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Is the Effect of Psychological Inflexibility on Symptoms and Quality of Life Mediated by Coping Strategies in Patients with Mental Disorders?

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Abstract

This study examined the relations among psychological inflexibility (PI), symptoms, and quality of life dimensions in psychiatric patients. It also explored how PI was associated with coping and the mediating effect of coping on the relationships of PI to symptoms and quality of life dimensions. The sample was composed of 164 psychiatric patients. Before starting cognitive-behavior therapy, patients completed the measures of PI, coping, symptoms, and quality of life. PI positively correlated with symptoms, denial, venting, behavioral disengagement, and self-blame. It was also related to lowered dimensions of quality of life, positive reframing, and acceptance. Denial and venting mediated the association of PI with somatic symptoms, whereas acceptance mediated the impact of PI on depressive symptoms. These results evidence the linkages between PI and unhelpful coping strategies and highlight how these maladaptive strategies can also influence the negative effect of PI on symptoms and quality of life in psychiatric patients.

Keywords Psychological inflexibility · Coping · Depression · Anxiety · Quality of life

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Introduction

Psychological inflexibility (PI), or experiential avoidance, is defined as the inability to be in contact with difficult inner experiences. This deficit involves an excessive negative evaluation of thoughts, memories, emotions, and sensations and the rigid attempt to alter their frequency, sensitivity, or form by suppressing, avoiding, or controlling them (Hayes et al. 2006; Hayes et al. 1996). As a result of PI, the person is less capable of accepting unwanted experiences, adopting instead a closed and more judgmental stance toward them.

Although PI constitutes a fundamental concept in acceptance and commitment therapy (ACT), one of the modern contextual cognitive-behavioral therapies (CBT), PI can also be regarded as a key process in CBT to the extent that this therapeutic model is aimed at learning more balanced and flexible thinking, acting in accordance with a more realistic perspective, and recognizing and tolerating negative emotions (Butler et al. 2008).

In the context of psychopathology, PI has been considered a toxic and transdiagnostic vulnerability factor contributing to the development and maintenance of diverse mental disorders and emotional symptoms (Hayes et al. 1996). A growing number of investigations have supported the association of PI with both depressive disorders (Giorgio et al. 2010; Kashdan et al. 2009) and depressive symptoms (Sharar and Herr 2011). Evidence from studies also suggests a link between PI and increased anxious symptoms in clinical patients (Blakey et al. 2016; Kämpfe et al. 2012; Mahaffey et al. 2013). One specific type of anxiety-related symptoms, particularly relevant in a variety of psychiatric patients is that including somatic sensations. As somatic responses can be misinterpreted in a threatening manner, increasing feelings of anxiety and avoidance behaviors (Clark and Beck 2010), it appears that understanding the association of PI with anxiety-related bodily sensations may be a relevant issue to be addressed in clinical research.

In a similar way, investigation of the role that EA may have on specific facets of patients' QoL have until now been underdeveloped. Theoretically, PI could be expected to be related to lower QoL since it can lead to a deficit in approach and rewarding goals. Some research has shown that, for example, in patients with panic disorder and agoraphobia (Kämpfe et al. 2012), the presence of PI has significantly predicted more perceived disability in areas of leisure time, employment, and social and family functioning. Thereby, a closer examination of the relationships between PI and the psychological facets of patients' QoL, before the commencement of treatment, could be particularly beneficial, because it might help clinicians detect possible maladaptive linkages through which PI could be impairing patients' QoL domains.

Consistent with the aforementioned conceptualization of PI as a barrier to achieve approach-oriented and meaningful goals, exploration of the association between PI and specific coping strategies could be also a fruitful issue.

PI seems to constitute a generalized tendency to be unwilling to remain in contact with aversive experiences, reflecting a broad construct that encompasses specific behavioral strategies to alter, or avoid negative inner experiences (Hayes et al. 2004). Based on this consideration, PI could be suspected to prompt the use of both unhelpful emotion-focused strategies, including venting, denial, and self-distraction, and avoidance strategies (Karekla and Panayiotou 2011).

