as cynicism) can be described as negative and inappropriate attitudes towards others, emotional indifference, social detachment, and withdrawal in the workplace, as well as dehumanized perception of others and irritability. The inefficacy component (originally called reduced personal accomplishment) includes a sense of not being able to achieve one's own professional goals/demands associated with dissatisfaction, frustration, and low morale.

In which regards the development of these dimensions, exhaustion is often the first one to emerge, followed by cynicism that comes along as an attempt to cope with the exhaustion. However, it reveals to be an unsuccessful coping mechanism, as inefficacy arises, because the first two components determine ineffectiveness and lack of fulfillment.[3]

Furthermore, burnout is related to cognitive, physical, and emotional symptoms, such as: negative thoughts about oneself, reduced concentration, attention, and decision making; sleeping problems, muscle tension/pain, headaches, hypertension; depression, anxiety, apathy, and loss of humor.[4]

Medical students are a particularly vulnerable population to burnout, since they must balance an enormous number of tasks and demands, such as learning new knowledge at a frantic pace, managing strenuous training schedules, dealing with family and personal concerns, and reconciling those with demanding evaluations. In addition, there are also several other personal and study-related stressors to consider: sleep deprivation, lack of personal time and emotional distress arising from the daily contact with sick and dying patients.[5] As such, it is estimated that more than 40% of medical students suffer from burnout,[6] as well as a substantial number of dentistry students.[7] These students are at a higher risk of depression, anxiety, substance abuse[8,9] and suicidal ideation.[10]

However, the consequences affect not only the person who suffers from burnout but also those around them. As future physicians, we must consider patient wellbeing, as deterioration in the quality of care and errors in clinical decisions may occur due to burnout.[11]

Thus, burnout may be considered a public health and social problem, because of its high prevalence and negative consequences, in terms of health, patient care and economics.[12]

Furthermore, we are still in the aftermath of the COVID-19 pandemic. This global event has had a negative impact on medical students, possibly associated with social isolation, uncertainty, and concerns about financial and health issues.[13] Medicine and dentistry students also had to rapidly adapt to new methods such as online-learning and online-evaluations, and removal from clinical practice.[14,15]

The overall risk of burnout is associated with several contextual factors, but also individual features, such as some personality traits. On this topic, a positive association has been found between perfectionism and burnout[16,17] with the former being a risk factor for the later.[16]

Perfectionism is a personality trait characterized by the need and constant pursuit of flawlessness, with the rigid setting of excessively ambitious standards for oneself and for others.[18,19]

Perfectionism can be a double-edged sword. These characteristics can be adaptive and advantageous, as one tries to do their best and so they are more likely to be successful. However, this trait can also be maladaptive, when accompanied by a morbid fear of failure and excessive self-criticism that leads to an increased tendency to worry, ruminate[20] and catastrophize.[21] This has been made evident in research, highlighting the association between perfectionism and a range of psychopathological outcomes, such as anxiety,[22] suicidal ideation, suicide attempts,[23] depression[24] and eating disorders.[25]

Completing the medical curriculum is highly competitive and the study and practice tasks are extremely demanding, not only in the pregraduate phase, but also in the postgraduate specialization phase.[26] The sociological background of our societies, characterized by high competitive individualism and lower altruism can favor certain types of perfectionism.[27] In fact, high levels of perfectionism have been documented in medical students.[17]

Perfectionism is a complex psychological construct that is not new, but which, over the last two decades, has been the subject of diverse conceptualizations and

models. A novel model of perfectionism, which constitutes a kind of fusion of several previous models to which other more recent conceptual elements have been added, considers three higher-order factors: rigid perfectionism, self-critical perfectionism, and narcissistic perfectionism.[28]

Rigid perfectionism is the persistent and unshakable view that the self can and must be perfect.[28] It encompasses two facets: self-oriented perfectionism (believing that striving for perfection in oneself is central) and self-worth contingencies (the idea that self-worth depends on the achievement of perfection).

Self-critical perfectionism includes four facets: concern over mistakes, doubts about actions, self-criticism, and socially-prescribed perfectionism.[29] Concern over mistakes is the tendency to have negative reactions and feelings about setbacks or flaws in performance, interpreting these as personal failures. Doubts about actions is the persisting uncertainty about performance. Self-criticism is the tendency to evaluate one´s own performance in an overly negative manner. Socially-prescribed perfectionism is related to the belief that other people are harsh judges of one's actions, demanding perfection to concede their approval.

Narcissistic perfectionism subsumes four facets: other-oriented perfectionism, hypercriticism, entitlement, and grandiosity.[28] Other-oriented perfectionism is the tendency to expect an absence of faults from others. Hypercriticism is an overly critical attitude towards others. Entitlement is believing one is inherently deserving of differentiated and special treatment. Grandiosity implies being pretentious and feeling superior to others because of one´s self perfection.

When thinking about the relationship between burnout and perfectionism, especially with the latter's more maladaptive facets, one cannot help but wonder: how much of the stress experienced by perfectionists is actually brought upon by themselves?

This brings us to another concept: self-generated stress (SGS). SGS is defined as stress generated by oneself, adding strain to the pre-existing situation.[30] It consists of perceiving a task as more difficult and achievable than it really is. By thinking and acting in this manner, people create more stress for themselves and extend the stress experience.

In this process, there is an essential link between what people think and the experience of stress that is generated. It has been evidenced that thoughts can influence the levels of cortisol and alpha-amylase, with negative thoughts associated with increased levels of these hormones.[31]

SGS is also associated with low self-esteem,[32] social detachment, avoidance coping, and procrastination.[30] A possible reason for this last behavior is that as people perceive themselves as stress generators, they will be less likely to use problem-focused coping strategies because they underestimate their efficacy. Moreover, SGS is associated with perfectionism, psychological distress, negative affect, depression, and somatic symptoms.[30]

To our knowledge, this is the first study to investigate the relationship and influence pathways between perfectionism, burnout, and self-generated stress in medical and dentistry students. The aim of our work is to study the correlations between these three variables and analyze the role of SGS in perfectionism and burnout' relationship.

Our first hypothesis is that SGS is associated with burnout since it is related with higher levels of perceived stress and so more likely to lead to emotional exhaustion. Our second hypothesis is that SGS mediates the relationship between perfectionism and burnout, contributing to the already established association[16] between these last two variables.

The present study seeks to clarify the psychological processes leading to burnout and to guide the development of new strategies to prevent and manage this condition, especially in a group that is highly prone to both perfectionism and burnout – medical and dentistry students. By doing so, we hope to help both future physicians and the patients they care for, promoting the professionals' psychological wellbeing while improving standard of care.

Materials and Methods

<u>Procedure and Participants</u>

The majority of the participants were medicine and dentistry students, from several medical faculties of Portugal, recruited from January–February and June–July of 2021 and 2022. The sample also included students from Coimbra Health School, attending a diversity of courses related with healthcare, such as audiology, biomedical laboratory sciences, diet and nutrition, clinical physiology, medical imaging and radiotherapy, physical therapy, and health education. The students voluntarily answered to an online self-report google forms questionnaire, promoted through email, social media, and students' associations. All participants gave their informed consent and were guaranteed the confidentiality of their data.

