

## ***"They will discover I'm a fraud!"*** **The Impostor Syndrome Among Psychology Students**

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This research's primary purpose was to explore the prevalence of the impostor syndrome and its associated factors among 130 Romanian psychology students ( $M = 21.77$  years,  $SD = 3.51$ , 84.6% females). Our results indicate that 56.15% of the study participants experienced high and intense impostor syndrome aspects. More specifically, students who perceived themselves as impostors presented high levels of psychological distress and procrastination. We also explored the link between moral identity and the impostor syndrome and found that students who experienced the syndrome ascribe higher importance to moral values than non-*impostors*. We tested a prediction model for the impostor syndrome, using depression, anxiety, procrastination, moral self, moral integrity, and several demographic variables as predictors (i.e., age, gender, study year, and living area). Our prediction model explained 33.9% of the impostor syndrome's variance. Finally, we tested two moderation models concerning the relationship between the impostor syndrome, procrastination, anxiety, and depression. The results suggest that the relationship between procrastination and anxiety was moderated by impostor syndrome. We discuss the importance of these findings in designing effective intervention strategies to fight students' impostor syndrome.

*Key words:* education, impostor syndrome, anxiety, depression, procrastination, moral identity

### **Introduction**

The research related to the impostor syndrome or impostor phenomenon began in 1978 when Clance and Imes observed a cognitive and be-

havioral pattern in a group of respected female professionals and students with excellent academic results. During psychotherapy sessions, group interactions, and lectures, they noticed that, although they had excellent academic and professional results, they could not inter-

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nalize their success, competence, and talent (Clance & Imes, 1978; Clance & O'Toole, 1987; Langford & Clance, 1993). They called the specific pattern of cognitions and behaviors *the impostor syndrome*, characterized by erroneous beliefs that the individuals in question are not intelligent, and in fact, they "tricked" others, making them believe so. These beliefs are amplified by the fear of being "discovered" and by the tendency to attribute one's success to external causes such as luck, effort, charm, or being in the right place at the right time. These aspects, together with the inability to internalize their success and attribute it to their competence, abilities, and intelligence, define the impostor phenomenon (Chrisman, Pieper, Clance, Holland, & Glickauf-Hughes, 1995; Clance & Imes, 1978; Clance & O'Toole, 1987; Clance, Dingman, Reviere, & Stober, 1995; Langford & Clance, 1993).

Though it is not conceptualized as a mental disorder within the DSM (*Diagnostic and Statistical Manual of Mental Disorders*) or the ICD (*International Classification of Diseases*), the most commonly reported clinical symptoms of people suffering from the impostor syndrome are generalized anxiety, lack of self-confidence, low self-esteem (Chae, Piedmont, Estadt, & Wicks, 1995; Langford & Clance, 1993; Schubert & Bowker, 2017), low perception of their competence, autonomy, and sense of connection with others. These symptoms explain *impostors'* fear of new tasks and challenges (Vaughn, Taasoobshirazi, & Johnson, 2019). Additionally, people suffering from the impostor syndrome usually experience depression and frustration with the inability to meet self-imposed standards (Bernard, Dollinger, & Ramaniah, 2002; Clance & Imes, 1978; Clance & O'Toole, 1987; Clance, Dingman, Reviere, & Stober, 1995), as they fear both success and failure (De Vries, 2005; Rohrmann, Bechtoldt, & Leonhardt, 2016). Individuals who experience impostor syndrome engage

in excessive efforts to solve tasks and duties, which arise from the fear of being discovered as a fraud. They generally make external causal attributions to their success, such as luck, effort, charm, manipulation, even the naivety of those around them (Clance & Imes, 1978; Vaughn, Taasoobshirazi, & Johnson, 2019).

For individuals who experience the impostor syndrome, fear of failure or success usually arises when they encounter new duties or challenges. Thus, to protect their self-esteem, they typically use two coping mechanisms: perfectionism and procrastination (Clance & Imes, 1978; Ferrari & Thompson, 2006; Rohrmann, Bechtoldt, & Leonhardt, 2016; Ross, Stewart, Muge, & Fultz, 2001). On the one hand, they tend to work excessively, to perfection, to compensate for their fears; on the other hand, they procrastinate precisely due to these fears (Clance & O'Toole, 1987; De Vries, 2005; Rohrmann, Bechtoldt, & Leonhardt, 2016).

