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Meaning in life buffers the association between clinical anxiety and global maladjustment in participants with common mental disorders on sick leave

José H. Marco[a,*], Sandra Alonso[b,c]

[a] Universidad de Valencia, Facultad de Psicología, Departamento de Personalidad, Evaluación y Tratamiento Psicológico, España
[b] Escuela de doctorado. Universidad Católica de Valencia, San Vicente Mártir, España
[c] Catedra UMIVALE Innovación e investigación en patologías del trabajo, Valencia, España

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ABSTRACT

An important goal of mental health specialists is to improve the quality of life and the adaptation of people with common mental disorders on sick leave. Meaning in life is a protective factor for people adjusting to distress and negative events. This study explores the buffering role of meaning in life in the relationship between clinical anxiety or negative affect and maladjustment in participants with common mental disorders on sick leave. The sample was 167 participants with Adjustment, Anxiety and, Depressive Disorders; $n = 115$ were women and $n = 52$ men. Participants' mean age $M = 42.16$ ($SD = 9.91$) years. We performed zero-order correlations and hierarchical regression analyses. Meaning in life moderated and buffered the association between clinical anxiety or negative affect and global maladjustment to daily life. These findings suggest that Meaning in life is a relevant variable in the adjustment of common mental disorders on sick leave.

1. Introduction

The number of workers on sick leave for mental health reasons has increased in recent years. Approximately 20% of the population will suffer from a mental disorder at some time during their working life (Organisation for Economic Co-operation and Development (2012). Depression and anxiety are the most disabling disorders worldwide, measured in years of living with the disability (Whiteford et al., 2013). These pathologies make up 3.48% of non-work-related sick leaves (Vicente-Herrero et al., 2013).

Sick leave in patients with mental disorders leads to individual suffering, decreased self-esteem, and reduced general well-being (e.g., Andersen et al., 2012). It entails a weakening of the person's economy, social isolation, vulnerability, exclusion from the labor market, and poverty (e.g., Plaisier et al., 2010). An important goal of mental health specialists is to improve the quality of life, reduce the suffering, and improve the adaptation of people with mental disorders on sick leave (Van Beurden et al., 2013). The severity of a mental disorder depends on three elements: the number of symptoms, the qualitative value of the symptoms (e.g. presence of suicidal ideation or not), and the effects of these symptoms on the patient's coping in daily life; thus, maladjustment to daily life is a main sign of severity (Echeburúa et al., 2000). Sick leave in patients with mental disorders leads to individual suffering, decreased self-esteem, and reduced general well-being (e.g., Andersen et al., 2012). It involves a worsening of the person's economy, social isolation, vulnerability, exclusion from the labor market, and poverty (e.g., Plaisier et al., 2010). An important goal of mental health specialists is to improve quality of life, reduce suffering, and improve the adaptation of people with mental disorders on sick leave (Van Beurden et al., 2013). Studying the moderator variables that improve the lives of patients with mental disorders on sick leave would allow us to improve their degree of adjustment.

George and Park (2016), stated that meaning is composed of three dimensions: a) Comprehension, which refers to the degree to which people perceive a sense of coherence and understanding about their lives or world; b) Purpose, which is the extent to which people experience life as being directed and motivated by valued life goals, and c) Mattering, which refers to the degree to which people feel that their existence has significance, importance, and value in the world. By contrast, low meaning in life is a negative cognitive-emotional-motivational state associated with hopelessness, the perception of lack of control over one's own life, and the absence of life goals.

Meaning in life is theorized to be a protective factor for people adjusting to distress and negative events (e.g., Frankl, 1959/2006; Gillies and Neymeyer, 2006; Winger et al., 2015; Van Tongeren et al., 2017). Specifically, in the context of stressful events, Park (2010) distinguished between two main constructs. On the one hand, Global meaning refers to individuals' general orientation systems, composed of

* Corresponding author.
E-mail address: jose.h.marco@uv.es (J.H. Marco).