Some studies conducted with healthy samples (Karekla and Panayiotou 2011; Kashdan et al. 2006) have endorsed this assumption, reporting that PI was related to higher levels of self-blame, rumination, emotional inhibition, emotional support, self-distraction, behavioral disengagement, and avoidance, and lower levels of adaptive emotion-oriented strategies, such as positive reframing and detaching from stressful events. With respect to problem-focused coping, the results from these studies have been more discrepant. In Kashdan and colleagues' investigation, PI was negatively correlated with rational coping, whereas no significant relation between PI and active coping and planning was observed in Karekla and Panayiotou's study.

Findings obtained from people with mental disorders depict a similar set of relations. In an investigation conducted with patients suffering from social anxiety, panic disorder, generalized anxiety disorder, or comorbid symptoms, Panayiotou et al. (2014) found that patients, not only scored significantly higher than controls on PI but also employed more maladaptive emotion-oriented strategies and avoidance (i.e., self-distraction, denial, substance use, behavioral disengagement, venting, and self-blame), and lower positive reframing compared to controls.

On the other hand, some coping models have suggested that coping strategies could have a mediating role between more generalized person variables and outcomes, such as affect and quality of life (Lazarus and Folkman 1987). Consistent with this idea, it could be hypothesized that the negative impact of PI on anxious and depressive symptoms, and psychological dimensions of QoL, could be potentially mediated by maladaptive emotion-oriented and avoidance coping strategies.

Although some research has shown that PI was a total mediator of the relationships between rational coping and anxiety-related outcomes, and partially mediated the linkages between avoidance coping and the anxiety-related outcomes (Kashdan et al. 2006), to our knowledge, no previous study has explored until now whether PI could have a direct influence on anxious and depressive symptoms and dimensions of QoL or whether these effects could be mediated by dysfunctional emotion-oriented and avoidance coping strategies.

Clarifying these pathways is particularly important since it would provide a more thorough understanding of what specific maladaptive coping strategies may be influencing the negative impact of PI on symptoms and reduced levels of QoL in patients with mental disorders. Therefore, it could be easier and more effective to establish targets for treatment in a more accurate way.

In sum, in the present study, we aimed to examine the relationships between PI and somatic anxious and depressive symptoms in a sample of clinical patients before they started psychological treatment. We further investigated the association of PI with those QoL dimensions that are more connected to individuals' mental health (i.e., psychological dimensions). Finally, we addressed the association between PI and coping strategies and explored to what degree patients' coping strategies could mediate the impact of PI on the symptoms and the psychological dimensions of QoL.

We hypothesized that PI would be positively related to somatic anxious and depressive symptoms and negatively associated with psychological dimensions of QoL. With respect to coping strategies, we predicted that PI would be positively linked to theoretically maladaptive emotion-focused and avoidance coping strategies and negatively associated with more adaptive coping, such as acceptance and positive reappraisal. Finally, we proposed, as a research question, whether maladaptive

emotion-focused and avoidance coping responses would mediate the relationships between PI and the symptoms and between PI and the psychological domains of QoL.

Method

Sample and Procedure

Participants in the study were recruited from patients who attended a public mental health center to begin CBT. They were referred to the clinic by either their psychiatrist or their primary care physician.

Participants were eligible for inclusion if they were not receiving any type of psychological treatment and met some of following diagnostic criteria: having, as a primary disorder, an Axis I disorder based on the DSM-IV; having both an Axis I and a suspected Axis II disorder; or having more than one Axis I disorder. The exclusion criteria were presenting, as a primary disorder, an Axis II disorder, a substance-related disorder, another cognitive disorder or a psychotic disorder.

First, patients were interviewed by a highly experienced cognitive-behavioral therapist, who was a member of the research team and responsible for the psychological treatment. Patients who fulfilled the inclusion criteria were informed about the study and invited to participate in it. Those who agreed to take part in the study and gave the informed consent received a booklet with different questionnaires. This booklet was delivered either by hand or email, and when completed, was returned to the therapist before the patient began psychological treatment.

The study was planned and performed in line with the ethical guidelines approved by the local Psychologist Colleges of both Madrid and Zaragoza, and invited to participate in it.

Of the 254 patients eligible to participate in the study, 56 were excluded because they did not meet the diagnostic criteria. Of the198 remaining patients, 34 did not fully complete the questionnaires and were discarded from the investigation. Thus, the final sample consisted of 164 patients (50 males and 114 females) with a mean age of 40 years (SD = 11.85).

