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Rolul credinţelor iraţionale şi al stresului perceput în dezvoltarea atitudinilor disfuncţionale în rândul studenţilor

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# THE ROLE OF IRRATIONAL BELIEFS AND PERCEIVED STRESS IN THE DEVELOPMENT OF DYSFUNCTIONAL ATTITUDES AMONG STUDENTS

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**Abstract**

The literature raises concerns in terms of the psychological functioning of the students. Their well-being can be impaired by some problems they may face, like academic, personal, financial, or social ones. Cognitive theories support the fact that at the origin of the psycho-emotional consequences lies a dysfunctional thinking pattern. It can determine how people perceive events or their attitudes regarding the situations they experience. All these aspects play an important role in mental health. Thus, the first objective of the present study was to identify possible associations between dysfunctional attitudes, irrational beliefs, and perceived stress among students. The second objective was to test whether the relationship between irrational beliefs and dysfunctional attitudes is explained by perceived stress, through a mediation model. In this research, 148 students filled in three psychological scales that measure the following constructs: dysfunctional attitudes, irrational beliefs, and perceived stress. In general, the results emphasized negative and weak associations between attitudes and cognitions ($r$ = -.265, $p$ = .001) and perceived

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stress and attitudes ($r$ = -.167, $p$ = .043), but a positive relationship between cognition and perceived stress ($r$ = .312, $p$ < .001). Also, the mediation analysis showed that there are misgivings that perceived stress does explain the relationship between irrational cognitions and dysfunctional attitudes. These preliminary findings could be an initial step in the educational environment to improve the beliefs and attitudes assessment among students by targeting them as important elements.

**Keywords**: dysfunctional attitudes, irrational beliefs, mediation model, perceived stress.

***Rezumat***

*Literatura de specialitate indică aspecte problematice în ceea ce priveşte funcţionarea psihologică a studenţilor. Starea de bine a acestora poate fi afectată de anumite probleme cu care se pot confrunta, precum cele academice, personale, financiare sau sociale. Teoriile cognitive susţin faptul că la originea consecinţelor psiho-emoţionale se află un model de gândire disfuncţional. Acesta poate determina modul în care oamenii percep evenimentele sau atitudinile lor cu privire la situaţiile pe care le trăiesc. Toate aceste aspecte joacă un rol important în privinţa sănătăţii psihice. Astfel, primul obiectiv al prezentului studiu a fost acela de a identifica posibilele asocieri între atitudinile disfuncţionale, credinţele iraţionale şi stresul perceput în rândul studenţilor. Al doilea obiectiv a fost acela de a testa dacă relaţia dintre credinţele iraţionale şi atitudinile disfuncţionale este explicată de stresul perceput, prin intermediul unui model de mediere. În cadrul acestei cercetări, 148 de studenţi au completat trei scale psihologice care măsoară următoarele constructe: atitudini disfuncţionale, credinţe iraţionale şi stres perceput. În general, rezultatele au evidenţiat asocieri negative şi slabe între atitudini şi cogniţii (r = -.265, p = .001) şi stres perceput şi atitudini (r = -.167, p = .043), dar o relaţie pozitivă între cogniţii şi stres perceput (r = .312, p < 0.001). De asemenea, analiza de mediere a arătat că există reticenţe cu privire la faptul că stresul perceput explică relaţia dintre cogniţiile iraţionale şi atitudinile disfuncţionale. Aceste constatări preliminare ar putea reprezenta un prim pas în practica educaţională pentru a îmbunătăţi evaluarea credinţelor şi atitudinilor în rândul studenţilor, caracterizându-le ca elemente importante.*

***Cuvinte-cheie***: *atitudini disfuncţionale, cogniţii iraţionale, model de mediere, stres perceput.*

# 1. Introduction

## 1.1. Mental health in university students

Going to university is an important event in the life of every young adult. However, not all students adapt functionally to this new chapter in their lives. Research identifies several problems that students may face (Sheldon et al., 2021), some of which are associated with the early academic demands of student life (Rodgers & Tennison, 2009). Among the challenges, they encounter the following aspects: lower grades than they had in high school, specific problems with certain courses, the amount of workload in academic assignments, or difficulties with time management. Adjustment problems do not only manifest in the academic environment, but represent emotional and behavioral symptoms, social and sleep problems, and somatic manifestations (Rodgers & Tennison, 2009), and the way students cope with them may have a major impact on their well-being.