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beliefs (about justice, predictability, coherence, etc..), objectives (desired processes, events or results, such as health or relationships, work, religion, etc..), and feelings of meaning or purpose in life, which are the emotional aspects of global meaning and stem from viewing one's actions as directed toward a desired goal (Reker and Wong, 1988; Slattery and Park, 2011).

On the other hand, Situational Meaning begins with the occurrence of a negative event or loss and describes an ongoing set of processes and outcomes, including assigning meaning to the event (appraised meaning), determining discrepancies between appraised and global meaning, meaning-making, meanings made, and adjusting to the event (Park, 2010). Through meaning-making, people may experience reductions in distress and negative emotions and increases in their sense of meaning in life (Park, 2010). The meaning-making model suggests that recovering from a stressful event involves reducing the discrepancy between its situational meaning and its global meaning (Joseph and Linley, 2005).

Several studies have found that constructing meaningful interpretations is an effective coping strategy for dealing with stressors and an adaptive response to the occurrence of the negative event (e.g. Park and Baumeister, 2017), and a sense of meaning can protect against anxiety, adjustment, and depression symptoms after highly stressful events that produce great interference in people's lives (Frazier et al., 2001; Krause, 2007; Updegraff et al., 2008). Results from these studies have found meaning to be positively linked to post-traumatic growth and the ability to make sense of the stressor, and negatively linked to distress and other adjustment and post-traumatic stress disorder symptoms (Lancaster and Carlson, 2015; Steger et al., 2015).

Thus, it is necessary to study the possible moderating variables that could improve the life adjustment of patients with mental disorders on sick leave and one question that has not yet been addressed is whether meaning in life could act as a buffer between clinical anxiety or negative affect and adjustment to daily life in individuals with common mental disorders on sick leave

The aims of the present study are two-fold: a) to explore the buffering role of meaning in life in the relationship between clinical anxiety and maladjustment in a clinical sample on sick leave; b) to explore the buffering role of meaning in life in the relationship between negative affect and maladjustment in a clinical sample on sick leave. Therefore, first, we hypothesize that meaning in life will act as a buffer between clinical anxiety and maladjustment, and second, that meaning in life will act as a buffer between negative affect and maladjustment, in participants with mental disorders on sick leave.

2. Method

2.1. Participants

The participants in the study were sequentially recruited between June 1st 2016 and December 30th 2017 in a collaborative Social Security Insurance Group in Spain that evaluates and treats workers when they are on sick leave for mental disorders. The inclusion criteria were: a) participants of both sexes between 18 and 65 years old in a situation of sick leave due to a mental disorder, b) who met the DSM5 criteria (APA, 2013) for Depressive Disorders, Adjustment Disorders, or Anxiety Disorders.

Participants were excluded from the study if they had been diagnosed with personality disorders or mental retardation. Finally, all the participants were European Whites, and all of them understood Spanish. Participation was voluntary, and informed consent was given by participants, who received no compensation. Ethical approval for carrying out this study was granted by the University Ethics Committee.

The sample was composed of 167 participants with the following diagnoses: 60.5%, $n = 101$, met the criteria for Adjustment Disorders; 24.6%, $n = 41$, for Anxiety Disorders (16.2%, $n = 27$, Generalized Anxiety Disorder; 4.2%, $n = 7$, Agoraphobia; 4.2%, $n = 7$, Unspecified Anxiety Disorder); and 15%, $n = 25$, for Major Depressive Disorder. In this sample, 68.9% ($n = 115$) were women and 31.1% ($n = 52$) men. Participants' age range was broad, 18–65 years old, with an average age of 42.16 ($SD = 9.91$) years; 32.3% ($n = 54$) had a primary education level, 39.5% ($n = 66$) had a secondary education level, 15% ($n = 25$) had mid-level university studies, and 13.2% ($n = 22$) had high-level university studies. Regarding marital status, 71.9% ($n = 120$) were married or living with a partner, and 28.1% ($n = 47$) were single. Regarding the occupational level, 85% ($n = 142$) were laborers or workers, and 15% ($n = 25$) were supervisors or bosses.