Measures

The Acceptance and Action Questionnaire II (AAQ-II; Bond et al. 2011; Spanish adaptation of Ruiz et al. 2013) is a 7-item self-report specifically designed for measuring psychological inflexibility or experiential avoidance, with higher scores indicating a high level of psychological inflexibility. Items are rated using a 7-point Likert scale. Internal consistency of the scale was appropriate ($\alpha = 0.89$) in this study.

The Brief COPE (Carver 1997; Spanish adaptation of Morán et al. 2010) is a 28-item questionnaire assessing how people handle stressful situations. It contains 14 subscales: active coping, planning, positive reframing, acceptance, humor, religion, using emotional support, using instrumental support, self-distraction, denial, venting, substance use, behavioral disengagement, and self-blame. Each subscale is measured with two items scored on a 5-point scale ranging from 0 (I usually don't do this at all) to 3 (I usually do this a lot). Alpha coefficients ranged from .50 to .87 in this study.

The Beck Depression Inventory (BDI; Beck et al. 1961; Spanish adaptation of Conde and Useros 1975) is a 21-item measure of depression. Individuals are asked to indicate how they have felt during the previous week by using a four-point Likert scale ranging from 0 to 3. Higher scores on the scale indicate severe levels of depression. Cronbach's α for the scale was adequate ($\alpha = 0.90$) in the present study.

The Hamilton Anxiety Rating Scale (HARS; Hamilton 1959; Spanish adaptation of Carrobles et al. 1986) is a 14-item questionnaire that includes separate measures of severity for both psychic and somatic symptoms related to anxious mood. The items are scored on a 4-point scale ranging from 0 (not present) to 4 (severe). For the purpose of our study, we only included the subscale of somatic anxiety. An example of an item's content is "respiratory symptoms, including chest tightness, sighs, and breathlessness." The Cronbach's alpha value for this subscale was notably high ($\alpha = .86$).

The health survey (SF-36; Ware, Ware Jr et al. 1993; Spanish adaptation of Alonso et al. 1995) is a 36-item self-report instrument to assess health-related QoL. This measure yields two summary scores: a physical component score and a mental component score, with each comprising four specific dimensions. In the current study, we only used the mental component score and the four subscales included in it (i.e., vitality, social functioning, mental health, and few role limitations due to emotional problems), with higher scores indicating better psychological functioning. Internal reliability (Cronbach's α) of the mental component was 0.92, and Cronbach's α for the subscales ranged from 0.82 to 0.87.

Data Analyses

Preliminary analyses were conducted to detect possible outliers and to ensure that data met the assumptions of normality, linearity, and homoscedasticity. Inspection of the outliers showed that a substantial number were on the substance use subscale of the Brief COPE. For this reason, this subscale was dropped from subsequent analyses.

Next, descriptive statistics were computed for all the variables. Pearson correlation coefficients were calculated to examine the association between PI and coping strategies and between PI and coping with somatic anxious and depressive symptoms and psychological dimensions of QoL.

Finally, to examine the potential indirect effect of PI (i.e., independent variable) on symptoms and dimensions of QoL (i.e., dependent variables) through coping strategies (i.e., mediating variables), mediation analyses were carried out by using Preacher and Hayes's method (Preacher and Hayes 2008) (see Fig. 1). The significance of indirect effects was also calculated by using 1000 bootstrapped estimates and 95% bias-corrected-confidence intervals (BCCI). When the confidence interval for the indirect effect did not contain zero, the indirect effect was considered to be significant.