The questionnaires included sociodemographic and academic variables, along with the Portuguese versions of the scales: Maslach Burnout Inventory-Student Survey (MBI-SS), Big Three Perfectionism Scale – Short Form (BTPS-SF), and Self-Generated Stress Scale (SGSS).

The sample was composed of 447 participants: medicine students (58.8%; n = 263), students from Coimbra Health School (21.7%; n = 97) and dentistry students (19.5%; n = 87). The majority of these were recruited from the University of Coimbra (44.1%; n = 197) and Polytechnic of Coimbra (8.7%; n = 39). It also included students from University of Porto (4.7%; n = 21), University of Cabo Verde (2.5%; n = 11), among others. Just about three quarters of medical students (72.5%; n = 324) were in their pre-clinical years (1st–3rd year).

Out of the total 447 students, 352 (78.7%) were female. Age ranged from 17 to 35, with a mean age of 20.96 (± 2.88) years old. More than half of the participants were up to 20 years old (n = 77; 51.7%). The vast majority was Portuguese (99.6%; n = 391), but the sample also included participants from Cabo Verde (9.2; n = 41) and Brazil (1.2; n = 8), among others. All students were fluent in the Portuguese language.

<u>Measures</u>

All questionnaires applied in Portuguese samples demonstrated good reliability and good validity (construct and concurrent). The internal consistency coefficients (Cronbach's alpha), related with the present sample, are given in Table 1.

Perfectionism

The BTPS-SF is a short version of the BTPS (Big Three Perfectionism Scale) and consists in a 16-item self-report questionnaire, using a five-point Likert scale, that evaluates three higher-order global factors (rigid perfectionism, self-critical perfectionism, and narcissistic perfectionism). BTPS-SF was proved to have acceptable model fit and strong test-retest reliability.[33] Portuguese version of BTPS-SF has been validated.[34]

Burnout

The Maslach Burnout Inventory-Student Survey (MBI-SS)[35] is a version of the Maslach Burnout Inventory, and it consists of a 15-item self-report questionnaire that assesses the frequency of students' certain emotions and feelings. The aim is to measure three factors: exhaustion, disengagement, and academic efficacy. The Portuguese version[36] demonstrated good model fit to data and adequate construct validity and reliability for the three-factor structure of burnout. In another study,[37] the overall burnout measure also showed a good fit.

Self-Generated Stress

The Self-Generated Stress Scale (SGSS)[30] is a 7-item self-report questionnaire, with five response options, that evaluates the tendency to think that oneself adds more stress to their own life. The Portuguese version of SGSS[38] showed good model fit to data, good internal consistency, and good validity (construct and convergent-divergent), in a study carried out with a sample composed of medicine and dentistry students.

Data Analysis

Descriptive, t-test and Pearson correlation analyses were conducted using IBM® SPSS® Statistics, version 27. To the descriptive analysis, parametric measures of central tendency (mean) and dispersion (standard deviation) were used. Due to the big sample size and the central limit theorem, we used parametric measures, regardless of normality.[39] Student's t-test was also applied to compare the mean scores of the variables between genders. Pearson's correlation coefficient was used to investigate if the independent, dependent, and mediator variables were correlated to each other. When assessing the internal consistency (totals and dimensions), Cronbach's α coefficients were used. A value of this coefficient greater than 0.7 is usually required to consider the variables reliable, however when applying to subscales with less than 10 items, a value of 0.5 is sufficient.[40]

The mediation analyses were performed using PROCESS macro (Model 4.1)[41] for SPSS®. The PROCESS macro uses the bootstrapping method, which calculates confidence intervals for direct and indirect effects of variables and maximizes power, being robust against non-normality. These analyses examined the mediator role of SGS in the relationship between perfectionism (rigid/narcissistic/self-critical) and burnout. The direct effect represents the influence pathway between the independent (perfectionism) and the outcome variable (burnout), while the mediator remains unaltered. The indirect effect represents the impact of the mediator variable (SGS) on this original association. If zero is not contained within the confidence interval (CI) of the indirect effect, the difference between the total and direct effects is not zero and thus the indirect effect is significant.

Results

<u>Descriptive Analysis</u>

Table 1 presents the descriptive data (central tendency and dispersion) and the internal consistency coefficients (Cronbach's alpha) for each variable and scale under study.

Table 1. Descriptive statistics and internal consistencies.

Variables	M	SD	Min-Max	Asymmetry	SD Asymmetry	Kurtosis	SD Kurtosis	α Cronbach
RigPerf	12.16	4.04	4-21	-.150	.115	-.699	.230	.843
NarcPerf	13.54	4.54	6-24	.120	.115	-.919	.230	.672
SCritPerf	20.04	5.43	6-30	-.410	.115	-.376	.230	.837
PerfectT	45.74	11.58	16-70	-.341	.115	-.447	.230	.876
EExhaust	15.50	6.17	0-30	.228	.115	-.578	.230	.888
Deperson	8.57	6.28	0-24	.628	.115	-.450	.230	.912
Innef	17.98	5.87	1-36	-.127	.115	.003	.230	.794
BurnoutT	42.05	14.44	5-82	.177	.115	-.260	.230	.891
SGS	23.04	5.37	7-35	-.285	.115	-.026	.230	.834

Note: **M** - Mean; **SD** - Standard Deviation; **RigPerf** - Rigid Perfectionism; **NarcPerf** - Narcissistic Perfectionism; **SCritPerf** - Self-critical Perfectionism; **PerfectT** - Total Perfectionism; **EExhaust** - Emotional exhaustion; **Deperson** - Depersonalization; **Innef** – Academic Inefficacy; **BurnoutT** – Total Burnout; **SGS** - Self-generated stress.

Comparison by gender

The mean comparison of all variables by gender revealed no significant differences (p>.05) (Table 2).

Table 2. Comparison by gender.

Variables	Female (n=352; 78.7%)		Male (n=95; 21.3%)		t	p
	M	SD	M	SD		
RigPerf	12.30	4.11	11.63	3.76	-1.441	.150
NarcPerf	13.61	4.57	13.28	4.43	-.611	.542
SCritPerf	20.30	5.50	19.11	5.09	-1.906	.057
PerfectT	46.21	11.71	44.02	10.96	-1.637	.102
EExhaust	15.66	6.28	14.91	5.77	-1.052	.293
Deperson	8.41	6.29	9.19	6.20	1.076	.283
Innef	18.03	5.89	17.78	5.81	-.367	.714
BurnoutT	42.09	14.69	41.87	13.56	-.132	.895
SGS	23.15	5.39	22.62	5.32	-.848	.397

Note: **M** - Mean; **SD** - Standard Deviation; **RigPerf** - Rigid Perfectionism; **NarcPerf** - Narcissistic Perfectionism; **SCritPerf** - Self-critical Perfectionism; **PerfectT** - Total Perfectionism; **EExhaust** - Emotional exhaustion; **Deperson** - Depersonalization; **Innef** – Academic Inefficacy; **BurnoutT** – Total Burnout; **SGS** - Self-generated stress.