2.2. Measures

Structured Clinical Interview for DSM-IV Axis I disorders (SCID I; First et al., 2002). This instrument makes it possible to obtain the diagnoses for Adjustment Disorders; Anxiety Disorders, Generalized Anxiety Disorder; Agoraphobia, Panic Disorder, and Major Depressive Disorder according to the DSM-IV-TR (APA, 2000) and DSM5 (APA, 2013) . It is widely used in mental health research and clinical practice. It presents adequate psychometric properties with high reliability for the different diagnoses (Kappa = 0.66–0.83) (Lobbestael et al., 2011).

Beck Anxiety Inventory (BAI; Beck and Steer, 1993). We utilized the Spanish adaptation of the BAI (Sanz and Navarro, 2003). This inventory consists of 21 items with four response alternatives (0–4) to assess anxiety symptoms. It assesses emotional, cognitive, physiological, and behavioral dimensions of clinical anxiety. It establishes different quantitative ranges of clinical anxiety: no anxiety or minimal anxiety (<7), between mild and moderate anxiety (8–15), moderate anxiety (16–25), and severe anxiety (>26). In our sample, adequate internal consistency was found ($\alpha = 0.91$).

Purpose in Life (PIL; Crumbaugh and Maholick, 1969). We used the Spanish version of the PIL-Part A from the original Crumbaugh and Maholic (1969) 20-item Likert-type scale with seven response categories (categories 1 and 7 have specific labels, and category 4 indicates neutrality). The PIL offers a measure of different aspects of meaning in life (e.g. enthusiasm vs. boredom, presence of clear life goals, having a reason to be alive, purpose, capacity to find meaning, satisfaction with life, etc.). The scores range between 20 and 140 points, and they identify three levels: scores below 90 indicate the absence of meaning in life; scores between 90 and 105 indicate uncertainty about meaning of life; and scores above 105 indicate the achievement of meaning in life (Noblejas de la Flor, 2000). The Spanish version offers good psychometric properties and high reliability ($\alpha = 0.88$) (Noblejas de la Flor, 2000), and in our sample it showed adequate internal consistency ($\alpha = 0.85$).

Maladjustment Scale (MS; Echeburúa et al., 2000). This scale assesses the level of overall maladjustment to daily life: work, social life, free time, marital adjustment, and family adjustment. In this study, maladjustment refers to the severity of the negative interference of a mental disorder in everyday life, both overall and in more specific areas (work, studies, social life, free time, relationship with partner, and family life). This six-item self-report measure, based on a 5-point scale, ranges from 0 to 30. For this research, we only used the item for global maladjustment to everyday life ("to what extent has my normal life been affected by my current problems?"), which was the most relevant item in our previous study (range = 0–5) (cut off = 2). These measures have been extensively used in research and clinical practice (Echeburúa et al., 2014).

Positive and Negative Affect Schedule (PANAS; Watson et al., 1988). This twenty-item self-report measure is rated on an 8-point scale. The PANAS is structured in two scales that measure positive and negative affect. For this research only the Negative Affect subscale was utilized. Negative Affect is a general dimension of subjective distress and unpleasant engagement that includes a variety of aversive mood states, including anger, contempt, disgust, guilt, fear, and nervousness

(Watson et al., 1988). This instrument has shown good psychometric characteristics in the Spanish population (Joiner et al., 1997). In our sample, adequate internal consistency was found ($\alpha = 0.73$).

2.3. Procedure

At baseline, the diagnosis was established in one session using the SCID-I (First et al., 2002). In the second session, the participants filled out the BAI, PANAS, MS, and PIL questionnaires.

2.3.1. Statistical procedure

Univariate tests of normality were performed, and we confirmed that the scores were normally distributed in the subscales (PIL, K-S = 0.046; $p = 0.20$; BAI, K-S = 0.05; $p = 0.06$; PANAS, K-S = 0.043 $p = 0.20$; Overall Maladjustment, K-S = 0.06, $p = 0.07$. There were no missing data.