In addition to university-related factors, students' impaired well-being may be due to other factors. Sheldon et al. (2021) identified seven categories of risk factors, which are: health-related factors, psychological factors, traumatic event-related factors, relationship factors, socio-demographic factors, lifestyle-related factors, and a final category of education-related factors. Problems associated with each of these represent a vulnerability for the development of a variety of mental health problems.

Among the most common mental disorders in students are eating disorders, compulsive disorders, depression, posttraumatic stress disorder, sleep disorders, and anxiety disorders (Kang et al., 2021; Ramón-Arbués et al., 2020). Moreover, Auerbach et al. (2016) reported that 20.30% of students met the Diagnostic and Statistical Manual of Mental Disorder (DSM; APA, 2013) criteria for a disorder in the past 12 months, of whom only a part accessed specialist psychological services.

Students with depression and anxiety tend to exhibit dissatisfaction with social activities, worry about academic evaluations, have concerns about their career choices, and worry excessively about the future (Kumaraswamy, 2013). Emotional problems they face also include a feeling of inferiority to others, difficulties with cognitive processes, insignificant events that make them angry

or irritated, sad, depressed, or anxious for unimportant reasons, feeling uncomfortable, and having problems with their sleep or their appetite. They also have cognitive processing difficulties in terms of concentration and remembering (Kumaraswamy, 2013). Depressive symptoms commonly seen in them include loneliness, feelings of hopelessness, problems with parents, or even relationship difficulties. Special attention is addressed to those students who have experienced suicidal ideation or suicidal behavior, where loneliness and feelings of helplessness are reported as the most prevalent features (Furr et al., 2001).

Anxiety symptoms also have a major impact on quality of life and academic achievement. They are closely related to irrational cognitions and perceptions of life events, factors that contribute to the development of these problems (Bridges & Harnish, 2010; Hofmann, 2007). The presence of anxiety can influence memory, concentration, how activities are organized, and attention (Killu, Marc & Crundwell, 2016). Anxiety disorders are characterized by avoidance and worry mechanisms (APA, 2013), and these students tend to avoid academic tasks or worry about them. Furthermore, findings from a study of a sample of students with social anxiety symptoms revealed that these students tend to evaluate others' anxiety symptoms as less attractive and as having less strength of character (Purdon et al., 2001). Thus, as they are more likely to evaluate those with anxiety symptoms negatively, they may have a misjudgment of how their anxiety symptoms are evaluated by others. People with social anxiety are known to have biased perceptions of events and to negatively interpret social stimuli (Stopa & Clark, 2000). These beliefs can have both behavioral consequences, such as avoiding certain contexts or people, and also emotional consequences, such as an increased level of worry or fear. In a retrospective study (Van Ameringen et al., 2003) conducted on a sample of adults with a diagnosis of an anxiety disorder, the participants who reported that they did not enjoy school, felt nervous at school and in the classroom, and felt intimidated by others (both teachers and students). The main reason for their disliking school has been reported to be their difficulty to speak in front of peers.

Therefore, special attention is addressed to this particular segment of students, as concerns regarding students' mental health are justified by the consequences it may have on their psychological well-being. Markoulakis and Kirsh (2013) divided these problems into internal and external difficulties.

Internal difficulties are mainly related to both physical and mental health, manifesting in high levels of stress, difficulties in emotional regulation, poor symptom control management, difficulty concentrating, low self-esteem, and others. On the other hand, external problems refer to problems generated by the way students cope with the demands of the university environment, such as being on time with assignments or attending their classes.

Considering these maladaptive consequences, both in terms of students' mental health and their academic performance and well-being as a whole, it is desirable to identify the underlying mechanisms to address them early. Psychological factors, more specifically, information processing is one of the factors which underlie the development and maintenance of mental disorders (Beck & Haigh, 2014).

### 1.2. Dysfunctional information processing in students

The way the information processing system works can make the difference between adaptive and maladaptive functioning (Beck & Haigh, 2014). For example, when the information processing system is impaired, it affects a person's thinking, the content of that person's thinking, as well as how that person makes interpretations of his or her everyday experiences. In such instances, information processing can represent a psychological vulnerability. Psychological vulnerability, such as cognitive vulnerability, is one of the major predictors of mental health problems in students. These include negative ruminations, negative coping style, cognitive bias, maladaptive cognitive schemas, irrational cognitions, maladaptive problem-solving strategies, negative attributions, and others (Beck & Haigh, 2014; Sheldon et al., 2021; Vîslă et al., 2016).