Correlation Analysis

Table 3 presents the Pearson´s correlation coefficients between the variables under study. The magnitude of these correlations was interpreted using Cohen's criteria, that considers values higher than 0.10 as low, higher than 0.30 as moderate, and higher than 0.50 as high.[42] All variables correlated significantly with each other (p<.01), except academic inefficacy, which did not correlate significantly with rigid and narcissistic perfectionism.

Table 3. Pearson's correlation coefficients between the variables.

	1	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*
1 **RigPerf**	1								
2 **NarcPerf**	.402**	1							
3 **SCritPerf**	.735**	.418**	1						
4 **PerfectT**	.851**	.728**	.889**	1					
5 **EExhaust**	.268**	.183**	.404**	.355**	1				
6 **Deperson**	.222**	.155**	.404**	.328**	.529**	1			
7 **Innef**	NS	NS	.224**	.126**	.264**	.494**	1		
8 **BurnoutT**	.236**	.144**	.439**	.345**	.765**	.862**	.734**	1	
9 **SGS**	.437**	.267**	.596**	.537**	.368**	.355**	.252**	.414**	1

Note: **p<.01; **NS** - Not significant; **RigPerf** - Rigid Perfectionism; **NarcPerf** - Narcissistic Perfectionism; **SCritPerf** - Self-critical Perfectionism; **PerfectT** - Total Perfectionism; **EExhaust** - Emotional exhaustion; **Deperson** - Depersonalization; **Innef** – Academic Inefficacy; **BurnoutT** – Total Burnout; **SGS** - Self-generated stress. **Colors:** orange – moderate correlation coefficient; light orange – high correlation coefficient.

Mediation Analyses

Table 4 presents the summary of the mediation analyses, with the values of direct and indirect effects. In these analyses the variables are considered as follow: independent variables – each of the three dimensions of perfectionism; dependent variable – burnout; mediation variable – SGS.

Table 4. Direct and indirect effects of the mediation models.

					Bootstrapping BC 95% CI	
MODEL		*Coefficient*	*SE*	*p*	*Lower*	*Upper*
1		**PREDICTOR: Rigid perfectionism**				
	Direct effect c'	.2447	.1712	.1537	-.0918	.5812
	Indirect effect c	.5992	.096		.4226	.8028
2		**PREDICTOR: Narcissistic perfectionism**				
	Direct effect c'	.1153	.1425	.4188	-.1647	.3954
	Indirect effect c	.3439	.0643		.2274	.4772
3		**PREDICTOR: Self-critical perfectionism**				
	Direct effect c'	.7950	.1380	.000	.5237	1.0662
	Indirect effect c	.3736	.0838		.2095	.5384
Note: **SE** – standard error						

The first model (Figure 1) tested whether self-generated stress mediated the relationship between rigid perfectionism and burnout.
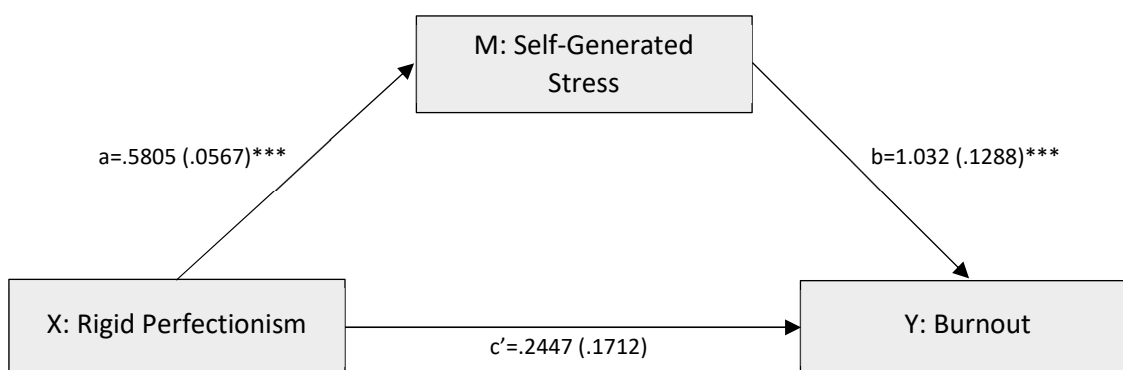

Figure 1. Simple mediation model, with rigid perfectionism as the predictor. Numbers represent unstandardized coefficients. Numbers in parentheses represent standard errors. ***p<.001.

The model shows that the direct effect of rigid perfectionism on burnout was not significant (*p*=.1537). Table 4 indicates that the indirect effect was 0.5992 and statistically different from zero (95% CI: .4226 to .8028). This model explained 17.51% of burnout variance (F=47.13, p<.001).

The second model (Figure 2) tested whether self-generated stress mediated the relationship between narcissistic perfectionism and burnout.
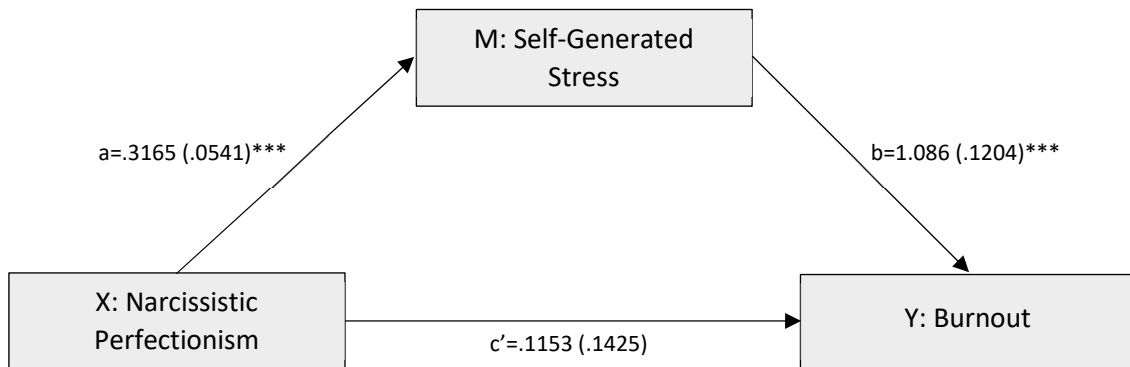

Figure 2. Simple mediation model, with narcissistic perfectionism as the predictor. Numbers represent unstandardized coefficients. Numbers in parentheses represent standard errors. ***p<.001.

The direct effect of narcissistic perfectionism on burnout was not significant (p=.4188). The indirect effect was 0.3439 and statistically different from zero (95% CI: .2274 to .4472) (Table 4). This model explained 17.25% of burnout variance (F=46.29, p<.001).