First, we performed zero-order correlations to discover the magnitude of the relationship between the variables used. Second, for this study, we used a moderation analysis that is usually employed in studies with a clinical population (e.g. Marco et al., 2017), following the recommendations of Fraizer et al. (2004). In the first hierarchical regression analyses, we used Meaning in life (PIL) and Anxiety (BAI) as predictor variables, and the Maladjustment Scale (MS) as the dependent variable. In the first step, Gender, Age, and Educational Level were controlled. In the second step, Anxiety (BAI) and the Maladjustment Scale (MS) were entered. In the third step, Meaning in life (PIL) scores were entered. In the fourth step, the interaction term between Anxiety (BAI) and Meaning in life (PIL) was entered. In the second hierarchical regression analyses, we used Meaning in life (PIL) and Negative Affect (PANAS) as predictor variables, and the Maladjustment Scale (MS) as the dependent variable. In the first step, Gender, Age, and Educational Level were controlled. In the second step, Negative Affect (PANAS) and the Maladjustment Scale (MS) were entered. In the third step, Meaning in life (PIL) scores were entered. In the fourth step, the interaction term between Negative Affect (PANAS) and Meaning in life (PIL) was entered. In each step, centered variables were used to avoid multicollinearity (Frazier et al., 2004). If the addition of the interaction term in the fourth step added significant predictive variance to the regression model, this indicated a moderating effect of Meaning in life (PIL) in the association between Anxiety (BAI) and the Maladjustment Scale (MS) or the association between Negative Affect (PANAS) and the Maladjustment Scale (MS) (Cohen and Cohen, 1983; Frazier et al., 2004). Analyses were performed using the enter method. Data were analyzed using SPSS 23 (SPSS, Chicago, IL).

3. Results

Table 1 shows means, standard deviations, and zero-order correlations for the variables. Participants had high scores on Anxiety (BAI) ($M = 28.31$, $SD = 11.70$), the Maladjustment Scale ($M = 3.83$, SD = 1), and Negative Affect (PANAS), and low Meaning in life (PIL) ($M = 78.91$, $SD = 19.23$). Meaning in life (PIL) was found to be highly and inversely correlated with Negative Affect (PANAS) ($r = -0.50$, $p < 0.001$), and moderately with the Maladjustment Scale (MS) ($r = -0.41$, $p < 0.001$) and Anxiety (BAI) ($r = -0.38$, $p < 0.001$). The rest of the correlations appear in Table 1

Table 1
Mean, standard deviation, and zero order correlations for the variables.

	M (SD)	2	3	4
1. Meaning in Life (PIL)	78.91 (19.23)	−0.38**	−0.41**	−0.50**
2. Beck Anxiety Inventory	28.31 (11.70)	–	0.39**	0.59**
3. Maladjustment Scale	3.83 (1.01)		–	0.45**
4. PANAS Negative Affect	32.03 (8.47)			–

Note. PIL = Purpose in Life; PANAS = Positive and Negative Affect Schedule.
** $p < 0.01$

As Table 2 shows, Meaning in life (PIL) moderated and buffered the association between Anxiety (BAI) and the Maladjustment Scale (MS) when Gender, Age, and Educational Level were controlled. After Anxiety (BAI) was entered, Meaning in life (PIL) predicted the Maladjustment Scale (MS), both in addition to Anxiety (BAI) and when interacting with Anxiety (BAI), thus supporting a moderating impact of Meaning in life (PIL) in the association between Anxiety (BAI) and the Maladjustment Scale (MS) ($R^2 = 0.25$, $F_{(1,166)} = 9.266$, $p < 0.001$). Fig. 1 shows that in patients with higher levels of Meaning in life (PIL), increased Anxiety (BAI) corresponded to smaller increases in the Maladjustment Scale than in the patients with low Meaning in life (PIL).