Results

Descriptive Statistics

Descriptive statistics for all the study variables are presented in Table 1. Details of the socio-demographic and clinical characteristics of the 164 patients are provided in

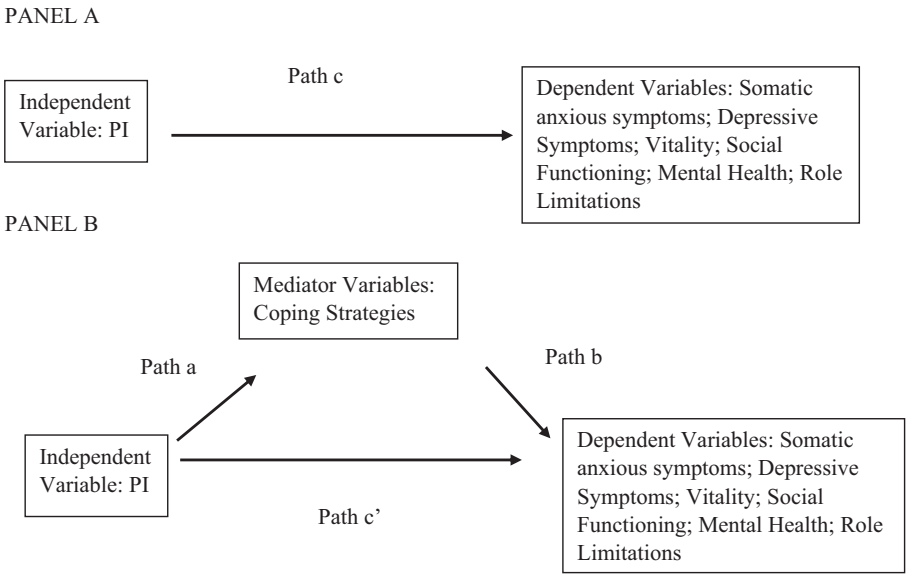

Fig. 1 **a** illustration of the total effect (Path c) of PI on dependent variables. **b** Illustration of the direct effect (Path c') of PI on dependent variables and the indirect effect (Path a × Path b) of PI on dependent variables via coping strategies

Table 1 Descriptive statistics of study variables

	M (SD)	Range	α
PI	30.16 (9.58)	9–49	0.89
Somatic anxious symptoms (SAS)	9.51 (6.74)	0–28	0.86
Depressive symptoms (DS)	20.12 (11.35)	0–51	0.90
Vitality	39.54 (22.39)	0–95	0.85
Social functioning	51.21 (28.51)	0–100	0.82
Mental health	42.60 (21.01)	0–92	0.87
Role limitations[#]	42.68 (43.14)	0–100	0.85
Active coping	3.47 (1.59)	0–6	0.70
Planning	3.13 (1.67)	0–6	0.61
Positive reframing	2.44 (1.53)	0–6	0.68
Acceptance	3.08 (1.62)	0–6	0.57
Humor	1.16 (1.44)	0–6	0.74
Religion	1.21 (1.59)	0–6	0.78
Emotional support	3.21 (1.66)	0–6	0.78
Instrumental support	3.31 (1.61)	0–6	0.68
Self-distraction	3.31 (1.61)	0–6	0.50
Denial	1.60 (1.68)	0–6	0.62
Venting	2.67 (1.62)	0–6	0.50
Behavioral disengagement	1.63 (1.37)	0–6	0.59
Self-blame	3.62 (1.74)	0–6	0.67

[#] A high score on this variable means few role limitations due to emotional problems

Table 2. With respect to the distribution of diagnoses, 61 patients (37%) suffered from an adjustment disorder. Twenty-nine patients (18%) presented some mood disorder, 27 (15%) had some anxiety disorder, and 32 (20%) had received multiple diagnoses.

Correlational Analyses

To examine the associations of PI with somatic anxious and depressive symptoms, psychological dimensions of QoL and coping strategies, zero-order correlations were calculated.

As seen in Table 3, PI was related to higher levels of somatic anxious and depressive symptoms, denial, venting, behavioral disengagement, and self-blame coping strategies. PI was also negatively correlated with all the psychological dimensions of QoL and positive reframing and acceptance coping strategies.

Table 2 Descriptive statistics of socio-demographic and clinical characteristics of the sample

	n (%)
Sex:	50 (30%)
male	114 (70%)
female	
Marital Status:	32 (20%)
single	97 (59%)
married or with partner	31 (19%)
divorced or separated	4 (2%)
Widower	
Current employment status:	17 (11%)
Housewife	12 (7%)
Student	76 (46%)
Paid work	4 (2%)
Retired from work	34 21%)
Not employed	21 (13)
Other	
Diagnosis:	20 (12%)
Major depression	9 (6%)
Dysthymic disorder	3 (2%)
Specific phobia	9 (6%)
Panic disorder	2 (1%)
Agoraphobia	2 (1%)
Social anxiety	4 (2%)
Obsessive-compulsive disorder	5 (3%)
Generalized anxiety disorder	2 (1%)
Acute stress disorder	61 (37%)
Adjustment disorder	8 (5%)
Bereavement	7 (4%)
Others diagnoses (eating disorders, impulse-control disorders, or somatoform disorders)	32 (20%)
Multiple diagnoses#	
Age (mean and SD)	40,27 (11,85)

