

Relation between Emotion Regulation, Psychological Inflexibility, Dispositional Mindfulness, and Emotional Symptoms in a Portuguese Sample

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Abstract

Background: Mental health is a central component of an individual's holistic health status. Various factors affect mental health, leading to different emotional symptoms. This study aimed to explore the relationship between emotional symptoms and emotion regulation, psychological inflexibility, and dispositional mindfulness, as well as age, sex, marital status, education, and professional situation.

Methods: A total of 390 clinical patients (Mage=34.33, SD=9.99, 66.4% female) filled in the Philadelphia Mindfulness Scale (PHLMS), the Emotion Regulation of Others and Self (EROS) scale, the Acceptance and Action Questionnaire II (AAQ-II) and the Brief Symptom Inventory (BSI).

Results: We found a significant relationship between emotional symptoms and sex (women reporting more symptoms), and a trend toward a negative relationship between emotional symptoms and age (older participants reporting fewer symptoms). Emotional symptoms showed a significant negative association with mindfulness (PHLMS total score and Acceptance subscale), and with emotion regulation (EROS Intrinsic affect-improving subscale). Conversely, higher scores on the EROS Extrinsic affect-worsening and Intrinsic affect-worsening subscales, as well as greater psychological inflexibility, were associated with more emotional symptoms.

Conclusions: Mindfulness and emotion regulation appear to act as protective factors against emotional symptoms, whereas psychological inflexibility is associated with greater vulnerability to such symptoms.

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**Keywords:**

Clinical psychology, Emotion regulation, Emotional symptoms, Mental health, Mindfulness, Psychiatry, Psychological inflexibility, Psychology.

Received: 9 May 2026

Accepted: 10 August 2026

Published: 15 August 2026

Citation: Meireles, A., Teixeira, R. J., Vitória, P., Nunes, C., Magalhães, T., Carvalho, F., Matos, M., Vaz Marques, M., & Brandão, T. (2026). Relation between emotion regulation, psychological inflexibility, dispositional mindfulness, and emotional symptoms in a Portuguese sample. *Mediterranean Journal of Clinical Psychology*, 14(2). <https://doi.org/10.13129/2282-1619/mjcp-5430>

1. Introduction

In Portugal, mental health disorders are highly prevalent (22.9%) with the most common mental health conditions being depressive and anxiety disorders, with an annual estimated prevalence of 16.5% and 7.9%, respectively (Direção-Geral de Saúde, 2017). Overall, mental health conditions and their inherent problems are currently the main cause of disability and one of the most prominent causes of early morbidity in industrialized countries, in which Portugal is included (Direção-Geral de Saúde, 2016, 2017).

Emotional difficulties are now considered a transdiagnostic factor that contributes to the onset, maintenance and severity of various mental health conditions (e.g., Aslan et al., 2024; Beauchaine & Cicchetti, 2019). There are multiple variables related to the impact of emotional symptoms on mental health conditions, among which the following stand out – being the focus of this work - emotion regulation, psychological inflexibility, dispositional mindfulness, sex and age (e.g., Moreno-Agostino et al., 2026).

The ability to regulate emotions in everyday life is critically important for the stability and adaptation of every human being (Clamor et al., 2026; Saccaro et al., 2024; Sloan et al., 2026). Thus, emotion regulation is a crucial factor in helping individuals remain flexible and stable across a wide range of situations that demand adaptation. Emotion regulation is important for the identification, awareness, interpretation, and labelling of emotions, as well as for the acceptance and tolerance of negative emotional experiences. It involves two types of regulation: intrinsic, referring to intrapersonal processes used to manage one's own emotions, and extrinsic, referring to interpersonal processes aimed at influencing others' emotions (Niven et al., 2011). Several studies show that lower levels of emotion regulation are associated with higher levels of emotional symptomatology (e.g., Coutinho et al., 2010; Sheppes et al., 2015).

Psychological flexibility refers to an individual's ability to remain in touch with the present moment and aware of their thoughts and emotions, allowing to adjust the behavior in response

to changing circumstances (Bond et al., 2011; Hayes et al., 2006). In summary, it is understood as the ability to actively experience an event as it is. Accordingly, numerous studies have consistently reported that psychological inflexibility is related to greater vulnerability to emotional symptoms (Gilbert et al., 2019; Kashdan & Rottenberg, 2010; Stange et al., 2017).

Mindfulness, a self-regulation process rooted in traditional Buddhist practices, is conceptualized as a self-regulatory process based on the acceptance and balanced awareness of oneself and the surrounding environment (Schuman-Olivier et al., 2020). Dispositional mindfulness is an inherent trait of the individual himself, characterized by a state of awareness and full attention, without judgment and with acceptance, independently of the practice of meditation (Brown et al., 2007; Brown & Ryan, 2003; Riggs et al., 2015). In this sense, the literature shows that higher levels of dispositional mindfulness are associated with greater self-esteem, self-regulation, and self-acceptance, all of which related to a stronger capacity for cognitive adaptation and positive modulation, in response to diverse stimuli, emotions, and situations (e.g., Keng et al., 2011; Magalhães et al., 2023).

Published research supports the association between mindfulness and reduced psychological and somatic symptoms (e.g., Goldberg et al., 2018; Maas genannt Bermpohl et al., 2023). Chronic pain constitutes a salient example in which mindfulness has been associated both with the psychological dimensions of pain and with interventions designed to mitigate limitations in daily functioning related to it (Riegner et al., 2025; Wielgosz et al., 2022). Regular mindfulness practice enhances emotion regulation and fosters the development of adaptive coping strategies (Bishop et al., 2004). It is also linked with significant reductions in stress levels, emotional symptomatology (such as depression and anxiety) and the likelihood of relapses (Kuyken et al., 2016; Spinhoven et al., 2022; Strauss et al., 2014). Accordingly, mindfulness appears to be a promising tool for both the prevention and treatment of mental health conditions, while also supporting the management of emotion regulation problems.