The third model (Figure 3) tested whether self-generated stress mediated the relationship between self-critical perfectionism and burnout.
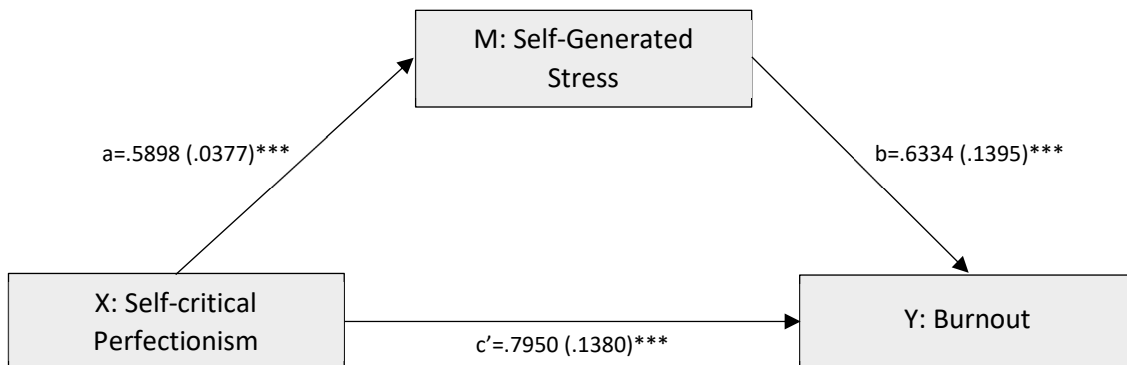

Figure 3. Simple mediation model, with self-critical perfectionism as the predictor. Numbers represent unstandardized coefficients. Numbers in parentheses represent standard errors. ***p<.001.

The direct effect of self-critical perfectionism on burnout was significant (effect=.7950; SE=.1380; t=5.7598; p<.001). The indirect effect was 0.3736 and statistically different from zero (95% CI: .2095 to .5384) (Table 4). This model explained 22.89% of burnout variance (F=65.92, p<.001).

Discussion

This study sought to unravel the relationship between SGS and burnout and to clarify the impact of SGS in the relationship between perfectionism and burnout. Both first hypothesis - that SGS is associated with burnout - and second hypothesis - that SGS mediates the relationship between perfectionism and burnout - were confirmed. What is new and original in this study is the evidence that perfectionism increases vulnerability to burnout through the SGS effect.

We began by analyzing gender differences in the variables' distribution (perfectionism, burnout and SGS) and found no significant differences. Despite the controversy in literature, these results are in line with other research that have documented no significant gender differences in perfectionism,[43] and no[44] or small[45] gender differences in burnout among endocrinologist and clinical psychologists, respectively.

In what follows, we will summarize and interpret our further findings.

Perfectionism and Burnout

Regarding perfectionism and burnout, we found them to be correlated positively. Among the three higher-order global factors of perfectionism, the self-critical dimension revealed the highest correlation with burnout (moderate magnitude), followed by rigid and lastly narcissistic perfectionism (these last two with low magnitude correlations). These results add knowledge to Hill and Curran's meta-analysis,[16] by using a different multidimensional perfectionism scale, and corroborate Pereira et al. work,[17] highlighting that self-critical factor is one of the most important dimensions of perfectionism in the relationship between perfectionism and burnout.

Additionally, we analyzed both perfectionism and burnout dimensions. All the three dimensions of perfectionism were positively correlated to emotional exhaustion and depersonalization, again with self-critical perfectionism having the strongest relationship (moderate magnitude). However, rigid and narcissistic perfectionism did not correlate with academic inefficacy, only self-critical perfectionism did. In other words, individuals with high levels of rigid and narcissistic perfectionism, despite feeling emotional exhaustion and depersonalization (low magnitude correlations), did not tend to evaluate themselves as academic ineffective, in the absence of self-critical perfectionism.

One possible explanation for this is that perfectionists who score higher in rigid and narcissistic perfectionism and lower in the self-critical kind may experience less

emotional exhaustion and depersonalization, as suggested by our correlational analysis, so that their sense of academic efficacy might be preserved.

Another possible explanation might arise from the inherent facet structure of self-critical perfectionism. Rigid and narcissistic perfectionism may be less maladaptive when compared with the self-critical one, since perfectionistic concerns, known as the more maladaptive features of perfectionism,[46] are mostly included in self-critical perfectionism. Therefore, in individuals scoring higher in the rigid and narcissistic factors than in self-critical perfectionism, perceptions of self-efficacy are hindered by fewer concerns over mistakes and doubts about their actions. Finally, there is one last explanation for the fewer reports of inefficacy by narcissistic perfectionists. Narcissists hold themselves in high regard (they feel superior to others and believe in their right to special treatment) and thus possibly have an inflated self-esteem, resulting in estimating their work as more effective, which explains our findings. Moreover, they might feel that, despite the arduous work, their results are positive and counterbalance their struggle. Hence, they have a less intense feeling of emotional exhaustion and depersonalization, resulting in less preponderance of narcissistic perfectionism in burnout.

In the mediation models, self-critical perfectionism predicted burnout both directly and indirectly, through the mediation effect of SGS. These findings show that the influence of self-critical perfectionism on burnout does not depend on the concomitant effect of SGS, although the latter reinforces that effect. These individuals tend to be harsh critics of themselves and believe that others do the same (socially-prescribed criticism), being prone to overthinking and overly concerning themselves due to the fear of failure and others' non-acceptance. As such, they tend to strive relentlessly for goals while criticizing themselves for not being absolutely perfect, therefore generating further stress. As we discussed previously, other than the self-criticism and the socially-prescribed perfectionism facets, self-critical perfectionism also includes concerns over mistakes and doubts about actions. This tendency to harbor excessive concerns and doubts is related to rumination,[47] which is related to distress[48] and might ultimately trigger burnout on its own. This may help explain why SGS is only a partial mediator of the relationship between self-critical perfectionism and burnout.

In contrast, both rigid and narcissistic perfectionism did not lead to burnout directly, requiring full mediation by SGS. These findings suggest that these perfectionism factors do not have such a strong relationship with burnout as self-critical perfectionism. However, the tendency still remains, not directly because of the intrinsic characteristics of these dimensions, but because they might predispose to SGS.

Concerning rigid perfectionism, there is an inclination to think that the self must be perfect and that self-worth depends on how well they succeed on that endeavor. Thus, every task appears to be more difficult because it must be done perfectly, and every task has underlying stress related to the need of being perfect to prove self-value. So, these perfectionists suffer additional stress, produced by the self, and due to that are more likely to suffer from burnout.

Concerning narcissistic perfectionism, they expect to be treated extraordinarily well, due to their presented perfection. Hence, it is possible that in some circumstances, some stress-related cognitive processes are activated, such as SGS. For example, when narcissistic perfectionists are confronted with a less-than-outstanding reaction from others, they might experience feelings of being misunderstood and offended and at the same time they start thinking they are not doing enough, leading them to strive and push themselves harder. This results in perceiving more stress related to the fear of losing admiration from others and in addition triggering burnout.