#Having both an Axis I and a suspected Axis II disorder or having more than one Axis I disorder

Table 3 Correlations between PI and coping strategies and with symptoms and psychological domains of QoL

	PI	SAS	DS	Vitality	Social functioning	Mental health	Role limitations
PI	–	0.45***	0.66***	−0.53***	−0.55***	−0.61***	−0.50***
Active coping	−0.11	−0.02	−0.28***	0.04	0.10	0.08	0.06
Planning	0.04	0.02	−0.19*	0.01	0.04	0.04	−0.02
Positive reframing	−0.22**	−0.06	−0.19*	0.05	0.10	0.12	0.04
Acceptance	−0.33***	−0.18*	−0.38***	0.17*	0.27***	0.27***	0.18*
Humor	−0.14	−0.15	−0.21**	0.10	0.09	0.17*	0.09
Religion	0.09	0.19*	0.08	−0.18*	−0.11	−0.23**	−0.07
Emotional support	0.00	0.11	0.00	−0.16*	−0.08	−0.09	−0.09
Instrumental support	0.04	0.12	0.06	−0.12	−0.11	−0.14	−0.11
Self-distraction	0.05	−0.04	−0.07	0.03	0.06	0.06	−0.03
Denial	0.33***	0.43***	0.39***	−0.28***	−0.30***	−0.39***	−0.18*
Venting	0.22**	0.22***	0.15*	−0.26***	−0.27***	−0.23**	−0.30***
Behavioral disengagement	0.34***	0.10	0.34***	−0.12	−0.12	−0.14	−0.13
Self-blame	0.40***	0.09	0.33***	−0.14	−0.20*	−0.19*	−0.16*

***$p < 0.001$; **$p < 0.01$; *$p < 0.05$

Correlations between coping strategies and somatic anxious and depressive symptoms and psychological dimensions of QoL were further obtained to test the mediating effect of coping. As depicted in Table 3, active coping, planning, positive reframing, acceptance, and humor were negatively connected to depressive symptoms, whereas denial, venting, behavioral disengagement, and self-blame were positively related to them. Religion, denial, and venting coping correlated with more somatic anxious symptoms, whereas their association with acceptance coping was negative.

Furthermore, positive correlations between acceptance coping and all the psychological dimensions of QoL were found, whereas correlations of denial and venting with those dimensions were negative. Religion and emotional support were related to lower levels of vitality, and the mental health dimension of QoL was negatively associated with religion and positively linked to the use of humor. Finally, self-blame negatively correlated with social functioning and mental health and positively with role limitations due to emotional problems.

Mediation Analyses

Based on correlational data, only those coping strategies that significantly correlated with either PI or symptoms and psychological dimensions of QoL were included in the mediation analyses to test the possible indirect effect of PI through coping.

The results of these analyses are presented in Tables 4, 5 and 6.

With respect to somatic anxious symptoms, denial was the only coping strategy that played a mediating effect between PI and this dependent variable as the confidence interval obtained did not contain zero (estimated indirect effect: 0.06, 95% CI ranged

Table 4 Mediation analyses: effect of PI on somatic anxious symptoms and depressive symptoms through coping strategies