Though for a long time, the impostor syndrome was considered to be more frequent (and typical) among women (Clance & Imes, 1978), and further studies confirmed this assumption (e.g., Cokley et al., 2015; Kumar & Jagacinski, 2006; Patzak, Kollmayer, & Schober, 2017), recent studies no longer consider this phenomenon a gender-typical issue (September, McCarrey, Baranowsky, Parent, & Schindler, 2001; Sonnak & Towell, 2011). However, inconsistencies continue to appear, and this might be explained by the importance of socio-cultural factors, which might enhance impostorism among women due to gender-role conservatism or similar cultural specificities (e.g., Breeze, 2018; LaDonna, Ginsburg, & Watling, 2018).

### **Psychological Distress, Procrastination, and Impostorism**

Depression and anxiety are two defining elements of the impostor syndrome, and several

researchers confirmed the significant, positive link between them (Chrisman, Pieper, Clance, Holland, & Glickauf-Hughes, 1995; Dudău, 2014; Kananifar et al., 2015; Kolligian Jr & Sternberg, 1991; Kumar & Jagacinski, 2006; Leonhardt, Bechtoldt, & Rohrmann, 2017; Ross, Stewart, Mugge, & Fultz, 2001; Wang, Sheveleva, & Permyakova, 2019).

Previous research also suggested a significant link between procrastination and impostor syndrome. Because of the high anxiety that *impostors* feel, they end up completing their tasks in two ways: either postponing the task or preparing intensely to accomplish it (Chae, Piedmont, Estadt, & Wicks, 1995; Sakulku, 2011; Thompson, Foreman, & Martin, 2000), achieving a temporary relief before re-entering the impostor circle (Thompson, Foreman, & Martin, 2000). It seems that academic procrastination generally leads to lower performance (Klassen, Krawchuk, & Rajani, 2008; Moon & Illingworth, 2005; Tice & Baumeister, 1997), but this delay may reduce anxiety and improve one's mood (Steel, 2007). However, this improvement seems to be temporary, students usually experience subsequent negative emotions (Lay & Schouwenburg, 1993).

Academic procrastination is specifically problematic because students usually get many assessments and deadlines for teaching projects or homework, and reducing anxiety and increasing positive mood through procrastination is not consistent over time, causing, in fact, psychological distress (Rice, Richardson, & Clark, 2012). Additionally, research has shown that when it comes to students, procrastination appears to reach peak levels in the middle of the semester and drops sharply before exam sessions (Moon & Illingworth, 2005).

### **Moral Identity and the Impostor Syndrome**

As a social construct, moral identity contains several moral characteristics that form the

basis for the social identification that people use to define themselves (Aquino & Reed, 2002). Therefore, moral identity refers to the self-concept, organized around moral traits (Aquino & Reed, 2002). In the present paper, we will refer to morality as seen by Black and Reynolds (2016), namely in terms of decisions and judgments that influence individuals' well-being and the extent to which these judgments define the moral self. According to the above authors, *the moral self* refers to the degree to which individuals identify with moral values (i.e., trans-situational goals that vary in importance and are considered the guiding principles for an individual or a group; Schwartz, 2007). The moral self refers to the importance that individuals attach to *being* moral (Narvaez, Lapsley, Hagele, & Lasky, 2006). On the other hand, *moral integrity* refers to individuals' desire to engage in voluntary and consistent actions, guided by moral principles (Black & Reynolds, 2016). Accordingly, Laabs (2007) suggested that having moral integrity means feeling good about oneself in a fundamental way, as a person with a character who strives to live a moral life.