Moreover, Meaning in life (PIL) moderated and buffered the association between Negative Affect (PANAS) and the Maladjustment Scale (MS) when Gender, Age and Educational Level were controlled. After Negative Affect (PANAS) was entered, Meaning in life (PIL) predicted the Maladjustment Scale score, both in addition to Negative Affect (PANAS) and when interacting with Negative Affect (PANAS), thus supporting a moderating impact of Meaning in life (PIL) in the association between Negative Affect (PANAS) and the Maladjustment Scale (MS) ($R^2 = 0.27$, $F_{(1,166)} = 9.367$, $p < 0.001$). Fig. 2 shows that in patients with higher levels of Meaning in life (PIL), higher Negative Affect (PANAS) corresponded to smaller increases on the Maladjustment Scale (MS) than in patients with low Meaning in life (PIL). Potential multicollinearity between the predicting variables was rejected because the values of both tolerance and the variance inflation factor (VIF) ranged between 0.73 and 0.96, and between 1.03 and 1.33, respectively, which meets literature requirements (O'Brien, 2007).

4. Discussion

The aims of the present study were two-fold: a) to explore the buffering role of meaning in life in the relationship between clinical anxiety and maladjustment in a clinical sample on sick leave; b) to explore the buffering role of meaning in life in the relationship between negative affect and maladjustment in a clinical sample on sick leave.

The main results of this study show, first, that meaning in life moderated and buffered the association between clinical anxiety and global maladjustment to daily life in participants with common mental disorders on sick leave. Therefore, the first hypothesis was confirmed. Our findings are consistent with previous results showing that meaningful interpretations are an effective strategy for coping with stressors and an adaptive response to the occurrence of the negative event (Frazier et al., 2001; Krause, 2007; Park and Baumeister, 2017; Updegraff et al., 2008).

The second result of this study was that meaning in life moderated and buffered the association between negative affect and global maladjustment to daily life in participants with mental disorders on sick leave. Therefore, the second hypothesis was also confirmed. Our findings are consistent with previous studies showing that the ability to make meaning from a negative event or stressor is negatively associated with stress (Van Tongeren et al., 2017) and psychopathology (Schulenberg and Melton, 2010; Schulenberg et al., 2011; Volkert et al., 2014), anxiety and depression (Steger et al., 2009), negative affect, activation, hunger, and other adjustment disorder symptoms (King et al., 2006; Lancaster and Carlson, 2015; Steger et al., 2015). They also support the buffer role of meaning in life, indicating that when individuals can maintain a sense of meaning and purpose in a stressful situation, they report and experience better global adjustment and are better able to return to positive levels of adjustment (Davis et al., 2000; Janoff-Bulman, 1992; Updegraff et al., 2008), well-being (Steger, 2012; Glaw et al., 2017) and positive affect (Burrow and Hill, 2011).

Having a high level of meaning in life buffers against negative affect or clinical anxiety through several paths: a) On the one hand, it facilitates adaptation by allowing us to understand (coherence) the negative events in a manner consistent with our global meaning (Park, 2010); b)

Table 2
Hierarchical regression analyses predicting global maladjustment.

Moderator Variable PIL	Step	Variable entered	B standardized	Total R^2	ΔR^2	Durbin-Watson
	1	Gender	0.080	0.00		
		Age	0.081	0.00		
		Educational Level	0.04	0.00		
	2	BAI	0.395***	0.15	0.15***	
	3	BAI	0.289***	0.23	0.8***	
		PIL	−0.306***			
	4	BAI	0.263***	0.25	0.02*	2.101
		PIL	−0.344***			
		BAI x PIL	0.115*			
	1	Gender	0.133	0.00		
		Age	0.073	0.00		
		Educational Level	0.021	0.00		
	2	PANAS N.	0.458***	0.20	0.20***	
	3	PANAS N.	0.342***	0.24	0.04**	
		PIL	−0.239**			
	4	PANAS N.	0.351***	0.27	0.03*	2.011
		PIL	0.−249**			
		PANAS N. x PIL	0.144*			

Note. Note. PIL = Purpose In Life; BAI = Beck Anxiety Inventory; PANAS = Positive and Negative Affect Schedule; N = Negative.
$^{**}p < 0.001$.$^{*}p < 0.05$, $^{**}p < 0.01$, $^{***}p < 0.001$.