Regarding the association between emotional symptoms and sex, several studies demonstrate that women are more susceptible to the development of emotional disorders, presenting higher levels of anxiety and depression when compared to men (Apóstolo et al., 2008; Nolen-Hoeksema & Aldao, 2011; Nolen-Hoeksema, 1987). Concerning age, the literature also indicates that depression tends to be less prevalent and less severe in older adults (Carvalho, 2017; Nolen-Hoeksema & Aldao, 2011; Fiske et al., 2009).

Thus, the aim of the present study is to explore the relation between emotion regulation, psychological inflexibility and dispositional mindfulness, as well as sociodemographic variables (age, sex, marital status, education, and professional status), and emotional symptoms in a Portuguese clinical sample.

2. Methods

2.1 Participants

The sample included 390 patients followed in a mental health clinic (receiving cognitive-behavioral therapy), that answered a set of sociodemographic and clinical questions (see Table 1 with sociodemographic data of the sample). In general terms, and for the purposes of the current study, the clinical characteristics of the sample and the main reasons for referral were: anxiety symptoms, depressive symptoms, stress, adjustment difficulties, and eating behavior problems. The mean age was 34.33 years old (SD = 9.99; range = 13-66 years old, 3 participants were less than 18 years old). Most of the participants were women (66.4%), had a higher education (59%), lived alone (55.1%; single/widow/divorced) and were employed (63.9%).

Table 1

Sociodemographic characteristics of the sample

Variable		n	%
Sex	Male	131	33.6
	Female	259	66.4
Marital status	Married/living together	175	44.9
	Single	191	49.0
	Divorced/separated/widowed	24	6.1
Education	Under 9 th grade	39	10.0
	High school	121	31.0
	College degree	173	44.4
	Master's/PhD	57	14.6
Professional status	Unemployed	64	16.4
	Employed	249	63.9
	Student	71	18.3
	Retired	6	1.5

Age*	Mean $\pm$ SD	Minimum	Maximum
	34.33 $\pm$ 9.99	13	66

*Three of the participants included in the study are minors, aged 13, 15, and 17.

2.2 Measures

Philadelphia Mindfulness Scale (PHLMS; Cardaciotto et al., 2008; Portuguese version: Teixeira et al., 2017). This self-report scale is composed of 20 items and two subscales, namely acceptance (i.e., “attitude of openness and receptivity to whatever happens to occur in the field of awareness”) and present moment awareness (i.e., “the self-regulation of attention so that it is maintained on immediate experience, thereby allowing for increased recognition of mental events in the present moment”) (Bishop et al., 2004, p. 232). Each subscale is composed of 10 items that are rated on a Likert-type scale ranging from 1 (never) to 5 (very often). In this study, Cronbach’s α coefficients were .78 for awareness and .81 for acceptance.

Emotion Regulation of Others and Self scale (EROS; Niven et al., 2011; Portuguese version: Brandão et al., 2023). This self-report scale is composed by 19 items and assesses four types of affect regulation: extrinsic affect-improving (example: “*I listened to someone’s problems*”), extrinsic affect-worsening (example: “*I acted annoyed towards someone*”), intrinsic affect-improving (example: “*I did something I enjoy*”), and intrinsic affect-worsening (example: “*I thought about my shortcomings*”). Items are rated on a Likert-type scale ranging from 1 (not at all) to 5 (a great deal). In this study, Cronbach’s α coefficients were .88 for extrinsic affect-improving, .80 for extrinsic affect-worsening, .83 for intrinsic affect-improving, and .85 for intrinsic affect-worsening.

The Acceptance and Action Questionnaire II (AAQ-II; Bond et al., 2011; Portuguese version: Pinto-Gouveia et al., 2012). This self-report scale is composed by 7 items measuring experiential avoidance and psychological inflexibility (not being a diagnostic tool). It is a unidimensional scale. Items are rated on a Likert-type scale ranging from 1 (never true) to 7 (always true). Higher results predict higher psychological inflexibility or higher experiential avoidance. In this study, Cronbach’s α coefficient was of .88.

Brief Symptom Inventory (BSI; Derogatis & Fitzpatrick, 2004; Portuguese version: Canavarro, 1999, 2007). This self-report scale is composed of 53 items and assesses individuals’ psychopathological and psychological symptoms. It covers 9 dimensions: somatization, obsessive-compulsive, interpersonal sensitivity, depression, anxiety, hostility, phobic anxiety, paranoid ideation, and psychoticism. Items are rated on a Likert-type scale ranging from 0 (not at all) to 4 (extremely). In this study, Cronbach’s α coefficients ranged from .73 (psychoticism) to .89 (depression). Individuals with emotional disturbance will score higher in the various BSI categories and indices. Particularly, the Positive Symptom Distress Index (PSDI) is the one that best discriminates two groups (individuals with and without emotional disturbance), with its cut-off point being of ≥ 1.7 for the Portuguese population (below this value it is more likely to find individuals without emotional disturbance; above this value, the opposite) (Canavarro, 2007). We considered this cut-off point to identify those with low vs high emotional symptomatology.