Irrational cognitions are strongly related to distress and a range of mental disorders including depressive disorders, anxiety disorders, or dysfunctional emotions such as anger or guilt (Vîslă et al., 2016). These beliefs are related to rigid, unrealistic requirements about the self, others, and the world, and their interconnection with feelings and behaviors makes irrational beliefs an important cognitive mechanism that can explain psychological disturbance (David, Lynn & Ellis, 2009). The term rational/irrational beliefs define them as illogical, empirically unsupported, and unhelpful to the individual. The

literature differentiates between two types of cognitions: hot cognitions, which are evaluative and refer to how cold cognitions are processed, and cold cognitions, which are more accessible and surface cognitions (David, Lynn & Ellis, 2009). Each of these contributes to how the individual interprets and reacts to personal experiences. The term irrational belief is encountered in rational-emotive therapy (REBT). According to the REBT model, in this therapeutic framework, beliefs are related to events that people experience, reflecting the person's perception of that event. Rational interpretation will lead to adaptive, functional consequences, whereas an irrational interpretation leads to maladaptive consequences. There are four main categories of such irrational beliefs, specifically low frustration tolerance, catastrophizing, global evaluation, and demandingness (David, Lynn & Ellis, 2009). Regardless of the irrational belief type, the consequences are all maladaptive.

Regarding students, like any other individual, their interpretation of events can be both rational and irrational. When their interpretation of events is irrational, it has a negative impact on their psychological functioning. Several studies conducted in schools or universities with students have shown that there is a positive relationship between irrational beliefs and psychological problems (Al-Salameh, 2011; Chan & Sun, 2021; Fives et al., 2011; Frost et al., 1995). It has been found that there is an association between irrational beliefs among students and the risk of developing depression, anxiety, and increased stress (Chan & Sun, 2021). Also, in another study that investigated irrationality in the case of students, it was found that individuals with inflexible perfectionism are concerned about the mistakes they make, tend to react more negatively from an emotional perspective, have lower levels of self-confidence, and they also have an irrational belief of demandingness about what they should have done as compared to those with lower levels of such perfectionism concerns (Frost et al., 1995). The presence of irrational beliefs has also an impact on self-confidence, with a statistically significant positive relationship between these variables among students (Al-Salameh, 2011). Findings from another study conducted on students indicated that an increased presence of specific rational beliefs in students during an academic assessment period and a decrease in specific irrational beliefs have been associated with an increase in functional distress and a decrease in dysfunctional distress (David & Montgomery, 2011). Students that come from lower-income families or those studying at a university for a longer duration (five years) tend to have more irrational beliefs (Chan & Sun, 2021).

Irrational beliefs are related to several cognitive processes. The literature supports the existence of a relationship between perceived stress and irrational cognitions (Yıldız, Baytemir & Demirtaş, 2018). Perceived stress is the extent to which a person interprets the experiences they go through as unpredictable, uncontrollable, or overloading (Cohen, Kamarck & Mermelstein, 1983). Beck and Haigh (2014) argued that a biased perception is retained in memory and it can lead to the appearance of cognitive processing structures. Each of these structures is strengthened by exposure to a particular type of event, leading to psychological symptoms as a result of how it is processed.

Another factor with an impact on the development of psychological problems is attitudes. They guide thoughts, which further play a role in the occurrence of certain behaviors, both adaptive and maladaptive. These attitudes may appear in the form of a condition, or rules the person has, and their development is achieved by organizing the information they record from the environment (Beck & Haigh, 2014). The literature indicates that dysfunctional attitudes are closely related to psychological problems such as depression (Qin et al., 2020).

As presented previously, information processing plays an important role in the mental health of students. Besides this important factor, several other factors contribute to the development of a vulnerability or the protection of the individual against unpleasant events. Of these, some factors, such as irrational beliefs, can be modified so that the person develops a rational interpretation of events, with positive consequences for mental health. Several interventions have been studied to treat mental health problems faced by students, including a therapeutic intervention aimed at modifying irrational beliefs (Barnett et al., 2021; Conley et al., 2017; Huang et al., 2018; Schlarb, Friedrich & Claßen, 2017).