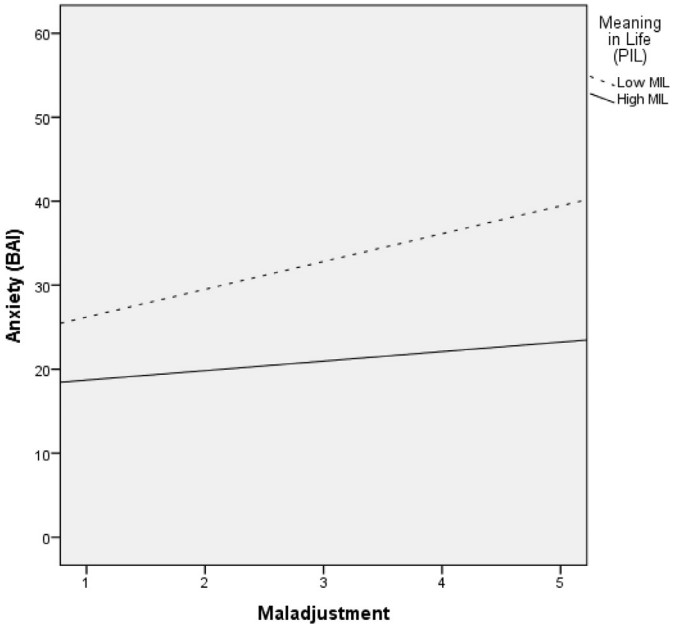

Fig. 1. Meaning in life buffers the association between clinical Anxiety and Maladjustment. PIL = Purpose in Life; BAI = Beck Anxiety Inventory.

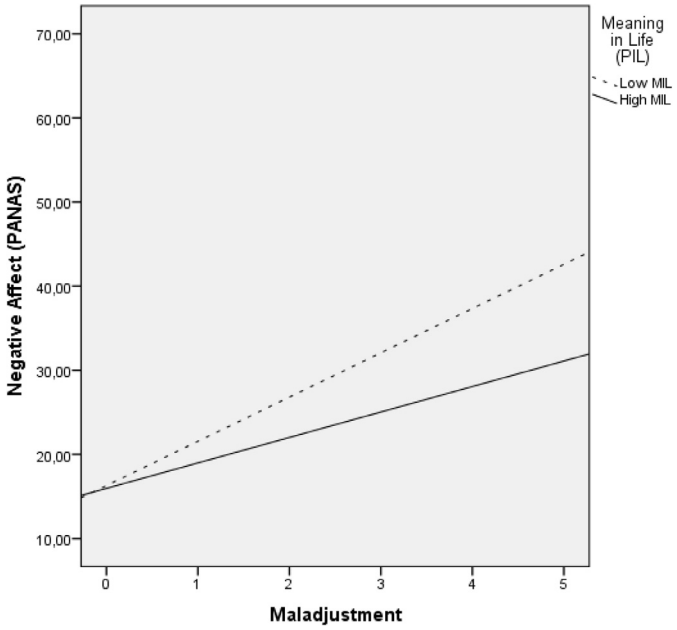

Fig. 2. Meaning in life buffers the association between Negative Affect and Maladjustment. PIL = Purpose in Life; PANAS = Positive and Negative Affect Schedule.

Negative and stressful events are integrated into our goals, values, and direction (which provides a purpose) (Wong, 2014a); c) It allows us to cope with this individual and unique vital experience (our existence is valuable); and d) It may provide us with the opportunity to cope with dignity and accept negative events that cannot be changed, allowing us to find meaning in spite of negative affect and clinical anxiety (Frankl, 1959/2006). In the same way, Wong (2014b) suggests that an adaptive attribution such as meaning can produce hope or success (Weiner, 1985), and existential coping strategies (e.g., acceptance of the positive potential of negative events) are important in coping with non-controllable situations (Wong et al., 2006). Finally, having meaning can contribute to the will to live in extreme situations (Wong, 2009).