2.3 Procedure

In adherence to the ethical principles outlined in the Helsinki Declaration, this study places a paramount emphasis on the protection of participants' rights and well-being. Prior to their involvement, participants were provided with comprehensive information about the study's objectives, procedures, potential risks, and benefits. A written informed consent was obtained from all participants, ensuring that individuals fully comprehend the nature of their participation. This study was approved by the Ethics Committee of the Clinic and the first author associated University (Approval number: 2; 5 February 2020). Data was collected in a Mental Health private clinic from the North of Portugal. Patients attending the clinic were approached by the staff of the clinic. The 390 patients voluntarily answered the instruments, after being ensured about the confidentiality of the data and that their participation was voluntary. Participants did not receive any type of incentives. Three of the participants included in the study were minors, aged 13, 15, and 17. The authors made a methodological decision to retain these participants, considering that it is standard clinical practice in Portugal to involve parents in processes concerning minors and to seek consent for their inclusion in future studies (written parental consent, together with adolescent assent, was obtained, and the Clinic Ethics Committee also approved explicitly the inclusion of minors), and given the difficulty of recruiting participants in clinical settings not typically oriented toward research—such as private mental health clinics. To further strengthen the ethical care provided in these cases, we ensured dedicated support during the administration of the instruments. Furthermore, since three of the questionnaires (PHLMS, EROS, and AAQ-II) have only been translated and validated for adults in Portuguese—and validating them for other age groups was not an objective of this study—the authors opted to continue using the adult versions, while ensuring appropriate debriefing and parental consideration. This decision proved straightforward and does not compromise the study's validity. In the specific case of the BSI, it is suitable for individuals aged 13 and older, including adolescents (13-17 years).

2.4 Data analysis

The IBM Statistical Package for the Social Sciences®SPSS (version 25 for MacOS) was used to conduct the statistical analyses. Since the sample was composed of 390 patients, assuming a confidence level of 95%, the associated estimation error was less than 5%. A descriptive analysis was conducted to describe the data (absolute and relative frequency for qualitative variables and mean and standard deviation, minimum and maximum values for quantitative variables).

To explore the relationships among the variables under study, inferential statistical methods were conducted. Data normality was assessed using the Kolmogorov–Smirnov test.

Since the Kolmogorov–Smirnov test indicated departures from normality (p -values $< .05$), the Mann–Whitney U test was applied to confirm the existence of significant differences between the two groups (with low and high emotional symptomatology; as described previously, a cutoff of 1.7 were used to classify participants into low and high emotionality groups; Canavarro, 2007). To assess the relationship between emotional symptomatology (BSI) and the qualitative variables, the Chi-square test or Fisher's exact test (when more than 20% of the cells in the contingency tables had expected frequencies below 5) were applied. To quantify the level of association between the variables, Cramer's V coefficient was considered. Its interpretation followed Cohen's criteria (2013): $V < .1$, very weak association; $.1 \leq V < .3$, weak association; $.3 \leq V < .5$, moderate association; $V \geq .5$, strong association. A binary logistic regression analysis was conducted, considering emotional symptomatology as the dependent variable, measured by the BSI (dichotomized into high and low emotional symptomatology, Canavarro, 2007), and as the independent variables those that presented a significant relationship in the preceding bivariate analysis, namely, sex, mindfulness acceptance, emotion regulation (intrinsic affect-worsening, intrinsic affect-improving, extrinsic affect-worsening) and psychological inflexibility. The results were reported using the odds ratio (OR) and their 95% confidence intervals (CI). The model's goodness of fit was assessed through the Hosmer-Lemeshow test and the area under the curve (AUC) through Receiver Operating Characteristic (ROC) was used to evaluate the discriminant capacity of the model. The percentage of variance in emotions symptomatology explained by the model was assessed using Nagelkerke's R^2 . Given the exploratory aim of identifying independent predictors of emotional symptomatology, the Forward Stepwise (Likelihood Ratio) procedure was applied to identify the variables that independently contributed to the outcome. Potential multicollinearity among the independent variables was assessed during the logistic regression analysis, and no evidence of multicollinearity was observed. A statistical significance of 5% was applied.

3. Results

3.1 Descriptive analysis

In Table 2 we present the maximum and minimum values, as well the mean value and standard deviation for each variable and its scales and subscales.

Table 2*Descriptive analysis of the variables*

Variables and scales	Subscales	Mean $\pm$ SD	Minimum	Maximum
Mindfulness (PHLMS)	Awareness	37.32 $\pm$ 6.26	17	50
	Acceptance	24.84 $\pm$ 6.17	11	46
	Total	62.16 $\pm$ 7.36	39	90
Emotions regulation (EROS)	Extrinsic affect-improving	3.53 $\pm$.89	1	5
	Extrinsic affect-worsening	1.54 $\pm$.81	1	5
	Intrinsic affect-improving	3.04 $\pm$.83	1	5
	Intrinsic affect-worsening	1.77 $\pm$.91	1	5
Psychological inflexibility (AAQ II)	Total	33.69 $\pm$ 8.95	7	49
Emotional symptoms (BSI)	Somatization	8.44 $\pm$ 6.34	0	27
	Obsessive-compulsive	11.31 $\pm$ 5.52	0	24
	Interpersonal sensitivity	6.44 $\pm$ 4.16	0	16
	Depression	10.72 $\pm$ 6.18	0	23
	Anxiety	10.25 $\pm$ 5.75	0	24
	Hostility	6.45 $\pm$ 4.30	0	20
	Phobic anxiety	6.32 $\pm$ 5.42	0	20
	Paranoid ideation	7.27 $\pm$ 4.71	0	19
	Psychoticism	6.70 $\pm$ 4.21	0	19

According to Table 2, all variables' scores, with exception to PHLMS acceptance and PHLMS total score, include the possible maximum value of each subscale. Regarding emotional symptoms on the BSI scale, the results reached the maximum possible values, except for somatization, depression, paranoid ideation, and psychoticism. Regarding the minimum values, these again coincided with the lowest possible scores, except for mindfulness PHLMS awareness, acceptance, and total score.