Outcome: SAS					Indirect effect	Bootstrapping BC 95% CI
	c	c′	a	b	axb (*SE*)	Lower upper
PI	0.31***	0.22***				
Total indirect effect					0.08 (03)	0.02 0.16
Religion			0.01	0.41	0.00 (0.00)	− 0.00 0.03
Acceptance			− 0.05	− 0.01	0.00 (0.01)	− 0.03 0.03
Denial			0.05	1.15	0.06 (0.02)	0.02 0.13
Venting			0.03	0.38	0.01 (0.01)	− 0.00 0.05
Outcome: DS					Indirect Effect	Bootstrapping BC 95% CI
	c	c′	a	b	axb (*SE*)	Lower upper
PI	0.78***	0.60***				
Total indirect effect					0.17 (05)	0.06 0.29
Positive reframing			− 0.03	− 0.11	0.00 (0.01)	− 0.03 0.03
Acceptance			− 0.05	− 0.96	0.05 (02)	00 0.13
Denial			0.05	1.12	0.06 (03)	0.01 0.14
Venting			0.03	− 0.14	− 0.00 (01)	−0.04 0.02
Behavioral disengagement			0.04	0.54	0.02 (02)	− 0.02 0.09
Self-blame			0.07	0.38	0.02 (03)	− 0.03 0.09

Path c denotes the total effect of PI on each type of symptoms. Path c′ denotes the direct effect of PI on each type of symptoms after controlling for the coping strategies effect. Path a denotes the effect of PI on each coping strategy. Path b denotes the effect of each coping strategy on each type of symptoms. Unstandardized Bs are shown. BC = bias corrected. SE = standard error. CI = confidence interval. ***$p < 0.001$

from 0.02 to 0.13). Regarding depressive symptoms, there was also an indirect effect through denial (estimated indirect effect: 0.06 95% CI ranged from 0.01 to 0.14) and acceptance (estimated indirect effect: 0.05, 95% CI ranged from 0.00 to 0.13), which revealed that the relationship of PI with increased depressive symptoms was mediated by the use of high levels of denial and lower levels of acceptance.

These results also showed that, although there was a significant indirect effect through denial in the case of anxious symptoms and through denial and acceptance in the case of depressive symptoms, PI exerted a smaller but significant direct effect (see path c′ on Table 4) on both types of symptoms when coping variables were added to each model.

Regarding the psychological dimensions of QoL, the effect of PI on social functioning and more role limitations was significantly mediated through venting (estimated indirect effect: − 0.09, 95% CI ranged from − 0.28 to − 0.01, for social functioning; estimated indirect effect: − 0.20, 95% CI ranged from − 0.49 to − 0.05, for more role limitations), whereas the relation between PI and the dimension of mental health was only mediated through denial (estimated indirect effect: − 0.17, 95% CI ranged from − 0.25 to − 0.03). Mediation analyses further revealed that the

Table 5 Mediation analyses: effect of PI on vitality and social functioning through coping strategies

Outcome: vitality					Indirect effect	Bootstrapping BC 95% CI
	c	c′	a	b	axb (*SE*)	Lower Upper
PI	− 1.24***	− 1.12***				
Total indirect effect					−0.11 (08)	− 0.28 0.07
Religion			0.01	− 1.42	− 0.02 (0.02)	− 0.10 0.00
Emotional Support			0.00	− 1.29	0.00 (0.02)	− 0.05 0.04
Acceptance			− 0.05	− .23	0.01 (0.05)	− 0.10 0.11
Denial			0.05	− .95	− 0.05 (.06)	− 0.18 0.06
Venting			0.03	− 1.42	− 0.05 (0.04)	− 0.17 0.02
Outcome: social functioning					Indirect effect	Bootstrapping BC 95% CI
	c	c′	a	b	axb (*SE*)	Lower Upper
PI	− 1.64***	− 1.43***				
Total indirect effect					− 0.21 (14)	− 0.53 0.04
Acceptance			− 0.05	1.46	− 0.08 (0.07)	− 0.27 0.04
Denial			0.05	− 1.74	− 0.09 (0.07)	− 0.27 0.03
Venting			0.03	− 2.55	− 0.09 (0.06)	− 0.28–0.01
Self-blame			0.07	0.89	0.06 (0.08)	− 0.10 0.24

Path c denotes the total effect of PI on each QoL dimension. Path c′ denotes the direct effect of PI on each QoL dimension after controlling for the coping strategies effect. Path a denotes the effect of PI on each coping strategy. Path b denotes the effect of each coping strategy on each QoL dimension. Unstandardized Bs are shown. BC = bias corrected. SE = btandard error. CI = confidence interval. ***$p < 0.001$

direct effect of PI on all these QoL dimensions was also significant, since the size of path c′, although smaller than that of path c, maintained its significance in the mediation models (see Tables 5 and 6).