In this research, we chose two different measures of clinical anxiety, the BAI and Negative Affect, because we wanted to evaluate different components of clinical anxiety. The BAI assesses cognitive, emotional, physiological, and behavioral dimensions of clinical anxiety. Negative Affect is a general dimension of distress and unpleasant engagement, aversive mood states, anger, disgust, guilt, fear, and nervousness (Watson et al., 1988), and it is related to self-reported stress and poor coping (e.g., Billings et al., 2000). The results show that meaning in life buffered the association between BAI or Negative Affect and global maladjustment to daily life. This is an important result because Negative Affect was found to be highly associated with the level of depression (Dunkey et al., 2017), and residual symptoms of depression at the end of treatment for anxiety disorders have been associated with an increased risk of relapse (Ali et al., 2017). Moreover, in this study we have chosen the overall maladjustment to daily life as a dependent variable. Taking into account that these people are on sick leave due to the presence of a mental disorder, it is very important to evaluate the overall maladjustment to everyday life, in addition to the diagnosis,

because maladjustment has been shown to be associated with the severity of the disorder in people with social anxiety disorder and post-traumatic stress disorder (Echeburua et al, 2000).

We should take into account that, although the sample had an adequate size, it does not allow us to perform other more complex statistical analyses, such as structural equation analysis. In our study, we utilized two hierarchical regression analyses. This robust methodology is utilized with smaller samples in clinical research to test moderator factors (Frazier et al., 2004). So, future research should replicate this study with a large sample and with more complex statistical analyses.

The main limitation is that we cannot talk about causality between variables because this is a cross-sectional study. The results obtained can be considered in terms of correlates rather than causal risk factors. Another limitation of this study is that the entire sample was from Spain, and in other countries or cultures, the construct of meaning in life could have a different role as a predictor variable. Therefore, it is necessary to replicate the present study using a longitudinal design with samples from other countries, such as the USA and African or Asiatic countries. Finally, we did not use additional self-report measures to assess maladjustment; instead, we utilized a single item. However, different studies have shown that it is possible to evaluate a broad construct with a single item without influencing the results (e.g. Robins et al., 2001). Moreover, Elo et al. (2003) suggested that longer scales used to measure psychological stress can be replaced with the stress-symptoms item. In the same way, to assess negative affect, we used the PANAS Negative Affect subscale. This independent subscale has been found to be highly internally consistent and stable at appropriate levels over a 2-month time period, and so it can be utilized independently (Watson et al., 1988). These limitations should always be taken into consideration when generalizing the results, which should be considered exploratory.

The results of our study suggest that encouraging the development of meaning in life in participants with anxiety and depressive disorders could be a strategy for increasing resilience and preventing long-term sick leave. On the one hand, it is necessary to evaluate meaning in life in people with common mental disorders in a situation of sick leave. Meaning making in a situation of loss or grief (as occurs when one loses his/her job) has been shown to be a protective factor in people with PTSD and adaptive disorders. Frankl (1959/2006) suggested that work activity could be a source of meaning, and so recovering it would allow the individual to discover a sense of meaning, which is a protective factor against psychopathology. Moreover, several characteristic symptoms of major depression (APA, 2013) are apathy, dysphoria, hopelessness, and absence of meaning in life. Frankl (1959/2006) suggested that the search for meaning is a primary motivational force, that people have the innate need to find meaning in the things that happen to them, and that every human being has the ability and opportunities to find this unique and specific meaning. When we are unable to find meaning, or when our behaviors or values do not allow us to discover the authentic meaning of life, we can enter a state of apathy, dysphoria, and hopelessness. In this regard, previous studies have indicated that high meaning in life is negatively associated with depression (Harlow et al., 1986) and hopelessness (Marco et al., 2017). Therefore, our results support the need to implement psychotherapeutic interventions aimed at developing meaning in life in participants with common mental disorders on sick leave as a complement to well-established treatments for these disorders (Salomonsson et al., 2018). In the same way, Acceptance and Commitment Therapy (ACT) has the primary objective of teaching patients to accept the necessary suffering in order to increase their ability to engage in committed, life-affirming action based on their values (Strosahl et al., 2004; Wilson et al., 2010). ACT has been effective in decreasing psychological distress, increasing psychological adjustment, and improving quality of life (Wilson and Murrell, 2004).

In conclusion, this study showed that meaning in life moderated and buffered the association between clinical anxiety or negative affect and overall maladjustment to daily life in participants with common mental disorders on sick leave.

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