3.2 Relationship between emotional symptoms and sociodemographic variables

Analysis of results presented in Table 3 indicates a significant relation between emotional symptoms and sex, ($p < .05$; $V = .113$). Notably, 69.4% of patients with high emotional symptoms were women. There is a tendency for a significant relationship between emotional symptoms and educational level ($p < .1$), with 45% of patients presenting emotional symptoms having a bachelor's degree. There is also a tendency for a significant relationship between emotional symptoms and patient's age ($p < .1$), with older participants with less emotional symptoms.

Table 3*Relationship between emotional symptoms and sociodemographic variables*

		Emotional symptomatology ^a					
		Low		High		<i>p</i> -value	Cramer's V
		n	%	n	%		
Sex	Totals	98	25.1	291	74.9		
	Men	42	42.9	89	30.6	.035**#3	.113
			32.1		67.9		
	Women	56	57.1	202	69.4		
21.7			78.3				
Marital status	Married/living together	51	52.0	124	42.6	.263#3	.083
			29.1		70.9		
	Single	42	42.9	148	50.9		
			22.1		77.9		
Education	Divorced/separated/widowed	5	5.1	19	6.5		
			20.8		79.2		
	Under 9 th grade	5	5.1	34	11.7	.094*#3	.128
			12.8		87.2		
Professional status	High school	32	32.7	89	30.6		
			26.4		73.6		
	College degree	41	41.8	131	45.0		
			23.8		76.2		
Professional status	Master's/PhD	20	20.4	37	12.7		
			35.1		64.9		
	Unemployed	10	10.2	54	18.6	.198#4	.109
			15.6		84.4		
Professional status	Employed	70	71.4	178	61.1		
			28.2		71.8		
	Student	17	17.4	54	18.6		
			23.9		76.1		
Professional status	Retired	1	1.0	5	1.7		
			16.7		83.3		
		Mean ± SD		Mean ± SD		<i>p</i> -value ^{#5}	
Age		35.63 ± 9.58		33.89 ± 10.12		.074*	

^a Cut off point: PSI (positive symptoms index) ≥ 1.7

#3 – Chi-square test; #4 – Fisher's Exact test; #5 - Mann-Whitney test;

p*<.1; *p*<.05.

3.3 Relationship between emotional symptoms with mindfulness, emotion regulation, and psychological inflexibility

Analyzing data presented in Table 4, there is a significant difference between patients with low and high emotional symptomatology in the following variables: mindfulness (PHLMS acceptance, $p=.001$; and PHLMS total value, $p<.05$), emotion regulation (EROS: extrinsic affect-worsening, $p<.05$; intrinsic affect-improving, $p<.05$; and intrinsic-affect worsening, $p<.001$) and psychological inflexibility ($p<.001$). Mindfulness (PHLMS acceptance and PHLMS total value) and emotion regulation (intrinsic affect-improving) were significantly higher in patients with low emotional symptomatology. Emotion regulation (extrinsic affect-worsening, intrinsic affect-worsening) and total psychological inflexibility were significantly higher in patients with high emotional symptomatology.

Table 4

Relationship between emotional symptoms and mindfulness, emotions regulation, psychological inflexibility

		Emotional symptomatology ^a		<i>p</i> -value ^{#5}
		Low	High	
Variable	Subscale	Mean $\pm$ SD	Mean $\pm$ SD	
Mindfulness	PHLMS awareness	37.23 $\pm$ 5.84	37.33 $\pm$ 6.40	.906
	PHLMS acceptance	26.51 $\pm$ 6.26	24.25 $\pm$ 6.04	.001**
	PHLMS total	63.74 $\pm$ 7.00	61.58 $\pm$ 7.38	.013**
Emotions regulation	Extrinsic affect-improving	3.64 $\pm$.79	3.49 $\pm$.92	.355
	Extrinsic affect-worsening	1.37 $\pm$.06	1.60 $\pm$.86	.028**
	Intrinsic affect-improving	3.22 $\pm$.80	2.97 $\pm$.80	.007**
	Intrinsic affect-worsening	1.36 $\pm$.51	1.91 $\pm$.97	<.001**
Psychological inflexibility		27.01 $\pm$ 8.65	36.04 $\pm$ 7.68	<.001**

Cut off point: PSI $\geq$ 1.7; #5 - Mann-Whitney test; ** $p<.05$; *** $p<.001$

3.4 Factors associated with emotional symptoms

Table 5 presents the logistic regression results, with emotional symptomatology as the dependent variable and the independent variables being those that showed a significant relationship with it in previous analyses.

Table 5*Logistic regression model, including variables that significantly influence emotional symptomatology*

	IC 95%				
	Coef.	p-value	OR	Inferior	Superior
	-3.533	<.001	.029		
Sex^a	.596	.031	1.814	1.056	3.117
Emotions regulation (Intrinsic affect-worsening)	.728	.001	2.070	1.340	3.199
Psychological inflexibility	.117	<.001	1.124	1.086	1.163
pHosmer-Lemeshow=.720; Nagelkerke's R²=.322; AUC=.811 (IC95%= [.764;.858]); % Correct global classification=79.2%					

Dependent variable: emotional symptomatology

^a Reference category = male

The model fits well the data ($p_{\text{Hosmer-Lemeshow}} > .05$) and explains approximately 32.2% of the variance of emotional symptomatology (Nagelkerke's $R^2 = .322$). It classifies correctly 79.2% of the data and has a good discriminant power ($\text{AUC} = 81.1\%$). For each unity of increase in the emotion regulation scale (in the subscale intrinsic affect-worsening), the probability of presenting high emotional symptoms duplicates ($\text{OR} = 2.070$; $\text{IC95} = [1.340; 3.199]$). For each unity of increase in psychological inflexibility, the probability of presenting high emotional symptomatology increases 12.4% ($\text{OR} = 1.124$; $\text{IC95} = [1.086; 1.163]$). Regarding sex, women have 81.4% more possibility of developing high emotional symptomatology when compared to men ($\text{OR} = 1.814$; $\text{IC95} = [1.056; 3.117]$).