Perfectionism and SGS

Perfectionism showed a positive relationship with SGS, corroborating previous data,[30] as well as its three higher-order factors. The self-critical dimension had the strongest correlation (high magnitude correlation), even stronger than total perfectionism (BTPS-SF), followed by rigid and then narcissistic perfectionism. All these results have some overlapping with those found in the correlations between perfectionism (and its three dimensions) and burnout, suggesting that self-critical perfectionism is the most deleterious dimension to psychological well-being, predisposing perfectionists to SGS and burnout. Conversely, narcissistic dimension has the less negative effect. Our findings add strength to the already established evidence that perfectionist concerns, which can globally be included in self-critical perfectionism, are strongly related to poor outcomes, as depression, anxiety, and stress,[49] and now also SGS and burnout.

SGS and Burnout

Concerning our first hypothesis, SGS presented positive correlation of moderate magnitude with burnout. Our findings highlight that students in a challenging role do not merely have to deal with stress and pressure imposed on them, by external demands, but they also make it worse for themselves, having to deal with SGS which can ultimately trigger burnout.

<u>Limitations and further research</u>

Our findings should be considered in light of the limitations of the study, such as: the cross-sectional study design - longitudinal studies would be preferable, to allow the establishment of causality and to account for the impact of temporal variability of SGS on burnout levels; the high proportion of female students – it can reduce the potential for generalizations, however this proportion is representative of the Portuguese population of medicine and dentistry students (about 5:1); the possibility of self-selection bias - students with higher levels of perfectionism, SGS and/or burnout were possibly more motivated to participate; the use of BTPS-SF – this short version did not allow the study of the ten lower order perfectionism facets, despite being advantageous for the participants for conditioning less fatigue; and the fact that the questionnaires were applied during the COVID pandemic – this changed students' lives significantly, as discussed before, so it is possible that these personal and academic circumstance changes have modified the way students perceive and manage their stress and perfectionism, possibly modifying their answers to the questionnaires.

We suggest the application of the same analyses with the substitution of BTPS-SF for BTPS, to study the relationships and influence pathways between perfectionism facets, burnout and SGS. Another possible study of interest is applying these analyses on medical residents, as they are also a very susceptible population to burnout and perfectionism. These might be promising works to improve understanding on the matter.

Conclusion

To our knowledge, this is the first study to examine the mediation role of SGS on medical students' perfectionism and burnout. Despite having some positive features, perfectionism also bears a significant detrimental impact on well-being and is a predisposing factor in burnout. This effect is mediated by cognitive processes, such as SGS, which has been a topic of interest in recent research.

We need a sustained effort to preserve the health of medical students and to reduce levels of burnout, since they are exposed to severely stressful environments. The current findings point out the potential benefits that individuals with high levels of perfectionism could experience from interventions focused on developing emotional management tools to reduce SGS.

Acknowledgements

I am grateful to everyone that contributed to this work.

To the students who agreed to participate.

To Professor António Macedo for the hours dispensed, the consideration and his always assertive answers.

To Doutora Maria João for her dedication when replying to my concerns and for applying her own perfectionism in the development of this work.

To Professora Ana Telma for the tireless effort and help.

To Diogo for being patient, kind and allowing me to find serenity.

To my father for his guidance, help and sacrifices.

To my mom for being my idol, my hero, my role model and my own strength, along with always being present to guide me through the storms. To have given me her hand, to have never let me fall, but even if I did, to catch me and help me rise again.

To all of them, I am deeply thankful.

References

1. Almeida DM, Charles ST, Mogle J, Drewelies J, Aldwin CM, Spiro A, et al. Charting adult development through (historically changing) daily stress processes. American Psychologist. 2020 May;75(4):511–24.

2. Maslach C, Leiter MP. Understanding the burnout experience: Recent research and its implications for psychiatry. World Psychiatry. 2016 Jun 1;15(2):103–11.

3. Lee RL, Ashforth BE. A meta-analytic examination of the correlates of the three dimensions of job burnout. Journal of Applied Psychology. 1996;81(2):123–33.

4. Teater M, Ludgate JW. Overcoming compassion fatigue: A practical resilience workbook. Whittlesey M, editor. United States of America: PESI Publishing & Media; 2014.

5. Mian A, Kim D, Chen D, Ward WL. Medical student and resident burnout: A review of causes, effects, and prevention. J Fam Med Dis Prev. 2018 Dec 31;4(4).

6. Frajerman A, Morvan Y, Krebs MO, Gorwood P, Chaumette B. Burnout in medical students before residency: A systematic review and meta-analysis. European Psychiatry. 2019 Jan 1;55:36–42.

7. Kwak EJ, Ji YA, Baek SH, Baek YS. High levels of burnout and depression in a population of senior dental students in a school of dentistry in Korea. J Dent Sci. 2021 Jan 1;16:65–70.

8. Jackson ER, Shanafelt TD, Hasan O, Satele D v., Dyrbye LN. Burnout and alcohol abuse/dependence among U.S. Medical Students. Academic Medicine. 2016 Sep 1;91(9):1251–6.

9. Lebensohn P, Dodds S, Benn R, Brooks AJ, Birch M, Cook P, et al. Resident wellness behaviors: relationship to stress, depression, and burnout. Fam Med. 2013 Sep;45(8):541–9.

10. Dyrbye LN, Thomas MR, Massie FS, Power D v., Eacker A, Harper W, et al. Burnout and suicidal ideation among U.S. medical students. Ann Intern Med. 2008 Sep 2;149(5):334–41.

11. Williams ES, Manwell LB, Konrad TR, Linzer M. The relationship of organizational culture, stress, satisfaction, and burnout with physician-reported error and suboptimal patient care: results from the MEMO study. Health Care Manage Rev. 2007 Jul;32(3):203–12.

12. Moffic HS, Levin RM, Rouse H. The History of Burnout in Society, Medicine, and Psychiatry. In: LoboPrabhu S, Summers RF, Moffic HS, editors. Combating physician burnout: a guide for psychiatrists. Washington, DC, USA: American Psychiatric Pub; 2019. p. 3–26.

13. Copeland W, McGinnis E, Bai Y, Adams Z, Nardone H, Devadanam V, et al. Impact of COVID-19 Pandemic on College Student Mental Health and Wellness. J Am Acad Child Adolesc Psychiatry. 2021 Jan 1;60(1):134-141.e2.

14. Papapanou M, Routsi E, Tsamakis K, Fotis L, Marinos G, Lidoriki I, et al. Medical education challenges and innovations during COVID-19 pandemic. Postgrad Med J. 2021 May 1;1–7.

15. Farrokhi F, Mohebbi SZ, Farrokhi F, Khami MR. Impact of COVID-19 on dental education- A scoping review. BMC Med Educ. 2021;21:587.