To our knowledge, at the present moment, the relationship between moral identity, its two facets (moral self and moral integrity), and the impostor syndrome have not been explored. According to the field research, individuals suffering from the impostor syndrome will do everything in their power not to be discovered as "fraud". Thus, they generally hide their anxious and depressive feelings, self-sabotage behaviors, and low self-esteem. In other words, impostors tend to hide an essential part of their defining traits, violating the principle of benevolence, expressed through honesty (Schwartz, 2007). As we previously stated, moral identity refers to the importance that the individual attaches to his moral principles. Therefore, we can assume that if one violates the value of honesty,

he/she may not be fair to himself/herself and those around. Furthermore, since this moral value is continuously transgressed, these people will repeatedly exhibit behavior aimed at maintaining or improving their social image, to the detriment of moral integrity.

### The Present Study

The primary purpose of the present research was to explore the prevalence and predictors of impostor syndrome in psychology students. Previous data suggested a high prevalence rate among students (around 70%, according to Gravois, 2007). However, Bravata et al. (2019) suggested, using a systematic approach, that the numbers vary widely depending on the screening tool and cutoff used to assess symptoms, from 9% to 82%. Considering previous results among Romanian students (e.g., Dudău, 2014; Silion, Dudău, & Tomşa, 2016), we expected, within the current sample of psychology students, a high prevalence of the syndrome. The confirmation of this hypothesis would be significantly important to their future careers as psychologists.

Another purpose of the current research was to explore the relationship between moral identity and the impostor syndrome, given the fact that, at the time of writing, we are not aware of any published research in the area. Finally, we aimed to test a prediction model for the impostor syndrome, with procrastination, psychological distress, moral identity (moral self and moral integrity), gender, age, education (study year), and living area (i.e., urban or rural) as predictors within this model. We assumed that the participants who would present high scores in the impostor syndrome would also score high on procrastination and psychological distress (Rice, Richardson, & Clark, 2012; Wang, Sheveleva, & Permyakova, 2019). In line with previous

findings, we also expected procrastination and psychological distress to predict the impostor syndrome significantly. Moreover, we expected that participants who scored high on the impostor syndrome would also score low on moral identity, compared to those who scored lower on the impostor syndrome.

### Participants

Our sample was formed by 130 psychology students aged 18 to 39 ( $M = 21.77$  years,  $SD = 3.51$ , 84.6% females), from a public university in Romania, ranked as one of the top academic institutions in the country. Out of the 130 participants, 28.5% ( $N = 37$ ) were first-year students, 23.8% ( $N = 31$ ) were second-year students, and 47.7% ( $N = 62$ ) were students in their final year. Also, 60.8% ( $N = 79$ ) of the participants lived in urban areas, while 39.2% ( $N = 51$ ) were living in rural areas. Students were rewarded with course-credits, as advertised in the research recruitment phase, in exchange for their participation.

### Measures

We used the *Clance Impostor Phenomenon Scale* (Clance, 1985) to measure the impostor syndrome. The 20 items contained in the scale measure each answer on a 5-point Likert scale, with 1 = not at all true, and 5 = very true. Therefore, the higher the score, the higher the chance of experiencing associated symptoms of the impostor syndrome. When adding the scores for each answer, a score lower than or equal to 40 means that the individual has several characteristics of the syndrome; a score between 41 and 60 suggests moderate experiences of the syndrome, while a score between 61 and 80 suggests that the individual frequently feels the associated symptoms of the impostor syndrome; finally, a score higher than 80 sug-

gests intense experiences of the syndrome (Clance, 1985). Our approach in assessing the intensity of impostorism was similar to several studies that used these cutoff scores (e.g., Holmes, Kertay, Adamson, Holland, & Clance, 1993). Example items include statements such as *I often worry about not succeeding with a project or examination, even though others around me have considerable confidence that I will do well*, or *Sometimes I'm afraid others will discover how much knowledge or ability I really lack*. Internal consistency was high within the current sample, with a Cronbach's alpha of .90 and inter-item correlation mean of .306.