4. Discussion

Given the rising prevalence of mental health conditions, concern for the population's mental well-being has become increasingly prominent. The present study aimed to explore the relationship between emotion regulation, psychological flexibility, dispositional mindfulness, and emotional symptomatology.

4.1 Emotion regulation

Regarding emotion regulation, significantly higher values of intrinsic affect improvement were found in the group of patients with reduced emotional symptomatology. Individuals with high emotional symptoms presented significantly higher values of extrinsic and intrinsic worsening affect. Various studies obtained similar results, concluding that individuals with mental health

conditions present significant differences in emotion regulation (e.g., Aslan et al., 2024; Coutinho et al., 2010; Sheppes et al., 2015).

4.2 Psychological inflexibility

It was found that individuals with higher levels of psychological inflexibility were more likely to present emotional symptoms. Several studies show that psychological inflexibility, as an immediate inability to modify and/or adapt one's behavior in face of unexpected events, increases levels of stress both in the short and long term, resulting in an increased vulnerability to future symptomatology manifestations, emotion dysregulation and consequently higher risk of anxiety or depression (Kashdan & Rottenberg, 2010; Stange et al., 2017). According to Bond et al. (2011), higher levels of psychological inflexibility are linked to depressive symptoms, anxiety, stress, and general psychological distress. Furthermore, psychological inflexibility can be understood as a risk factor for the development of mental health-related illnesses, greater psychological suffering, and increased limitations in daily life, such as a rise in absenteeism at work. Similarly, results of Gilbert et al.'s study support a positive relationship between psychological inflexibility, depression, and anxiety (although in a lower extent regarding anxiety) (Gilbert et al., 2019). Therefore, addressing psychological inflexibility through both preventive and therapeutic approaches is essential to promote symptom management and improve quality of life.

4.3 Mindfulness

Concerning mindfulness, the present study found that lower levels of emotional symptomatology were associated with higher levels of mindfulness, particularly on the acceptance subscale. Published research shows similar results, indicating that higher levels of mindfulness, particularly in its acceptance dimension, are directly associated with less severe and less frequent emotional symptoms (Keng et al., 2011; Magalhães et al., 2023). Mindfulness correlates moderately and negatively with depressive states, and moderately and positively with mental and emotional well-being (Kotsou et al., 2018). In one of these studies, Cardaciotto et al. (2008) found that mindfulness (particularly the component of acceptance) was negatively related with depression and anxiety, with higher levels of acceptance linked to fewer emotional symptoms and improved quality of life.

4.4 Sociodemographic variables

Regarding the sociodemographic variables, most participants presented emotional symptoms, a finding that can be attributed to the clinical nature of the sample, composed of individuals seeking psychological and/or psychiatric support. In our sample, the majority of those presenting high emotional symptomatology were women. A study carried out in a primary care

unit in Portugal found that women present higher mean values of anxiety and depression (Apóstolo et al., 2008). There are several hypotheses, although mostly inconclusive, to explain the higher frequency of emotional symptoms and mental illnesses in women (Nolen-Hoeksema & Aldao, 2011; Nolen-Hoeksema, 1987). Our results are, therefore, in line with previous research, supporting that women have greater susceptibility to develop mental health conditions with high emotionality (Albert, 2015; Kuehner, 2017).

The present study validated the negative association between emotional symptomatology and patient age. According to Fiske et al. (2009), depression appears to be less frequent in older adults. However, psychological assessments of the elderly should be conducted at appropriate times and in suitable contexts, such as general or family medicine practice consultations, thereby promoting early and preventive interventions at the onset of emotional symptomatology. Nolen-Hoeksema and Aldao (2011) emphasized that older adults possess a greater ability to manage and regulate their emotions, as well as to develop strategies to cope with everyday challenges, resulting in a lower incidence of depression and psychological disorders in this age group. On the other hand, Carvalho (2017) states that older adults are more prone to depression (with the highest values being reached at more advanced ages) but show a lower prevalence of anxiety when compared to younger adults.

Therefore, it is extremely important to implement prevention, and intervention plans to address and mitigate the growing incidence of emotional symptomatology and mental health-related problems. On the one hand, individuals should strive to develop personal strategies for maintaining internal homeostasis and safeguarding mental health; on the other hand, when such balance cannot be achieved autonomously, seeking professional support becomes essential to ensure a tailored, targeted, and effective intervention.

5. Study limitations

The present study has some limitations. One is the absence of a non-clinical comparison group; because our sample consists entirely of individuals with mental health conditions, we cannot directly contrast their psychological functioning with that of mentally healthy participants. Additionally, the use of self-report measures increases the possibility of biases, which can affect data validity. The use of assessment instruments not validated for adolescents, even though our sample included only three adolescents and particular care was taken in administering them to this subgroup, also represents a limitation that must be acknowledged. Additionally, although the diagnostic characteristics of the sample were described in general terms, the lack of specificity and of possible comparisons between groups also constitutes a limitation of the present study. Finally, despite the methodological decision regarding the use of age-appropriate assessment instruments, we also acknowledge this as a limitation. The fact that this is a cross-

sectional study also limits the ability to infer the direction of the relationships between the study variables and prevents tracking changes over time, particularly in response to the intervention. The absence of knowledge regarding participants' prior mindfulness practice also represents a limitation. All these aspects are assumed study limitations that impact the interpretation and generalizability of the findings.