16. Hill AP, Curran T. Multidimensional perfectionism and burnout: A meta-analysis. Personality and Social Psychology Review. 2016 Aug 1;20(3):269–88.

17. Pereira AT, Brito MJ, Cabaços C, Carneiro M, Carvalho F, Manão A, et al. The protective role of self-compassion in the relationship between perfectionism and burnout in portuguese medicine and dentistry students. Int J EnvironRes Public Health. 2022 Feb 26;19(5):2740.

18. Stoeber J, Edbrooke-Childs JH, Damian LE. Perfectionism. In: Encyclopedia of Adolescence. Cham: Springer International Publishing; 2016. p. 1–7.

19. Macedo AF. SER OU NÃO SER (perfeito)? Perfecionismo e psicopatologia. Lisboa: Lidel; 2012.

20. Macedo A, Soares MJ, Amaral AP, Nogueira V, Madeira N, Roque C, et al. Repetitive negative thinking mediates the association between perfectionism and psychological distress. Pers Individ Dif. 2015 Jan 1;72:220–4.

21. Macedo A, Marques C, Quaresma V, Soares MJ, Amaral AP, Araújo AI, et al. Are perfectionism cognitions and cognitive emotion regulation strategies mediators between perfectionism and psychological distress? Pers Individ Dif. 2017 Dec 1;119:46–51.

22. Smith MM, Vidovic V, Sherry SB, Stewart SH, Saklofske DH. Perfectionistic concerns confer risk for anxiety symptoms: A meta-analysis of 11 longitudinal studies. Anxiety Stress Coping. 2018;31:4–20.

23. Smith MM, Sherry SB, Chen S, Saklofske DH, Mushquash C, Flett GL, et al. The perniciousness of perfectionism: A meta-analytic review of the perfectionism suicide relationship. J Pers. 2017 Jun 1;86:522–42.

24. Smith MM, Sherry SB, Mushquash AR, Saklofske DH, Gautreau CM, Nealis LJ. Perfectionism erodes social self-esteem and generates depressive symptoms: Studying mother-daughter dyads using a daily diary design with longitudinal follow-up. J Res Pers. 2017 Dec 1;71:72–9.

25. Bardone-Cone AM, Wonderlich SA, Frost RO, Bulik CM, Mitchell JE, Uppala S, et al. Perfectionism and eating disorders: current status and future directions. Clin Psychol Rev. 2007 Apr;27(3):384–405.

26. Slavin SJ. Medical Student Mental Health: Culture, Environment, and the Need for Change. JAMA. 2016 Dec 6;316(21):2195–6.

27. Stoeber J, Damian LE, Madigan DJ. Perfectionism - A motivational perspective. In: Stoeber J, editor. The psychology of perfectionism - theory, research, applications. 1st ed. Oxon: Routledge; 2018. p. 34–43.

28. Smith MM, Saklofske DH, Stoeber J, Sherry SB. The big three perfectionism scale: a new measure of perfectionism. J Psychoeduc Assess. 2016 Aug 3;34(7):670–87.

29. Dunkley DM, Zuroff DC, Blankstein KR. Self-Critical Perfectionism and Daily Affect: Dispositional and Situational Influences on Stress and Coping. J Pers Soc Psychol. 2003;84(1):234–52.

30. Flett GL, Hewitt PL, Nepon T. The self-generated stress scale: Development, psychometric features, and associations with perfectionism, self-criticism, and distress. J Psychoeduc Assess. 2020 Feb 1;38(1):69–83.

31. Engert V, Smallwood J, Singer T. Mind your thoughts: Associations between self-generated thoughts and stress-induced and baseline levels of cortisol and alpha-amylase. Biol Psychol. 2014 Oct 22;103:283–91.

32. Schiller M, Hammen CC, Shahar G. Links among the Self, Stress, and Psychological Distress during Emerging Adulthood: Comparing Three Theoretical Models. Self and Identity. 2016 May 3;15(3):302–26.

33. Feher A, Smith MM, Saklofske DH, Plouffe RA, Wilson CA, Sherry SB. The big three perfectionism scale–short form (BTPS-SF): Development of a brief self-report measure of multidimensional perfectionism. J Psychoeduc Assess. 2020 Feb 1;38(1):37–52.

34. Pereira A, Brito M, Marques C, Araújo A, Cabaços C, Macedo A. Portuguese version of the Big Three Perfectionism Scale - Short Form. In: Abstract submitted. 2023.

35. Schaufeli WB, Martinez IM, Pinto AM, Salanova M, Bakker AB. Burnout and engagement in university students: A cross-national study. J Cross Cult Psychol. 2002;33:464–81.

36. Maroco J, Tecedeiro M. Inventário de burnout de maslach para estudantes portugueses. Psicologia, Saúde e Doenças. 2009 Jul 9;10(2):227–36.

37. Manão A, Carneiro M, Carvalho F, Barros M, Cabaços C, Brito MJ, et al. Maslach Burnout Inventory – Students Survey Validation for Portuguese Medicine Students. presented at the 21st WPA World Congress of Psychiatry (Virtual), 18-21 October. 2021.

38. Brito MJ, Carvalho F, Vitória P, Amaral AP, Carneiro M, Cabacos C, et al. Portuguese validation of the Self-generated stress scale. European Psychiatry. 2022 Jun 1;65(S1):S663–4.

39. Elliott A, Woodward W. Statistical Analysis Quick Reference Guidebook with SPSS Examples. 1st ed. London: Sage Publications, Inc.; 2007.

40. Lane S, Raymond MR, Haladyna TM. Handbook of Test Development. 2nd ed. New York: NY: Routledge; 2016.

41. Hayes AF, Rockwood NJ. Conditional Process Analysis: Concepts, Computation, and Advances in the Modeling of the Contingencies of Mechanisms. American Behavioral Scientist. 2020 Jan 1;64(1):19–54.

42. Cohen J. Statistical Power Analysis. Curr Dir Psychol Sci. 1992 Jun 24;1(3):98–101.

43. Besser A, Flett GL, Hewitt PL. Perfectionistic Self-Presentation and Trait Perfectionism in Social Problem-Solving Ability and Depressive Symptoms. J Appl Soc Psychol. 2010;40(8):2121–54.

44. Wang J, Zhang L, Jiang F, Liu Y, Wang M, Wu Y, et al. Gender Differences in Burnout Among Endocrinologists in China. Front Psychol. 2022 Mar 1;13:1–7.

45.	Allwood CM, Geisler M, Buratti S. The relationship between personality, work, and personal factors to burnout among clinical psychologists: exploring gender differences in Sweden. Couns Psychol Q. 2022;35(2):324–43.

46.	Stoeber J, Otto K. Positive conceptions of perfectionism: Approaches, evidence, challenges. Personality and Social Psychology Review. 2006;10(4):295–319.

47.	Kaap-Deeder J van der, Soenens B, Boone L, Vandenkerckhove B, Stemgée E, Vansteenkiste M. Evaluative concerns perfectionism and coping with failure: Effects on rumination, avoidance, and acceptance. Elsevier. 2016 May 25;101:114–9.