With regard to vitality, no significant indirect effect through any coping response was found, which demonstrated that PI had a negative and significant direct effect on this QoL dimension.

Discussion

In this study, we examined the association between PI and somatic anxious and depressive symptoms and some psychological facets of QoL, specifically vitality, social functioning, mental health, and fewer role limitations, in patients with a variety of mental disorders before they started CBT. Given the paucity of research into PI and coping strategies, we tried to analyze the connections between PI and coping strategies and explored the potential mediating role of some emotion-focused and avoidance coping strategies, in the relationship between PI and the aforementioned symptoms and psychological facets of QoL.

Table 6 Mediation analyses: effect of PI on mental health and role limitations through coping strategies

Outcome: mental health					Indirect effect	Bootstrapping BC 95% CI
	c	c′	a	b	axb (*SE*)	Lower upper
PI	−1.35***	−1.18***				
Total indirect Effect					−0.17 (0.09)	−0.37 0.02
Humor			−0.02	0.57	−0.01(.02)	−0.07 0.02
Religion			0.01	−2.03	−0.03 (0.02)	−0.10 0.02
Acceptance			−0.05	0.73	−0.04 (0.04)	−0.15 0.04
Denial			0.05	−2.16	−0.12 (0.05)	−0.25 0.03
Venting			0.03	−0.96	−0.03 (0.03)	−0.13 0.02
Self-blame			0.07	1.00	0.07 (0.06)	−0.04 0.21
Outcome: role Limitations					Indirect effect	Bootstrapping BC 95% CI
	c	c′	a	b	axb (*SE*)	Lower upper
PI	−2.26***	−2.17***				
Total indirect effect					−0.08 (.20)	−0.50 0.28
Acceptance			−0 .05	0.42	−0.02 (.10)	−0.23 0.19
Denial			0.05	0.14	0.00 (.11)	−0.24 0.22
Venting			0.03	−5.58	−.20 (.10)	−0.49–0.05
Self-blame			0.07	1.89	0.13 (.12)	−0.08 0.41

Path c denotes the total effect of PI on each QoL dimension. Path c′ denotes the direct effect of PI on each QoL dimension after controlling for the coping strategies effect. Path a denotes the effect of PI on each coping strategy. Path b denotes the effect of each coping strategy on each QoL dimension. Unstandardized Bs are shown. BC = bias corrected. SE = standard error. CI = confidence interval. ***$p < 0.001$

First, the results showed that PI was related to a high number of somatic and anxiety-related symptoms. This finding is of particular interest because the impact of PI on anxious bodily sensations has been little studied in the field of anxiety psychopathology and in patients with different psychiatric disorders, and because it supports the notion that an attitude of intolerance toward negative somatic sensations, by rigidly attempting to escape, suppress or avoid them, represents a useless strategy to handle them.

PI was also linked to more depressive symptoms, which corroborates previous results (Kashdan et al. 2009; Rueda and Valls 2016) and strengths the idea that acting on this inflexible attitude has a harmful influence on core aspects of depressive symptoms in individuals suffering from not only depression but also different mental disturbances.

Taken together, these results seem to endorse the potential transdiagnostic role of PI as a vulnerability factor in relation to the presence or maintenance of a variety of mental disorders, and converge with prior empirical evidence about PI as a common process that underlies depressive and anxiety psychopathology (Chawla and Ostafin 2007; Kashdan et al. 2006; Spinhoven et al. 2017).

Findings from this study also revealed that certain facets of patients' QoL, related to vitality, social functioning, mental health, and fewer role limitations, were adversely

impacted by PI, suggesting that the rigid and unbalanced functioning that PI involves can make clinical patients to be disconnected from valued goals relevant to their well-being (Kashdan and Rottenberg 2010; Kashdan et al. 2009).

Regarding the association between PI and coping strategies, the data showed that PI emerged as a positive correlate associated with dysfunctional emotion-focused and avoidance coping strategies, such as denial, venting, behavioral disengagement, and self-blame. PI was also inversely related to some strategies, such as positive reframing and acceptance, which seem to be adaptive to the extent that they help regulate emotions depending on environmental and internal changes (Aldao and Nolen-Hoeksema 2012). PI did not correlate with any problem-focused strategy, such as active coping or planning, with these actions being appropriate responses when particularly taxing aspects of the environment that requires changing.