6. Conclusions

Portugal is among the countries with the highest prevalence of mental health conditions in both Europe and worldwide. Understanding these problems and how to prevent and treat them is highly relevant. The logistic regression model presented in this study explained approximately 32.2% of the variance in emotional symptomatology, indicating that emotion regulation, psychological inflexibility, mindfulness and sex are important factors associated with emotional symptomatology and should be incorporated into the prevention and treatment of mental health conditions. Nevertheless, emotional symptomatology is a multifactorial phenomenon, and the remaining unexplained variance suggests that additional psychological, social, and clinical factors, not included in the present study, may also contribute to its occurrence. Future studies should therefore explore a broader range of potential predictors to achieve a more comprehensive understanding of emotional symptomatology.

Ethical approval

This study was approved by the Ethics Committee of the Clinic and the first author associated University (Approval number: 2; 5 February 2020).

Informed Consent Statement

A written informed consent was obtained from all participants, ensuring that individuals fully comprehend the nature of their participation.

Data Availability Statement

Data presented in this study is available on request from the corresponding author. The data is not publicly available due to privacy and ethical restrictions.

Conflict of Interest Statement

The authors declare that the research was conducted in the absence of any potential conflict of interest.

Funding

The authors received no financial support for the research, authorship, and/or publication of this article.

Authors' Contribution

Study design: AM, RJT, PV, TM, FC; data collection: AM, TM, RJT; data analysis and results interpretation: AM, RJT, PV, CN, TB; manuscript preparation: all authors. All authors reviewed the results and the draft of the manuscript and approved its final version.

AI Disclosure Statement

The authors declare that no artificial intelligence (AI) tools, including generative AI systems, were used in the conception, design, analysis, interpretation of data, drafting, or writing of this manuscript. All intellectual content, scientific reasoning, and manuscript preparation were carried out solely by the authors.

References

1. Albert, P. R. (2015). Why is depression more prevalent in women?. *Journal of Psychiatry & Neuroscience : JPN*, 40(4), 219–221. <https://doi.org/10.1503/jpn.150205>
2. Apóstolo, J., Ventura, Â., Caetano, C., & Costa, S. (2008). Depressão, ansiedade e stresse em utentes de cuidados de saúde primários [Depression, anxiety and stress in primary health care users]. *Revista de Enfermagem*, 2(8), 45–49. <https://www.redalyc.org/pdf/3882/388239955004.pdf>
3. Aslan, I. H., Dorey, L., Grant, J. E., & Chamberlain, S. R. (2024). Emotion regulation across psychiatric disorders. *CNS spectrums*, 29(3), 215–220. <https://doi.org/10.1017/S1092852924000270>
4. Beauchaine, T. P., & Cicchetti, D. (2019). Emotion dysregulation and emerging psychopathology: A transdiagnostic, transdisciplinary perspective. *Development and Psychopathology*, 31(3), 799–804. <https://doi.org/10.1017/S0954579419000671>
5. Bishop, S. R., Lau, M., Shapiro, S., Carlson, L., Anderson, N. D., Carmody, J., Segal, Z. V., Abbey, S., Specia, M., Velting, D., & Devins, G. (2004). Mindfulness: A proposed operational definition. *Clinical Psychology: Science and Practice*, 11(3), 230–241. <https://doi.org/10.1093/clipsy.bph077>
6. Bond, F. W., Hayes, S. C., Baer, R. A., Carpenter, K. M., Guenole, N., Orcutt, H. K., Waltz, T., & Zettle, R. D. (2011). Preliminary psychometric properties of the Acceptance and Action Questionnaire–II: A revised measure of psychological inflexibility and experiential avoidance. *Behavior Therapy*, 42(4), 676–688. <https://doi.org/10.1016/j.beth.2011.03.007>
7. Brandão, T., Teixeira, R. J., & Pereira, A. (2023). The Portuguese version of the Emotion Regulation of Others and Self (EROS) in a clinical sample: psychometric properties and measurement invariance across sex. *Current Psychology*, 42(34), 30020–30028. <https://doi.org/10.1007/s12144-022-04021-x>
8. Brown, K. W., & Ryan, R. M. (2003). The benefits of being present: mindfulness and its role in psychological well-being. *Journal of Personality and Social Psychology*, 84(4), 822. <https://doi.org/10.1037/0022-3514.84.4.822>
9. Brown, K. W., Ryan, R. M., & Creswell, J. D. (2007). Mindfulness: Theoretical foundations and evidence for its salutary effects. *Psychological Inquiry*, 18(4), 211–237. <https://doi.org/10.1080/10478400701598298>
10. Canavarro, M. C. (1999). Inventário de Sintomas Psicopatológicos: BSI [Psychopathological Symptom Inventory: BSI]. In M. R. Simões, M. Gonçalves, & L. S. Almeida (Eds.), *Testes e provas psicológicas em Portugal [Psychological tests and exams in Portugal]* (vol. II, pp. 87-109). Braga, Portugal: SHO/APPORT.
11. Canavarro, M. C. (2007). Inventário de Sintomas Psicopatológicos: Uma revisão crítica dos estudos realizados em Portugal [Psychopathological Symptom Inventory: A critical review of studies carried out in Portugal]. In M. Simões, C. Machado, M. Gonçalves, & L. Almeida (Eds.), *Avaliação psicológica: Instrumentos validados para a população Portuguesa [Psychological assessment: Instruments validated for the Portuguese population]* (vol. III, pp. 305-331). Coimbra, Portugal: Quarteto Editora.
12. Carvalho, A. (2017). *Depressão e outras perturbações mentais comuns - Enquadramento Global e Nacional e referência de Recurso em Casos Emergentes [Depression and other common mental disorders - Global and National Framework and Resource Reference in Emerging Cases]*. Lisboa, Portugal: Direção Geral Saúde.