Psychological distress was measured by using the short version of the *Depression Anxiety Stress Scale* (DASS-21, Lovibond & Lovibond, 1995). The 21-item scale is a quantitative measure of distress along the three axes of depression, anxiety, and stress. Participants rated each statement and indicated, on a scale from 0 (*Did not apply to me at all – never*) to 3 (*Applied to me very much, or most of the time – almost always*), how much those statements applied to them within the past week. Example items include *I felt down-hearted and blue* or *I was unable to become enthusiastic about anything* (Depression) / *I experienced breathing difficulty (e.g., excessively rapid breathing, breathlessness in the absence of physical exertion)* or *I felt scared without any good reason* (Anxiety) / *I tended to over-react to situations* or *I felt that I was rather touchy* (stress). We only used the Anxiety and Depression subscales within the current study and found satisfying internal consistency for both: .87 for the Depression subscale and .87 for the Anxiety subscale. The inter-item correlation mean was .48 for the Depression scale and .50 for the Anxiety subscale.

Additionally, we used the *General Procrastination Scale* (Lay, 1986) to measure the general tendency to postpone tasks. The 20-

item scale uses a 5-point Likert scale (from 1 = extremely uncharacteristic, to 5 = extremely characteristic) to answer items such as *In preparing for some deadline, I often waste time by doing other things*, or *Even with jobs that require little else except sitting down and doing them, I find they seldom get done for days*. By adding each score, we find that the higher the score, the higher the procrastination tendency. The internal consistency was high within the current sample, with a Cronbach's alpha of .89, while the inter-item correlation mean was .29.

Finally, we used the *Moral Identity Questionnaire* (Black & Reynolds, 2016) to measure moral identity. This scale contains 20 items, divided into two subscales, namely Moral Self and Moral Integrity. The *Moral Self* subscale measures how much individuals identify with moral values and their importance of being moral. The *Moral Integrity* subscale measures "the desire to make intention and action consistent, and how much value participants place on acting according to moral principles" (Black & Reynolds, 2016, p.122). Example items include *Not hurting other people is one of the rules I live by*, and *I want other people to know they can rely on me* (for the Moral Self subscale), and *Once I've made up my mind about what is the right thing to do, I make sure I do it*, or *There is no point in going out of my way to do something good if no one is around to appreciate it* (for the Moral Integrity subscale). Participants answered items by selecting a number from 1 to 6, where 1 means "strong disagreement" and 6 means "strong agreement". Cronbach's alpha was satisfying for both subscales: .81 for the Moral Self subscale (.39 inter-item correlation mean) and .84 for the Moral Integrity dimension (.33 inter-item correlation mean).

A demographic scale assessed participants' age, gender, and other educational details such as study year or specialization.

## Procedure

An Institutional Review Board approved the protocol for the research project. The participants were recruited online, using social media groups and individual online messages containing an invitation to participate in the current study. The number of potential participants who were initially invited to participate was around 500, balanced in terms of study year (out of which more than 70% were females). Therefore, around a quarter of the potential participants answered our invitation. The participants were informed that their participation was voluntary, that the information would be kept confidential, and the results or their decision to participate would not become part of their evaluation. They completed the instruments online, and the average completion time was around 15 minutes. All the instruments we used went through an initial pretesting procedure to ensure their translation accuracy and to assess potential ambiguities ( $N = 34$ ,  $M = 20.83$ ,  $SD = 3.19$ , 76.5% females).

## Results

We used the SPSS 21.0 program to analyze our data. We assessed the intensity of impostorism by referring to the cutoff scores previously suggested by Holmes, Kertay, Adamson, Holland, and Clance (1993), and Clance (1985), i.e., higher than 61, which was very similar to the median value in our current sample ( $Mdn = 64$ ). In terms of prevalence, we found that 56.15% of the participants in our sample presented moderate to high intensity in symptoms related to the impostor syndrome, confirming our first hypothesis. We performed a series of preliminary analyses concerning the key assumptions of the  $t$ -tests and regression analysis. We then performed both  $t$ -tests and Mann-Whitney tests to explore the differences in terms of depression, anxiety, procrastination, and moral identity for participants scoring high and low on the impostor syndrome variable (see Table 1), considering the normality of the analyzed variables.