Taken as a whole, these findings are of value because they reveal that patients with a high level of PI are more engaged in the utilization of inflexible emotion-oriented and avoidance coping strategies, without regarding to either personal or contextual cues. Moreover, this kind of patients tends not to rely on those coping strategies that would be more appropriate to alleviate emotional distress and eliminate stressors.

This study also explored and gained an in-depth understanding of the potential mediating effect of coping strategies. In particular, an indirect effect of PI on somatic anxious and depressive symptoms and mental health was found via denial coping. Furthermore, acceptance appeared to act as a mediator of the association between PI and depressive symptoms. Based on these results, it is plausible to think that patients who deliberately avoid unwanted experiences, due to their PI, could not have the adequate coping skills to manage and accept these types of experiences, employing denial to face them, hence, contributing to prompt more physical and emotional distress.

Additionally, it was observed that whereas the effect of PI on vitality was direct, without any mediating influence by any coping strategy. However, venting was a relevant coping strategy through which PI was connected to lower social functioning and more role limitations. This set of relations suggests how PI can induce inadequate modulation and expression of negative emotions, leading patients to show an escalated expression of negative emotions (Skinner et al. 2003). This behavior could reduce the amount of support provided by other people and restrict the number of daily tasks performed by the patients.

The present study has a number of strengths and limitations that should be acknowledged.

A major strength of these results has been, first, to demonstrate how PI constitutes a strong predictor of both somatic and more anxiety-related symptoms, as well as depressive symptoms in psychiatric patients, confirming the ineffective role that PI plays in handling these symptoms perhaps making them more salient and frequent.

Another important strength has been taken into consideration of specific domains of QoL, rather than use of a more global QoL measure, to determine more accurately what aspects of the patients' QoL were negatively impacted by PI before they started CBT. Close examination of these areas and their inclusion as part of the treatment plan can be critical to promote patients' recovery and probably to prevent future relapses.

A final relevant aspect has been a clearer understanding of the associations between PI and coping strategies, showing how PI is a process particularly linked to unhelpful

emotion-focused and avoidance coping strategies and lower use of more adaptive emotional and instrumental coping responses.

Concerning the study limitations, it should be noted that the selected patients presented an array of mental disorders, and no differentiation was made among them following the diagnostic criteria. Replication of these results by defining specific groups of patients with more homogeneous diagnoses is needed.

Additionally, given that acceptance is considered the opposite pole of PI according to ACT, the weak correlation obtained in the study between PI and the acceptance coping strategy was surprising, as well as the small mediated effect exerted by this coping response. As the internal consistency of the acceptance subscale was moderate, correlations with this variable and its estimated meditated effect could have been underestimated. Thus, future studies focusing on the connections between PI and an acceptance coping strategy should be conducted by employing a more reliable measure of this coping response.

Finally, this investigation was cross-sectional, which limits the possibility to infer causal relationships among the study variables. As a result, it is not possible to conclude whether PI is an etiological factor of more symptoms, maladaptive coping, and impaired QoL or merely their correlate. However, given that mediational analysis is based on the theoretical assumption that there is a causal chain among the independent variable, the mediator, and the dependent variable, testing for the indirect effect of PI on symptoms and QoL dimensions through coping seem to provide some preliminary, although not conclusive, data about this possible causal effect.

In conclusion, the present study adds new evidence on the deleterious effect of PI on both somatic and depressive symptoms in psychiatric patients. Equally, it highlights that, before the application of CBT, it is important for the therapist to clarify, in collaboration with the patient, what specific dimensions of his or her QoL may be damaged as a consequence of behaving and thinking in an inflexible manner. Finally, the toxic pattern of relations observed between PI and maladaptive emotion-focused and avoidance coping strategies, and the preliminary evidence confirming the indirect effect of PI on symptoms and QoL dimensions through these types of coping strategies, support the need to help the patient learn and use with flexibility other adaptive emotion-focused and instrumental coping strategies when encountering unwanted inner experiences or stressful external situations.

Compliance with Ethical Standards

Conflict of Interest The authors declare that they have no conflict of interest.

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