13. Cardaciotto, L., Herbert, J. D., Forman, E. M., Moitra, E., & Farrow, V. (2008). The assessment of present-moment awareness and acceptance: The Philadelphia Mindfulness Scale. *Assessment*, 15(2), 204–223.
<https://doi.org/10.1177/1073191107311467>
14. Clamor, A., Lincoln, T. M., & Schulze, L. (2026). Emotion regulation in mental disorders: A systematic review and multilevel meta-analysis of transdiagnostic and disorder-specific impairments. *Psychological Bulletin*, 152(2), 157–200. <https://doi.org/10.1037/bul0000512>
15. Cohen, J. (2013). *Statistical power analysis for the behavioral sciences* (2nd ed.). Routledge.
16. Coutinho, J., Ribeiro, E., Ferreira, R., & Dias, P. (2010). Versão portuguesa da Escala de Dificuldades de Regulação Emocional e sua relação com sintomas psicopatológicos [Portuguese version of the Emotion Regulation Difficulties Scale and its relationship with psychopathological symptoms]. *Archives of Clinical Psychiatry*, 37, 145–151. <https://doi.org/10.1590/S0101-60832010000400001>
17. Derogatis, L. R., & Fitzpatrick, M. (2004). The SCL-90-R, the Brief Symptom Inventory (BSI), and the BSI-18. In M. E. Maruish (Ed.), *The use of psychological testing for treatment planning and outcomes assessment: Instruments for adults* (3rd ed., pp. 1–41). Lawrence Erlbaum Associates Publishers.
18. Direção-Geral de Saúde. (2016). *Porque se fala em saúde mental? [Why do we talk about mental health?]* [cited in 2020 jan 15].
<https://www.dgs.pt/paginas-de-sistema/saude-de-a-a-z/programa-nacional-para-a-saude-mental/perguntas-e-respostas.aspx>
19. Direção-Geral de Saúde. (2017). *Programa Nacional para a Saúde Mental [National Mental Health Program]*. [cited in 2020 jan 15].
<https://www.dgs.pt/programa-nacional-para-a-promocao-da-atividade-fisica/perguntas-e-respostas.aspx>
20. Fiske, A., Wetherell, J. L., & Gatz, M. (2009). Depression in older adults. *Annual Review of Clinical Psychology*, 5, 363–389. <https://doi.org/10.1146/annurev.clinpsy.032408.153621>
21. Gilbert, K. E., Tonge, N. A., & Thompson, R. J. (2019). Associations between depression, anxious arousal and manifestations of psychological inflexibility. *Journal of Behavior Therapy and Experimental Psychiatry*, 62, 88–96. <https://doi.org/10.1016/j.jbtep.2018.09.006>
22. Goldberg, S. B., Tucker, R. P., Greene, P. A., Davidson, R. J., Wampold, B. E., Kearney, D. J., & Simpson, T. L. (2018). Mindfulness-based interventions for psychiatric disorders: A systematic review and meta-analysis. *Clinical Psychology Review*, 59, 52–60. <https://doi.org/10.1016/j.cpr.2017.10.011>
23. Hayes, S. C., Luoma, J. B., Bond, F. W., Masuda, A., & Lillis, J. (2006). Acceptance and commitment therapy: Model, processes and outcomes. *Behaviour Research and Therapy*, 44(1), 1–25.
<https://doi.org/10.1016/j.brat.2005.06.006>
24. Kashdan, T. B., & Rottenberg, J. (2010). Psychological flexibility as a fundamental aspect of health. *Clinical Psychology Review*, 30(7), 865–878. <https://doi.org/10.1016/j.cpr.2010.03.001>
25. Keng, S. L., Smoski, M. J., & Robins, C. J. (2011). Effects of mindfulness on psychological health: A review of empirical studies. *Clinical Psychology Review*, 31(6), 1041–1056. <https://doi.org/10.1016/j.cpr.2011.04.006>