In terms of depression, we found significant differences between the two groups ( $U =$

Table 1 *The differences in terms of depression, anxiety, procrastination, and moral identity for participants scoring high and low on the impostor syndrome variable*

	<i>Impostor syndrome</i>	<i>N</i>	<i>M/ Mean of ranks</i>	<i>t-test/ Mann-Whitney</i>	<i>p</i>
Depression	High	73	49.28	1156	<.001
	Low	57	78.16		
Anxiety	High	73	17.86	-3.613	<.001
	Low	57	11.01		
Procrastination	High	73	61.65	-2.025	.045
	Low	57	56.77		
Moral self	High	73	66.25	2026	.797
	Low	57	64.54		
Moral integrity	High	73	68.77	1841	.261
	Low	57	61.31		

Note. High:  $M > 61$ ; Low:  $M < 61$

1021,  $p < .001$ ), which means that participants who perceive themselves as impostors ( $M$  rank = 49.28) had higher levels of depression, compared to those who experience this less ( $M$  rank = 78.16). Regarding the anxiety variable, we also found significant differences between the two groups [ $t(128) = 3.613$ ,  $p < .001$ ], which suggests that participants scoring high on the impostor syndrome ( $M = 17.86$ ) may be more anxious than those who scored lower ( $M = 11.01$ ). Additionally, we found significant differences between the two groups in terms of procrastination [ $t(128) = 2.025$ ,  $p = .045$ ], which means that participants who scored high on the impostor scale ( $M = 61.65$ ) procrastinate more compared to the other group ( $M = 56.77$ ). We did not find significant differences between the two groups in terms of moral self-perception ( $U = 2026$ ,  $p = .797$ ), or moral integrity ( $U = 1841$ ,  $p = .261$ ). Additionally, crosstabulation analyses suggested no significant associations between impostor syndrome levels (i.e., high or low) and gender ( $X^2 = .806$ ,  $p = .369$ ), living area ( $X^2 = 1.95$ ,  $p = .162$ ), or study year ( $X^2 = 5.51$ ,  $p = .06$ ).

We also tested for gender differences using a  $t$ -test, and results [ $t(128) = -1.193$ ,  $p = .235$ ] confirmed our assumption, suggesting no significant differences between males ( $M = 59$ ) and females ( $M = 63.10$ ) in the impostor syndrome variable. In other words, both the women and the men in the present study are equally likely to suffer from impostor syndrome symptoms. However, this specific result is subject to an important limitation given by the highly unbalanced gender distribution.

Before we performed a linear regression, we explored the associations between the variables we included in our prediction model (see Table 2).

We found a significant positive correlation ( $r = .507$ ,  $p < .001$ ) between the impostor syndrome and depression: participants

who scored high on impostor syndrome also scored high in depression. Also, we identified a significant positive correlation ( $r = .413$ ,  $p < .001$ ) between the impostor syndrome variable and anxiety, which means that participants who scored high on the impostor syndrome variable scored high on the anxiety variable, too. Therefore, our assumption (i.e., individuals who experience high impostor syndrome levels might also experience psychological distress) has been confirmed. Additionally, results suggested significant positive associations between the impostor syndrome and procrastination ( $r = .308$ ,  $p = .001$ ). We then tested a prediction model for the impostor syndrome using nine predictors, namely procrastination, psychological distress (i.e., depression and anxiety), moral identity (i.e., the moral self and moral integrity), gender, age, education (study year), and living area (i.e., urban or rural) – see Table 3.

The results suggested that our model was significant ( $F(9, 129) = 6.65$ ,  $p < .001$ ) in predicting the impostor syndrome, explaining 33.3% of its variance. However, among the nine predictors we tested, only depression ( $\beta = .308$ ,  $p = .003$ ) was significant. Therefore, the hypothesis that psychological distress predicts impostor syndrome was partially confirmed, while the assumption that procrastination predicts the impostor's syndrome was refuted.