Among the most effective treatments are interventions based on cognitive-behavioral principles, which are successful both in treating symptoms associated with depressive disorders and also for symptoms associated with anxiety disorders, with effective modification of attention/perception. In terms of prevention-oriented interventions, particularly for high-prevalence disorders such as depression and anxiety disorders, interventions based on a cognitive-behavioral approach have also been successful. In addition to these, interventions involving mindfulness and meditation techniques have also proven effective (Barnett et al., 2021; Huang et al., 2018).

Successful interventions for students dedicated to increasing well-being and decreasing psychiatric symptoms can be developed by understanding the mechanisms of change that maintain and trigger psychological problems. Through the contribution to the literature made by this research, it is possible to gain a better understanding of the cognitive mechanisms underlying the maintenance of psychopathology, thus contributing to an improvement of existing intervention and prevention programs or the development of new ones.

For this purpose, the present study aims to investigate the relationship between some of these mechanisms. More precisely, one of the objectives of the present study was to identify possible associations between dysfunctional attitudes, irrational beliefs, and perceived stress among students. Given the state of the literature on the relationship between perceived stress and irrational beliefs and dysfunctional attitudes (Beck & Haigh, 2014; Yıldız, Baytemir & Demirtaş, 2018), the second objective was to test whether the relationship between irrational beliefs and dysfunctional attitudes is explained by perceived stress, through a mediation model.

## 2. Methods

### 2.1. Participants

A total of 148 Romanian students were recruited via invitations sent through university campuses. They were included in the final sample, with ages ranging between 19 and 45 years old ($M = 22.25$, $SD = 5.32$). The inclusion criteria consisted of a minimum age of 18 years old and to have student status in Romania. There were no other restrictions related to demographic characteristics.

### 2.2. Variables and measures

The variables included in this study were dysfunctional attitudes, irrational beliefs, and perceived stress. They were measured with self-report instruments. The variables and assessment tools are detailed below.

***Dysfunctional attitudes*** were measured with the Dysfunctional Attitude Scale (DAS; Weissman, 1979; Weissman & Beck, 1978), one of the most frequently used questionnaires to assess this variable (Beck et al., 1991). This instrument is intended to measure attitudes that may be predisposing the individual to the development of depressive symptoms and contains 40 items related to the person's dysfunctional attitudes (schemas by which the person constructs their reality). An example of an item is the following affirmation: "*If I criticize the way someone does something and they become angry or depressed, this means I have upset them.*" The scale uses answers rated on a seven-point Likert-type scale ranging from *strongly agree* (1) to *strongly disagree* (7). The total score was obtained by summing up all the answers. The score indicates the extent to which dysfunctional attitudes define a person's thinking. Precisely, the results obtained in other studies following the administration of the DAS to a Romanian sample are, in general, consistent and include also the established norms for the Romanian version of the scale (Macavei, 2006).

***Rational and irrational beliefs*** were measured with the Attitudes and Beliefs Scale, short form (ABSs; DiGiuseppe et al., 1988), one of the most valid and widely used instruments to assess this variable through 72 affirmations (Bernard, 1998). ABSs consist of the following three factors: belief processes, content/context information, and rational/irrational beliefs. The first factor named belief processes has four levels which are demandingness, self-worth or self-downing, low frustration tolerance, and awfulizing. The second factor contains content/context information and has three levels represented by beliefs about affiliation, achievement, and comfort. The third factor defines the item as rational or irrational and evaluates irrationality, rationality, demandingness, self-downing, frustration tolerance, and awfulizing. Studies showed that ABSs have high internal consistency and discriminative validity for the Romanian population, central to rational emotive behavior theory (Macavei, 2002). This form included items that measured irrational beliefs, like: "*I can't stand not doing well at tasks that are important to me.*" Items were rated on a five-point scale, ranging from *strongly disagree* (1) to *strongly agree* (5). The total score was obtained by summing all the answers, usually evidencing an increased level of irrationality.

***Perceived stress*** was measured with the Perceived Stress Scale (PSS; Cohen, Kamarck & Mermelstein, 1983). It was designed to measure the

degree to which life events are perceived as stressful, the level felt by the person in the last month. The Romanian version of the instrument owns adequate psychometric properties for evaluating stress levels (Dumitrescu et al., 2014). PSS includes 10 items, rated on a five-point Likert-type scale ranging from *never* (0) to *very often* (4). An example of an item is the following statement: "*In the last month, how often have you felt difficulties were piling up so high that you could not overcome them?*". The total score was obtained by summing all the answers.