26. Kotsou, I., Leys, C., & Fossion, P. (2018). Acceptance alone is a better predictor of psychopathology and well-being than emotional competence, emotion regulation and mindfulness. *Journal of Affective Disorders*, 226, 142–145. <https://doi.org/10.1016/j.jad.2017.09.047>
27. Kuehner, C. (2017). Why is depression more common among women than among men?. *The Lancet. Psychiatry*, 4(2), 146–158. [https://doi.org/10.1016/S2215-0366\(16\)30263-2](https://doi.org/10.1016/S2215-0366(16)30263-2)
28. Kuyken, W., Warren, F. C., Taylor, R. S., Whalley, B., Crane, C., Bondolfi, G., Hayes, R., Huijbers, M., Ma, H., Schweizer, S., Segal, Z., Speckens, A., Teasdale, J. D., Van Heeringen, K., Williams, M., Byford, S., Byng, R., & Dalgleish, T. (2016). Efficacy of mindfulness-based cognitive therapy in prevention of depressive relapse: an individual patient data meta-analysis from randomized trials. *JAMA Psychiatry*, 73(6), 565–574. <https://doi.org/10.1001/jamapsychiatry.2016.0076>
29. Maas genannt Bermpohl, F., Hülsmann, L., & Martin, A. (2023). Efficacy of mindfulness- and acceptance-based cognitive-behavioral therapies for bodily distress in adults: a meta-analysis. *Frontiers in Psychiatry*, 14, 1160908. <https://doi.org/10.3389/fpsyt.2023.1160908>
30. Magalhães, T., Teixeira, R. J., Vitória, P., Nunes, C., Meireles, A., Vaz Marques, M., Carvalho, F., & Brandão, T. (2023). Interference of difficulties in mindful acceptance and emotional intelligence, added to perseverative negative thinking, in emotional balance: A study with a low/high emotional symptomatology clinical sample. *Mediterranean Journal of Clinical Psychology*, 11(3). <https://doi.org/10.13129/2282-1619/mjcp-3862>
31. Moreno-Agostino, D., Khan, N., De Rubeis, V., Jacob, C. M., Banati, P., Sadana, R., & Prina, M. (2026). An umbrella review of psychological capacity and mental health trajectories across the life course. *Nature Mental Health*, 4, 451–468. <https://doi.org/10.1038/s44220-026-00592-x>
32. Niven, K., Totterdell, P., Stride, C. B., & Holman, D. (2011). Emotion Regulation of Others and Self (EROS): The development and validation of a new individual difference measure. *Current Psychology: A Journal for Diverse Perspectives on Diverse Psychological Issues*, 30(1), 53–73. <https://doi.org/10.1007/s12144-011-9099-9>
33. Nolen-Hoeksema, S. (1987). Sex differences in unipolar depression: evidence and theory. *Psychological Bulletin*, 101(2), 259. <https://doi.org/10.1037/0033-2909.101.2.259>
34. Nolen-Hoeksema, S., & Aldao, A. (2011). Gender and age differences in emotion regulation strategies and their relationship to depressive symptoms. *Personality and Individual Differences*, 51(6), 704–708. <https://doi.org/10.1016/j.paid.2011.06.012>
35. Patuleia, N., Rosa, E., & Pinto, A. R. (2016). *Portal da Saúde Mental - A saúde mental [Mental Health Portal - Mental health]*. [cited in 2020 may 1]. <https://www.portaldasaudemental.pt/a-saude-mental/>
36. Pinto-Gouveia, J., Gregório, S., Dinis, A., & Xavier, A. (2012). Experiential avoidance in clinical and non-clinical samples: AAQ-II Portuguese version. *International Journal of Psychology and Psychological Therapy*, 12(2), 139–156. <http://www.redalyc.org/articulo.oa?id=56023336002>
37. Riegner, G., Dean, J., Wager, T. D., & Zeidan, F. (2025). Mindfulness meditation and placebo modulate distinct multivariate neural signatures to reduce pain. *Biological Psychiatry*, 97(1), 81–88. <https://doi.org/10.1016/j.biopsych.2024.08.023>

38. Riggs, N. R., Black, D. S., & Ritt-Olson, A. (2015). Associations between dispositional mindfulness and executive function in early adolescence. *Journal of Child and Family Studies*, 24, 2745–2751.
<https://doi.org/10.1007/s10826-014-0077-3>
39. Saccaro, L. F., Giff, A., De Rossi, M. M., & Piguet, C. (2024). Interventions targeting emotion regulation: A systematic umbrella review. *Journal of psychiatric research*, 174, 263–274.
<https://doi.org/10.1016/j.jpsychires.2024.04.025>
40. Schuman-Olivier, Z., Trombka, M., Lovas, D. A., Brewer, J. A., Vago, D. R., Gawande, R., Dunne, J. P., Lazar, S. W., Loucks, E. B., & Fulwiler, C. (2020). Mindfulness and Behavior Change. *Harvard Review of Psychiatry*, 28(6), 371–394. <https://doi.org/10.1097/HRP.0000000000000277>
41. Sheppes, G., Suri, G., & Gross, J. J. (2015). Emotion regulation and psychopathology. *Annual Review of Clinical Psychology*, 11, 379–405. <https://doi.org/10.1146/annurev-clinpsy-032814-112739>
42. Sloan, M. E., Stellern, J., Xiao, K. B., Germeyer, A., Gill, K., Laputsina, V., Mulsant, B. H., Ngoy, A., Nguyen, M., Tang, V. M., Sanches, M., & Gowin, J. L. (2026). Emotion regulation impairment across psychiatric disorders: a systematic review and meta-analysis. *Translational Psychiatry*, 16(1), 386.
<https://doi.org/10.1038/s41398-026-04119-x>
43. Spinhoven, P., Hoogerwerf, E., van Giezen, A., & Greeven, A. (2022). Mindfulness-based cognitive group therapy for treatment-refractory anxiety disorder: A pragmatic randomized controlled trial. *Journal of Anxiety Disorders*, 90, 102599. <https://doi.org/10.1016/j.janxdis.2022.102599>
44. Stange, J. P., Alloy, L. B., & Fresco, D. M. (2017). Inflexibility as a vulnerability to depression: A systematic qualitative review. *Clinical Psychology: Science and Practice*, 24(3), 245. <https://doi.org/10.1037/h0101744>
45. Strauss, C., Cavanagh, K., Oliver, A., & Pettman, D. (2014). Mindfulness-based interventions for people diagnosed with a current episode of an anxiety or depressive disorder: a meta-analysis of randomised controlled trials. *PLOS ONE*, 9(4), e96110. <https://doi.org/10.1371/journal.pone.0096110>
46. Teixeira, R. J., Ferreira, G., & Pereira, M.G. (2017). Portuguese validation of the cognitive and affective mindfulness scale-revised and the Philadelphia Mindfulness Scale. *Mindfulness & Compassion*, 2(1), 3–8.
<https://doi.org/10.1016/j.mincom.2017.03.001>
47. Wielgosz, J., Kral, T. R. A., Perlman, D. M., Mumford, J. A., Wager, T. D., Lutz, A., & Davidson, R. J. (2022). Neural signatures of pain modulation in short-term and long-term mindfulness training: A randomized active-control trial. *The American Journal of Psychiatry*, 179(10), 758–767.
<https://doi.org/10.1176/appi.ajp.21020145>
48. World Health Organization. (2018). *Mental health: strengthening our response* [cited in 2020 May 1].
<https://www.who.int/en/news-room/fact-sheets/detail/mental-health-strengthening-our-response>