Finally, to deepen our results, we tested for the potential moderating role of the impostor syndrome on the relationship between 1) participants' procrastination and depression and 2) students' procrastination and anxiety. We did not find a significant moderation effect of the impostor syndrome on participants' procrastination and depression ( $b = .195$ , 95% CI [-.024, .414],  $t = 1.76$ ,  $p = .081$ ). However, when exploring the impostor syndrome's moderating role on the relationship between students' procrastination and anxiety, the re-

Table 2 Means, standard deviations, and correlations between the main variables

Variables	M	SD	1	2	3	4	5	6	7	8	9	10
1. Impostor syndrome	62.47	14.16	-	.507**	.413**	.308**	.052	.079	.114	.083	.107	.089
2. Depression	1.12	0.31	.507**	-	.610**	.359**	.023	.131	-.102	-.038	-.064	.121
3. Anxiety	14.86	11.21	.413**	.610**	-	.188**	-.033	.152	-.062	.111	-.120	.154
4. Procrastination	59.52	13.82	.308**	.359**	.188**	-	.053	.088	.130	.047	.067	-.113
5. Moral self	1.62	0.06	.052	.023	-.033	.053	-	-.526**	-.175*	.159	-.002	.145
6. Moral integrity	1.37	0.14	.079	.131	.152	.088	-.526**	-	.020	-.202*	.015	.024
7. Age	21.77	3.51	.114	-.102	-.062	.130	-.175*	.020	-	-.045	.513**	-.230**
8. Gender	-	-	.083	-.038	.111	.047	.159	-.202*	-.045	-	.022	.124
9. Study year	-	-	.107	-.064	-.120	.067	-.002	.015	.513**	.022	-	-.114
10. Living area	-	-	.089	.121	.154	-.113	.145	.024	-.230**	.124	-.114	-

Table 3 Summary of regression analysis for predicting the impostor syndrome

Variables	Model 1		
	<i>B</i>	<i>SE B</i>	<i>β</i>
Age	.529	.339	.131
Gender	.473	3.190	.121
Study year	1.490	1.340	.090
Living area	1.640	2.280	.057
Anxiety	.191	.129	.151
Depression	.515	.148	.371*
Procrastination	.119	.085	.116
Moral self	.147	.253	.051
Moral integrity	.103	.150	.063
<i>R</i> <sup>2</sup>			.330
<i>F</i> for change in <i>R</i> <sup>2</sup>			6.65**

Note. \**p* < .05, \*\**p* < .001

Table 4 Summary of moderation analyses

	<i>b</i>	<i>SE B</i>	<i>t</i>
Procrastination (centered)	.145	.067	2.173*
Impostor syndrome (centered)	6.811	1.840	3.701**
Procrastination X Impostor syndrome	.309	.134	2.311*

sults suggested a significant interaction effect ( $b = .309$ , 95% CI [.044, .574],  $t = 2.311$ ,  $p = .023$ ) (see Table 4). More specifically, when participants expressed lower levels of the impostor syndrome, we found a non-significant negative relationship between procrastination and anxiety ( $b = -.007$ , 95% CI [-.195, .181],  $t = -.072$ ,  $p = .943$ ). On the other hand, when participants reported a higher level of the impostor syndrome, we found a significant positive relationship between procrastination and anxiety ( $b = .302$ , 95% CI [.116, .488],  $t = 3.210$ ,  $p = .002$ ). Therefore, these specific results suggest that the relationship between procrastination and anxiety may be different for individuals suffering from impos-

tor syndrome (i.e., they tend to procrastinate more, increasing their anxiety).

### Discussion

The current study examined the impostor syndrome among Romanian psychology students and a series of associated factors and predictors. Our results suggest significant differences between participants who scored high on the impostor syndrome and those who experienced less intense related aspects. First, as we expected, the participants who obtained higher scores on the impostor syndrome variable also presented higher levels of psychological distress, in line with previous research

(e.g., Bernard, Dollinger, & Ramaniah, 2002; Leonhardt, Bechtoldt, & Rohrmann, 2017; Wang, Sheveleva, & Permyakova, 2019). In the present study, we referred to psychological distress in terms of anxiety and depression and their subclinical aspects. Therefore, we considered depression as being characterized by low self-esteem and a distorted perception of achieving one's important goals (Lovibond & Lovibond, 1995). The link between the syndrome and depression was not at all surprising, as individuals suffering from this syndrome have lower self-esteem and a distorted perception of their competence (Chae, Piedmont, Estadt, & Wicks, 1995; Schubert & Bowker, 2017), in addition to a depressive mood due to recurrent negative thoughts (e.g., beliefs that they cannot complete a task), lack of energy, and low interest in daily tasks (Clance & Imes, 1978).