48.	O'Connor DB, O'Connor RC, Marshall R. Perfectionism and psychological distress: evidence of the mediating effects of rumination. Eur J Pers. 2007 Jan 3;21:429–52.

49.	Smith MM, Saklofske DH, Yan G. Perfectionism, trait emotional intelligence, and psychological outcomes. Pers Individ Dif. 2015 Oct 1;85:155–8.

Annexes

Annex I
Ethics Committee

Of. Refª **146-CE-2020**

Data **25/11/2020**

C/C aos Exmos. Senhores

Investigadores e co-investigadores

Exmo. Senhor

Prof. Doutor Carlos Robalo Cordeiro

Director da Faculdade de Medicina de Universidade de Coimbra

Assunto: Pedido de parecer à Comissão de Ética - Projeto de Investigação autónomo (refª CE-149/2020).

Investigador(a) Principal: Ana Telma Fernandes Pereira

Co-Investigador(es): António João Ferreira de Macedo e Santos, Frederica Romana Fradique Namorado Ramalheira Carvalho, Carolina Sampaio Meda Cabaços, Mário Rui Sousa Carneiro e Ana Paula Amaral

Título do Projeto: *"Comburnout - Compaixão para a diminuição do burnout dos estudantes de medicina e de medicina dentária"*.

A Comissão de Ética da Faculdade de Medicina, após análise do projeto de investigação supra identificado, decidiu emitir o parecer que a seguir se transcreve:

"Parecer favorável".

Queira aceitar os meus melhores cumprimentos.

O Presidente,

Prof. Doutor João Manuel Pedroso de Lima

Annex II

Informed Consent

PROJETO COMBURNOUT

Compaixão para a diminuição do *burnout* dos estudantes de medicina e de medicina dentária

Convidamo-lo/a a participar neste estudo porque é estudante de medicina ou de medicina dentária.

A sua participação poderá contribuir para melhorar o conhecimento, a prevenção e o tratamento do burnout nos estudantes de medicina e medicina dentária.

Este estudo irá decorrer no Instituto de Psicologia Médica da Faculdade de Medicina da Universidade de Coimbra e foi aprovado pela Comissão de Ética da Faculdade de Medicina da Universidade de Coimbra (FMUC), de modo a garantir a proteção dos direitos, segurança e bem-estar de todos os participantes e a garantir prova pública dessa proteção.

Se aceitar participar, iremos solicitar o preenchimento de questionários de autorresposta cujas perguntas são sobre si e o modo como se tem sentido. O preenchimento demora cerca de 20 minutos.

Após submeter as suas respostas, poderemos ou não vir a convidá-lo/a a participar num programa de intervenção, denominado COMBURNOUT. Quer participe ou não, precisaremos de o/a voltar a contactar daqui a alguns meses, para solicitar que volte a preencher alguns questionários (menos do que os deste primeiro momento de avaliação). Por essa razão, iremos pedir-lhe os seus contactos.

A participação é voluntária e tem toda a liberdade de recusar ou de a abandonar. A sua participação não acarreta qualquer risco.

Se não estiver interessado/a em participar, a sua relação com os/as investigadores/as não será prejudicada.

Aos/às interessados/as em participar, pedimos que leiam atentamente todas as questões e respondam segundo as instruções.

Os seus registos manter-se-ão confidenciais e anonimizados de acordo com os regulamentos e leis aplicáveis. Todas as pessoas ou entidades com acesso aos seus dados pessoais estão sujeitas a sigilo profissional.

Agradecemos desde já a participação!

CONTACTOS

Se tiver perguntas relativas aos seus direitos como participante deste estudo, deve contactar:

Presidente da Comissão de Ética da FMUC,

Azinhaga de Santa Comba, Celas – 3000-548 Coimbra Telefone: 239 857 707
e-mail: comissaoetica@fmed.uc.pt

Se tiver questões sobre este estudo deve contactar: comburnout.fmuc@gmail.com

Contactos dos investigadores:
Ana Telma Pereira: apereira@fmed.uc.pt, 964404676 Carolina Cabaços: 914665651
Mário Carneiro: 910209698
Frederica Carvalho: 913377985

CONSENTIMENTO INFORMADO:

Declaro que recebi informação acerca das circunstâncias da minha participação neste projeto de investigação. Li atentamente e compreendi a informação do Consentimento Informado. Concordo com as condições e compreendo que a participação neste estudo é voluntária e confidencial e que os dados recolhidos serão analisados apenas para fins de investigação.

Reservo o direito de desistir da minha participação a qualquer momento.

☐ Dou o meu consentimento informado e desejo prosseguir para o estudo.

Annex III

Questionnaire

Já preencheu este inquérito (online), num ano lectivo anterior?

SIM   NÃO

Por favor, indique o seu e-mail: _____
e o número de telemóvel (facultativo): _____

QUESTÕES SOBRE SI

Género: Masculino   Feminino   Outro

Qual a sua idade?

Nacionalidade:
_____

Instituição de Ensino Superior
Por ex., Universidade de Coimbra
_____

Curso:
_____

Ano de escolaridade:

1º ano   2º ano   3º ano   4º ano   5º ano   6º ano

Em que país reside?
_____

Estuda na cidade em que reside?
_____

Com quem reside?

Sozinho/a   Com pais/familiares   Com amigos/colegas em apartamento/casapartilhada

Residência universitária

Possui um curso superior concluído? Sim   Não

Indique com que frequência é sujeito a avaliações no semestre atual?

Semanal   Quinzenal   Mensal   Trimestral   Semestral

Como se autoavalia relativamente ao seu desempenho académico?

Péssimo   Mau   Razoável   Bom   Excelente

Como classifica o seu grau de satisfação com o curso atual?

Péssimo   Mau   Razoável   Bom   Excelente

Já pensou em abandonar o seu curso atual?

Nunca   Raras vezes   Algumas vezes   Muitas vezes   Muitíssimasvezes

Se respondeu afirmativamente à última questão, indique por favor o(s) motivo(s) pelo(s) qual(ais) pensou abandonar o seu curso.

Questões financeiras   Exigência excessiva do curso   Problemas

familiares   Problemas de saúde   Falta de vocação   Dificuldade em lidar

com o stress

QUESTÕES SOBRE A SUA MANEIRA DE SER

BIG3

Para cada afirmação, assinale um *círculo,* à volta do número que melhor corresponde ao seu grau de *acordo* ou *desacordo,* desde 1 a 5. Use a seguinte escala de avaliação.