### 2.3. Procedure

Between November and December 2021, 350 invitations were sent through email to students who registered voluntarily; the online submissions were collected using three questionnaires. Only 148 of them responded and met the eligibility criteria (42.28%). Participants were asked to rate their level of dysfunctional attitudes, irrational cognitions, and perceived stress through the following instruments: DAS, ABSs, and PSS. For this type of data collection, submission of the answers was not possible without giving all answers. Consequently, there was no missing data in the present database.

Concerning ethical considerations, we took into account best practices in research with human subjects. Specifically, participants were not allowed to follow the survey without agreeing to the terms outlined in the informed consent form, which contains their rights and obligations, including the possibility to refuse participation or renouncing at any point in the research. Also, students received course credit for participation in research.

### 2.4. Statistical approach

The statistical analyses were conducted in IBM SPSS Statistics, version 23. The conditions of normality and homogeneity assumption were verified through asymmetry indicators and the description of the distribution curve (skewness and kurtosis; Popa, 2008). The Levene test was used to test the homogeneity of variance ($p > .05$). The condition of independence was ensured by controlling the measurement of a participant's behavior regarding

the possible influence of another behavior. Moreover, correlation analysis was used to identify the possible relationships between dysfunctional attitudes, irrational beliefs, and perceived stress. To test the mediation model, the PROCESS macro in IBM SPSS Statistics, version 23 was used (Hayes, 2017), with irrational beliefs as the independent variable, dysfunctional attitudes as the dependent variable, and perceived stress as the mediating variable (Figure no. 1). More precisely, similar to a linear regression model,

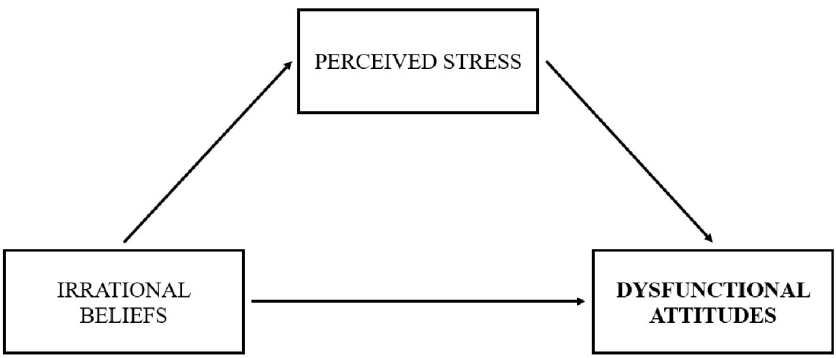


***Figure no. 1.*** *The mediation model*

there is a predictor variable and an outcome variable; for a mediation model, a mediator variable has been added to the relationship between the predictor and the outcome. The predictor variable is also called the antecedent variable because it occurs before the mediator or the outcome. The outcome can be called the consequent variable because it is the consequence of the process that the model describes. The mediator variable is both an antecedent variable (to the outcome) and a consequent variable (to the predictor). In this way, the path from the predictor to the mediator is called ***a***, the path from the mediator to the outcome is called ***b***, and the path from the predictor to the outcome is called ***c'***. The indirect effect of the predictor on the outcome through the mediator is obtained by multiplying ***a*** and ***b***. The total effect (***c***) represents the sum of the direct effect (***c'***) and the indirect effect (***a*b***), that is (***a*b***) + ***c'***.

## 3. Results

In the current study, of the 148 students included, 126 were women (85.10%). The demographic data showed that 124 participants (83.80%) come from urban areas, four (2.70%) are married, 146 participants (98.60%) were bachelor students, and 40 participants (27.00%) were employed. In order to use the parametric tests, the conditions of normality and homogeneity assumptions were verified. Related to the normality condition, the distribution satisfied this one in terms of the descriptors of shape (skewness and kurtosis). Also, the homogeneity of variance was fulfilled, through the Levene test ($p > .05$). The descriptive statistics for the variables included in the study are presented in Table no. 1. Results revealed high scores incorporating the mean for dysfunctional attitudes and low mean scores for irrational beliefs and perceived stress. All results are discussed at length in the Discussion section.