Anxiety also appears as a primary symptom due to the concerns about maintaining and improving one's social image. A constant and uncontrollable worry, irritability, and fatigue are a few aspects of the syndrome's symptomatic picture. Moreover, anxiety is also generated by distorted thoughts (*I am not able to complete a task*), and especially by the fear of the consequences of not performing that task.

As we expected, participants who scored high on the impostor syndrome variable also scored high on procrastination. In other words, individuals suffering from associated symptoms of the syndrome tend to adopt a procrastinating task-solving style. One explanation lies within Clance and Imes's theory (1978), according to which anxiety and fear of performing a task (especially a new one), along with the context, are the primary reasons for "impostors'" procrastination. In their case, new tasks usually induce anxiety, especially when the deadline is close, increasing the chances of adopting a procrastinating

style of solving them. We already know that procrastination only brings temporary relief of anxiety and stress (Lay & Schouwenburg, 1993; Steel, 2007; Tice & Baumeister, 1997). Thus, by adopting a procrastinating problem-solving style, individuals who perceive themselves as impostors regulate their anxiety and stress levels, however, this effect lasts for a relatively short time. We also found a significant positive relationship between procrastination and anxiety, suggesting that participants suffering from the impostor syndrome tend to procrastinate more, subsequently increasing their anxiety.

Testing moral identity as one of the impostor syndrome predictors is one of the primary contributions the current study brings to the literature. We assumed that individuals who perceive themselves as impostors would not be focused on moral values. The reasoning behind this hypothesis was that by wanting to preserve their social image these people might violate the moral principle of honesty (Schwartz, 2007). By continuously hiding their negative emotions and cognitions generated by anxiety and depression, they wear a social mask which they hardly take off. The fear of not being discovered as a fraud is not allowing them to truly show themselves, which violates the principle of benevolence and the moral value of honesty. On the one hand, they are not honest with themselves because they hardly admit and internalize their well-deserved success. On the other hand, they are not honest with those around them either, because they hide who they are. However, our results did not confirm any significant association between the moral self, moral integrity, and the impostor syndrome. However, if future studies were to confirm such a contradictory result, one possible explanation could lie in moral identity's social construction.

Previous studies revealed a general contradiction concerning gender differences in the

impostor syndrome. Clance and Imes (1978) assumed that the syndrome is a female-only construct, and several other researchers confirmed this idea (Jöstl, Bergsmann, Lüftenegger, Schober, & Spiel, 2015; Kumar & Jagacinski, 2006; Li, Hughes, & Thu, 2014). However, contradictory results were presented by various other authors (e.g., Edwards, Zeichner, Lawler, & Kowalski, 1987; Ferrari & Thompson, 2006; Fried-Buchalter, 1997; Leonhardt, Bechtoldt, & Rohrman, 2017). In the current study, we hypothesized that there would be no significant differences between female and male participants, and the results confirmed this assumption. However, this observation cannot be generalized due to the imbalance between the number of female participants ( $N = 110$ ) and male participants ( $N = 20$ ) within the current study. Though cultural factors might also be worth mentioning when discussing the prevalence of impostor syndrome among genders, as previous research already noticed (Breeze, 2018; LaDonna, Ginsburg, & Watling, 2018), once again our imbalanced sample does not allow outlining the importance of these factors. However, previous studies suggested that competitiveness might increase the uncertainty and concerns related to academic and professional competence (Hutchins & Rainbolt, 2017). In the current sample, students were recruited from one of the top universities in Romania, an institution that highly encourages competitiveness, which could, therefore, generally increase uncertainty among students who experience the impostor syndrome.