Utilize a seguinte escala de resposta:

Discordo muito	Discordo	Não concordo, nem discordo	Concordo	Concordo muito
1	2	3	4	5

9.	Toda a gente espera que eu seja perfeito.	1	2	3	4	5
10.	Tenho uma forte necessidade de ser perfeito.	1	2	3	4	5
19.	Critico-me duramente quando faço alguma coisa que não esteja perfeita.	1	2	3	4	5
20.	Para me sentir bem comigo preciso constantemente de procurar alcançar a perfeição.	1	2	3	4	5
22.	Tenho dúvidas sobre tudo o que faço.	1	2	3	4	5
25.	Sinto incerteza em relação à maior parte das coisas que faço.	1	2	3	4	5
26.	Fico desapontado comigo quando não faço as coisas de modo perfeito.	1	2	3	4	5
28.	Tenho o direito de ser tratado de forma especial.	1	2	3	4	5
29.	Para mim, é importante ser perfeito em tudo o que tento fazer.	1	2	3	4	5
30.	Sinto-me insatisfeito com as outras pessoas, mesmo quando sei que estão a tentar fazer o seu melhor.	1	2	3	4	5
31.	As outros admiram secretamente a minha perfeição.	1	2	3	4	5
33.	Espero que as outras pessoas abram uma exceção às regras para mim.	1	2	3	4	5
39.	Espero que os que me são próximas sejam perfeitos.	1	2	3	4	5
40.	A opinião que tenho de mim está ligada a ser perfeito.	1	2	3	4	5
41.	Fico frustrado quando os outros cometem erros.	1	2	3	4	5
44.	Cometer um pequeno erro, mesmo que pequeno, iria incomodar-me.	1	2	3	4	5

EBM

As afirmações seguintes são referentes aos sentimentos/emoções de estudantes em contexto escolar. Leia cuidadosamente cada afirmação e decida sobre a frequência com que se sente da forma descrita:

0 - Nunca; 1 - Quase Nunca; 2 - Algumas vezes; 3 – Regularmente; 4 - Bastantes vezes; 5 - Quase Sempre; 6 - Sempre

	0	1	2	3	4	5	6
Exaustão Emocional							
1. Os meus estudos deixam-me emocionalmente exausto.							
2. Sinto-me de 'rastos' no final de um dia na universidade.							
3. Sinto-me cansado quando me levanto de manhã e penso que tenho de enfrentar mais um dia na universidade.							
4. Estudar ou assistir a uma aula deixam-me tenso.							
5. Os meus estudos deixam-me completamente esgotado.							
Descrença							
1. Tenho vindo a desinteressar-me pelos meus estudos desde que ingressei na universidade.							
2. Sinto-me pouco entusiasmado com os meus estudos.							
3. Sinto-me cada vez mais cínico relativamente à utilidade potencial dos meus estudos.							
4. Tenho dúvidas sobre o significado dos meus estudos.							
Eficácia Profissional							
1.Consigo resolver, de forma eficaz, os problemas que resultam dos meus estudos.							
2. Acredito que participo, de forma positiva, nas aulas a que assisto.							
3. Sinto que sou um bom aluno.							
4. Sinto-me estimulado quando alcanço os meus objetivos escolares.							
5.Tenhoaprendidomuitasmatériasinteressantesduranteomeu curso.							
6. Durante a aula, sinto que consigo acompanhar as matérias de forma eficaz.							

ESAG

Abaixo encontra-se uma lista de afirmações sobre o stress que é habitual as pessoas experienciarem. Estamos interessados em perceber a sua perceção acerca dos fatores de stress e dos problemas na sua vida. Por favor, leia cada item e classifique-o de acordo com o quanto de aplica a si.

Discordo FORTEMENTE	Discordo	Não concordo, nem discordo	Concordo	Concordo FORTEMENTE
1	2	3	4	5

1. É habitual colocar-me em situações que são mais stressantes do que o necessário.	1	2	3	4	5
2. As formas como tenho lidado com o stresse, na minha vida, muitas vezes resultaram em stresse adicional, para mim.	1	2	3	4	5
3. Parece que crio uma série de problemas para mim.	1	2	3	4	5
4. Muito do stresse que sinto deve-se às escolhas que faço.	1	2	3	4	5
5. Por vezes, parece que tenho um talento especial para tornar uma situação stressante muito pior.	1	2	3	4	5
6. Parte do meu stress vem das minhas decisões de estar ligado/a a certas pessoas.	1	2	3	4	5
7. Os meus erros tendem a tornar as coisas bastante mais stressantes, para mim.	1	2	3	4	5

Por favor, verifique se respondeu a todas as questões.

Muito obrigada pela sua colaboração.

Ana Telma Pereira, Carolina Cabaços, Frederica

Carvalho, Mário Carneiro Instituto de Psicologia Médica,

Faculdade de Medicina da Universidade de Coimbra (Pólo I)

Rua Larga, 3004-504 COIMBRA

apereira@fmed.uc.pt; comburnout.fmuc@gmail.com

239857759; 964404674; 913377985

Annex IV

Abstract European Congress of Psychiatry

EPA 2023 - Late-Breaking Abstract

Personality and Personality Disorders

EPA2023LB-4489

Narcissistic Perfectionism does not lead to an increased perception of Academic Efficacy

Maria J. Brito[* 1, 2], Carolina Seco[3], Ana Telma Pereira[4], António Macedo[3]
[1]Coimbra University Hospital Centre, [2]Institute of Medical Psychology, [3]University of Coimbra, Coimbra, Portugal[4] University of Coimbra, Coimbra, ,

What is your preferred presentation method?: e-Poster Viewing

Do you have a significant financial interest, consultancy or other relationship with products, manufacturer(s) of products or providers of services related to this abstract?: No

Introduction: The relationship between narcissism and burnout has been explored in the literature with somewhat inconsistent findings. Though most studies have found a positive correlation between Narcissism and Burnout, some have failed to establish a significant link between the two, while others have even reported a protective role of narcissism against burnout.

In our previous work regarding the link between perfectionism and student burnout, we found that when using the Big Three model of Perfectionism, Narcissistic Perfectionism had only a weak connection to burnout, requiring full mediation by low-self compassion.

We hypothesized that this might be due to an exaggerated sense of Academic Efficacy in Narcissistic Perfectionists, which would compensate for some of the emotional exhaustion and depersonalization brought upon by their efforts to gain the admiration of others.

Objectives: To investigate the link between Narcissistic Perfectionism and Academic Efficacy, and its impact on burnout levels.

Methods: A sample of 1080 students from healthcare-related courses (80,7% females; mean age=21.13±3.023; range: 17-41) filled in an online questionnaire including, among others, the Portuguese Version of BIG3-SF and MBI-SS. Correlational analysis was performed.

Results: Contrary to our initial theory, Narcissistic Perfectionism did not significantly correlate with Academic Efficacy (r=0.011, p=0.728), although it had significant correlations with the other burnout dimensions and total burnout score.

Conclusions: This work disproved our initial hypothesis, suggesting that narcissistic perfectionism may be associated with other nefarious dimensions that cancel out the effects of grandiosity and inflated self-esteem on the perception of academic efficacy. This negative finding could possibly be further explored by using a psychometric instrument that differentiates between maladaptive and adaptive facets of narcissism.

Disclosure of Interest: None Declared