***Table no. 1.*** Descriptive statistics for self-reported responses

| Measures | *M* | *SD* | *Skewness* | *Kurtosis* |
|---|---|---|---|---|
| ABSs | 22.34 | 6.91 | -0.02 | -0.57 |
| DAS | 192.92 | 43.79 | -0.47 | -0.60 |
| PSS | 19.01 | 2.85 | 0.40 | 0.22 |

*Note. Notes*. M = mean; SD = standard deviation; ABSs = The Attitudes and Beliefs Scale, short form; DAS = The Dysfunctional Attitude Scale; PSS = Perceived Stress Scale. The standard error for skewness values was 0.20 and for kurtosis, it was 0.40.

The first aim of the study was to identify possible associations between dysfunctional attitudes, irrational beliefs, and perceived stress in the academic environment. Specifically, the irrational beliefs and perceived stress were positively correlated ($r = .312$, $p < .001$). Contrary to the results published in the literature (e.g., Macavei, 2006; Martin, Kazarian & Breiter, 1995), negative and weak correlations were found between attitudes and irrational beliefs ($r = -.265$, $p = .001$), and between perceived stress and dysfunctional attitudes ($r = -.167$, $p = .043$). Table no. 2 reports the correlations between all variables.

***Table no. 2.*** *Correlations between the study's variables*

| Measures | ABSs | DAS | PSS |
|---|---|---|---|
| ABSs | — | -.265** | .312** |
| DAS | -.265** | — | -.167* |
| PSS | .312** | -.167* | — |

*Notes.* *$p < .05$; **$p < .01$.

The second objective of this study was to test a mediation model, more precisely whether irrational beliefs transmitted their effect on the level of dysfunctional attitudes through perceived stress. The indirect effect of irrational beliefs on the level of dysfunctional attitudes through perceived stress was the product of *a* and *b* indicators. The effect of irrational beliefs on perceived stress was $a = 0.13$, $t(146) = 3.97$, $p < .001$. The effect of the mediator on dysfunctional attitudes was $b = -1.43$, $t(145) = -1.11$, $p = .268$. Moreover, the indirect effect was negative ($a*b = -.18$), meaning that as the level of irrational beliefs increases, the level of dysfunctional attitudes decreases. The literature defines this result as an inconsistent mediation because the negative effect of the exposure on the outcome is completely due to the indirect mechanism operating through the mediator (MacKinnon, Fairchild & Fritz, 2007). The estimated direct effect of irrational beliefs on dysfunctional attitudes in the presence of the mediator was $c' = -1.50$, $t(145) = -2.82$, $p = .005$. Also, the total effect was $c = -1.68$, $t(146) = -3.33$, $p = .001$, emphasizing the effect of irrational beliefs on dysfunctional attitudes, without perceived stress in the model. Given the fact that the direct effects were greater than the total effect (Hayes & Rockwood, 2017), we cannot say that perceived stress acted as a unique mediator in this model, even if the estimated direct effect is statistically significant (Little, Bovaird & Card, 2007).

## 4. Discussion and conclusions

This study aimed to investigate the relationships between dysfunctional attitudes, irrational beliefs, and perceived stress, in the last part of the pandemic period, but also to test a mediation model on whether the effect of irrational beliefs on dysfunctional attitudes was explained by perceived stress, amongst students. The results have shown the following important aspects: (1) a positive relationship between irrational beliefs and perceived stress; (2) negative associations between attitudes and irrational beliefs, but also between perceived stress and dysfunctional attitudes; and (3) a mediation model that emphasized the effect of irrational beliefs on dysfunctional attitudes through perceived stress, which is not supported by the collected data.

In general, student life is a significant period of development, characterized by transition and a great deal of stress, marking the period of transition from adolescence to adulthood. It is filled with uncertainty and complexity, full of personal and professional changes. Stress is a subjective feeling and appears in situations that require a modification in the person's physical status, his/her behavior, and cognitions (Selye, 1976). When a student faces demands, he/she cognitively appraises his/her resources, coping skills, and ability to respond to demands (Lazarus & Folkman, 1984). Therefore, the main result of this study showed a positive relationship between irrational beliefs and perceived stress. Possible explanations include the following two aspects: (1) irrational beliefs present an important role in predicting how individuals react emotionally to stressful situations (David & Szentagotai, 2006); and (2) irrational beliefs can lead to maladaptive emotional reactions and experiencing a high level of stress (David, Lynn & Ellis, 2009). Furthermore, the participants in this study showed a high level of dysfunctional attitudes when completing the questionnaires. Similarly, in a study based on the emotional distress profile of the Romanian population, Opriş and Macavei (2007) found quite high scores of participants for dysfunctional attitudes and emotional distress. As possible explanations, the literature suggests that high dysfunctional attitudes are associated with the use of denial and self-devaluation as psychological defense mechanisms for the Romanian population (Craşovan, 2014). Also, Weich, Churchill and Lewis (2003) emphasized that increased dysfunctional attitudes may be a risk factor for the onset (but not the outcome) of anxiety and depression episodes, usually comorbid.