Our prediction model explained 33.9% of the impostor syndrome variance, but only depression was found to be significant. Therefore, the hypothesis that psychological distress predicts impostor syndrome has been partially confirmed. In other words, individuals who have a high level of depression tend to suffer more from impostor syndrome. This

can be explained by the fact that depression (as well as anxiety) can lead to self-doubt and subject individuals to maladaptive coping mechanisms, such as procrastination or avoidance, and low self-esteem. These factors can substantially impact the impostor syndrome's occurrence and development, implying only a few dubious thoughts for the vicious cycle to occur. Once the doubt about oneself is installed, self-esteem decreases, self-sabotage behaviors appear, inefficient problem-solving styles are adopted, and the whole impostorism cycle begins. However, contrary to our expectations, we did not find procrastination as a significant predictor of the impostor syndrome.

We found that 56.15% of the study participants experience the impostor syndrome's associated symptoms, which is a worrying number in terms of its implication on a student's personal, academic, social, and future professional life. For example, a student who is almost constantly in distress certainly cannot be as productive and as efficient as they actually could be, due to constant mental discomfort. A student who perceives himself/herself as an impostor will pay more attention to his/her social image than his/her general state of mind, social relations, or other personal variables. Moreover, the professional careers of future psychologists could be affected by the syndrome. An "impostor" may not give the maximum yield, may not ask for promotions, or take advantage of opportunities, may experience trouble with public speaking, or forging genuine relationships with co-workers. Therefore, though excellent, *impostors* may get stuck at a basic level in their work field due to their fear of success and failure. They will not try to engage in leadership positions and will generally not be aware of their actual value. Additionally, they may also suffer from burn-out at some point in their careers (Alrayyes et al., 2020).

Our results also suggested that students who experience higher levels of impostor syndrome tend to procrastinate more, thus increasing their anxiety levels. Consequently, we can presume that the impostor circle might be reduced by reducing procrastination through specific intervention programs, such as the ones suggested by Tuckman and Schouwenburg (2004) (i.e., focused on environmental restructuring, social influence, and training).

A series of limitation needs to be addressed for the current study. First, the size of the sample does not reflect the characteristics of the population. Therefore, the generalization of the results to the entire population is not possible, as the low sample size is the most important limitation of the current research. Therefore, we highly recommend future studies to extend the research sample in order to achieve more precise and more generalizable results concerning the research's primary purpose. Additionally, given that our sample was a convenience one, it is also important to mention that psychology students may be less representative of the young Romanian population and more representative of Romanian psychology students, in general. More specifically, our results may reflect higher levels of the impostor syndrome than a similar-sized sample from the general population, given a) the high standards and competition through the university years; and b) the high levels of responsibility of a career as a psychologist, compared to other organizational and educational fields (e.g., medical education; Levant et al., 2020).

Also, in terms of gender distribution, there was a significant difference between female (around 85%) and male participants, lowering the current results' generalizability. Although the instruments we used had good internal consistency, they were self-report measures, increasing the chances for desir-

ability to impact our results. The nature of this cross-sectional, non-experimental study does not allow us to make inferences regarding causality. Thus, we cannot say, for example, that the impostor syndrome is caused by depression. Finally, another potential limitation is related to the idea that *impostors* might not realize that they engage in such a high level of self-deception as they do, and, therefore, might offer desirable answers to the self-administered questionnaires, trying to portray themselves in a socially pleasing manner, which is consistent with the high importance that positive social image plays in their self-identity.

Future studies may want to explore potential mediation and moderation relations between the variables in more extensive and more gender-balanced samples. For example, future studies might test for a mediating effect of the impostor syndrome on the procrastination-psychological distress relationship. The voluntary delay of some actions can lead to the internalization of a cognitive pattern that involves the fear of being discovered as „fraud,” which further may lead to anxiety and depression. The use of longitudinal and experimental designs could also add value to the impostor syndrome literature.

We think that our findings may be useful in designing effective intervention strategies to fight the impostor syndrome. Given the current results, effective strategies may address *impostors'* coping mechanisms to replace maladaptive problem-solving techniques with efficient and productive techniques. Strategies may also emphasize the importance of other areas of life that are left out because of the effect of impostors on social image. However, in order to develop effective interventions for students experiencing the syndrome, more practical research is needed to be able to treat the causes and prevent and intervene promptly.

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