Contrary to the expectation, negative associations were found between dysfunctional attitudes and irrational beliefs, but also with perceived stress. Similar results were obtained by Bratu and Rizeanu (2017), in a study of the Romanian population based on the relationship between stress, dysfunctional attitudes, and depression. Also, a longitudinal study implemented by Pedrelli et al. (2008) highlighted the possibility that dysfunctional attitudes may represent an advantage, most likely temporary, during periods of low stress or high mastery. During periods of relative mastery, irrational beliefs may increase self-esteem and enhance mood. Furthermore, the authors pointed out that many of the statements in the DAS questionnaire are conditional statements (e.g., "*I am nothing if a person I love does not love me*"). Such beliefs can lead to a higher risk of depression when unforeseen situations arise in personal or professional life. Although vulnerability for depression may develop over the long term (Butler, Hokanson & Flynn, 1994; Roberts & Kassel, 1997), this may help explain how higher dysfunctional attitudes may predict fewer symptoms of depression during periods of low stress, arguments identified in cognitive-vulnerability research (Beevers & Meyer, 2004; Clark & Beck, 1999).

Another important result of this study is represented by the lack of data support for the mediation model, which shows that the association between irrational beliefs and dysfunctional attitudes could not be explained by perceived stress. A presumable explanation could be that other variables (e.g., pre-existence of mental disorders/symptoms, cognitive skills, self-esteem, resilience, coping strategies) could influence this relationship. For example, Yıldız, Baytemir and Demirtaş (2018) showed the mediating role of self-esteem in the relationship between irrational beliefs and perceived stress. In this direction, testing other mediation models sustained by the literature could bring important contributions.

These findings have several theoretical and practical contributions related to the educational environment. The existence of an association between irrational beliefs and perceived stress necessitates further investigation related to the consequences of this relationship in the student's personal and academic situations. Specifically, the study suggests that a high level of irrational beliefs is associated with increased perceived stress, thus determining students to adopt avoidance or maladaptive behaviors, even in

the educational environment. Thus, this finding may help counselors and psychologists to assist students adopt safer and adaptive behaviors in academic situations. Also, the current research may have implications in assessing the levels of stress and irrational beliefs and their reduction with psychological support.

Despite these useful implications, several limitations need to be mentioned. Firstly, the study included just a self-report assessment, based on a cross-sectional research design. Even though this method was preferred for convenience reasons (due to the pandemic period), further research should be oriented to a longitudinal and/or experimental study. Secondly, the mediation model proposed in this study was a preliminary one and it did not explain the dynamics through which irrational beliefs have an effect on the level of dysfunctional attitudes through perceived stress. A possible explanation of this result could be that this mediator is not enough to explain the study's relationship. Thus, there are high chances that other variables (e.g. pre-existence of mental disorders/symptoms, cognitive skills, self-esteem, resilience, coping strategies) could explain the effect of irrational beliefs on dysfunctional attitudes and need to be studied in future directions. Thirdly, the results may be representative only of students and cannot be generalized among other types of populations. Thus, future research should focus on other types of samples (for example, primary, secondary, or high school pupils) to obtain significant and representative findings.

Due to the crisis generated by the COVID-19 pandemic, irrational beliefs and stress are rising, developing mental health problems among students. Academic pressures coupled with everyday stressors related to responsibilities as a student can precipitate the first occurrence of mental health problems or an exacerbation of already established symptoms. The consequences of this situation are more concerning because public education related to mental health is missing. Thus, the present research provided an analysis of the main associations between dysfunctional attitudes, irrational beliefs, and perceived stress in the case of students. It is important to emphasize that this is a preliminary study, so these variables need to be assessed and decreased with caution so that this will benefit the students. Given that mental health issues have a high incidence among students, mental health providers need to have an in-depth understanding of how prevalent these problems

can be and of the different needs of students. Therefore, strategies have to be put in place to improve treatment-seeking and engagement among students and their families. This means offering them professional assistance and helping them deal directly with the symptoms they are experiencing after an event.

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