

# Resilience, automatic thoughts, distress, neuroticism in people with pain and role limitations due to physical health problems

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**Abstract:** People with pain and role limitations due to physical health problems display a higher risk of automatic thoughts and distress. In this context, the neurotic factor significantly contributes to the increase in emotional distress, while resilience plays a protective role on the cognitive and emotional system. Relationships among pain, resilience, automatic thoughts, neuroticism and distress have been researched in this study. We have used a questionnaire-based investigation for each construct. Results have shown that automatic thoughts and pain are predictors for both emotional distress as a whole and for its sub-factors: functional fear and sadness. The results also showed that resilience is a functional and dysfunctional predictor and that neuroticism is a predictor for functional fear. Studies have shown that resilience has a favorable impact on health, reducing emotional stress. Pain, automatic thoughts, neuroticism and distress represent factors of psychological vulnerability.

**Keywords:** pain, resilience, automatic thoughts, neurotic, distress.

## Introduction

The intention of this research is to discover not only the predictor status of one or other variables, even these are very significant for those persons with health problems but more important, to study the particularities of the relationship between variables, especially the relationships of that variables with resilience. The particular manner in which the negative cognitive factors (automatic thoughts) and emotional ones interact and generate distress variations as well as the fluctuation of pain, represent for us a constant purpose for this research. In order to research the complex relationships between the discussed variables, we will review how they are found in various other studies.

Resilience is the capacity to adapt to risk and adversity. This is not its only characteristic; the organism's rate of recovery after the request is another important aspect of resilience. It is the ability to handle and recover itself from perturbation occurring in the context of one's life (Sinclair,

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Wallston, 2004). Resilience is considered to be an inferential concept that involves two different types of reasoning. Firstly, resilience can be evaluated in the context of a threat to the individual's ability to adapt to certain life situations. Secondly, it is evaluated by the extent to which the individual has managed to adapt to the situation, in spite of that specific threat. Resilience is not a capacity that suits any type of situation or any activity field; an individual may display a high degree of resilience at some point in time and in a specific field, while having a lower level of resilience in a different point in time or a different specific field. Resilience predictors, such as compensating factors, promoting factors and protective factors have been studied in literature. Protective factors moderate the impact of life's adversities depending on the individual's ability to adapt (Wirght and Masten, 2013).

Negative automatic thoughts are distorted thoughts that manifest themselves involuntarily in the sphere of consciousness and are the final product of dysfunctional intermediary and central beliefs (Beck, 1976, apud Wong, 2008). Both irrational and rational beliefs are vulnerable and protective factors in stressful situations (DiLorenzo et al., 2011). Irrational beliefs are psychological constructs (cognitive vulnerability factors) that can predict the way in which individuals emotionally react to stressful events. A series of studies claimed that these constructs have had an impact on emotional issues, such as anxiety and fury (Bernard, 1998, apud DiLorenzo et al., 2011), depression and guilt (David, Belloiu, & Schnur, 2002, apud DiLorenzo et al., 2011), major depression (David, Szentagotai, Lupu, & Cosman, 2008; McDermutt, Haaga, & Bilek, 1997; Solomon, Arnow, Gotlib, & Wind, 2003, apud DiLorenzo et al., 2011) or dysphoria (McDermutt, et al., 1997, apud DiLorenzo et al., 2011).

Concerning the relationship between automatic thoughts and depressive symptomatology, Francis et al. (1995) examines how the role of automatic negative thoughts and attitudes play in the debut of depression symptomatology. Dysfunctional behaviours can overlap other dysfunctional cognitive structures that represent psychic vulnerability factors for the individual, leading to depression symptomatology (Francis et al., 1995). According to Sato, there are two types of dysfunctional attitudes, sociotropy ones (related to peer approval) and autonomy ones (related to the evaluation of performance). Sato (2003) states that sociotropy displays a powerful connection with depression.

The issues being discussed reminds us of Beck's cognitive model which states that dysfunctional attitudes are formed as a result of early experiences. In the case of depression, a possible example might be critiquing or excessive parental punishment, which can lead to an attitude that can be summed up as a rule of thumb: "I must be the best in everything I

do". Dysfunctional attitudes do not lead to depression by themselves. People are capable of respecting the self-imposed rules which emerge from dysfunctional attitudes, gaining positive results and, thus, strengthening these attitudes. In other cases, people avoid the subject those attitudes imply, rendering it latent. If an event or situation that activates these attitudes takes place, but the individual cannot respect the rules imposed by that specific attitude, a different set of beliefs, thoughts and feelings may surface.

Emotional distress is a variable commonly associated with pain that influences people's efficient adapting and performances in the socio-professional environment through intensity and frequency. Its effects are reflected by present difficulties in various contexts, such as a) psychological symptomatology like anxiety and depression; b) problems within interpersonal relationships; c) problems with social performance, such as workplace performance or performance in school (Burlindame et al., 1995, apud Brodhagen & Wise, 2008). The occurrence of a significant life trauma increases the probability of the apparition of emotional distress symptoms. Thus, individuals who experienced a traumatic life event display more emotional distress symptoms as well as interpersonal and social difficulties (Bunce et al. 1995; Ozer et al. 2003; Solomon et al. 1988, apud Brodhagen & Wise, 2008).

The three-part model of anxiety (Clark & Watson, 1991, apud Hankin et al., 2004) states that the powerful covariation between anxiety and depression is owed to a common negative affect factor called emotional distress. Thus, specific aspects of depression can be conceptualised to a factor that implies a lowered positive affect (anhedonia), while specific aspects of anxiety can be defined by a factor of anxiogenic arousal (Brown et al., 1998, Chorpita et al., 1998, Beck et al., 1990, Joiner, 1996, Watson et al., 1995, Weber et al., 1995, apud Hankin et al., 2004). Ellis (1994, apud DiLorenzo et al., 2011) proposed a binary distress model based on negative functional (e.g. sadness, worry) and dysfunctional (e.g. depression, panic) feelings, qualitatively different but interconnected. Dysfunctional distress is accompanied by functional distress (feeling depressed includes feeling sad), but it does not work the other way around as well. Thus, negative dysfunctional feelings have a significant clinical correspondent issue, while functional negative feelings correspond to normal negative reactions toward stressful events (Bonnano, 2004; Ellis & DiGiuseppe, 1993, apud DiLorenzo et al., 2011). According to this model rational beliefs are associated with functional distress while irrational beliefs are associated with dysfunctional distress and its functional components.

Some authors, Costa and McCrae (1992, apud Ormel et al., 2004), define neuroticism as a major domain of personality, implying inadequacy and negative emotionality, while other authors have defined neuroticism in

different ways: the tendency to have rapid arousal in the presence of stimulation and inhibition slowing; the tendency of having unrealistic ideas; an incapacity of controlling negative events; a predisposition to lamentation; inefficient stress coping mechanisms; a tendency of evaluating events as stressful; a disposition towards experiencing aversive emotional states (Widger et al., 1984, apud Ormel et al., 2004). The anxiety-trait term is occasionally used as a synonym for neuroticism (Schinka et al., 2004, apud Ormel et al., 2004). Other authors have defined neuroticism in different ways: the tendency to have rapid arousal in the presence of stimulation and inhibition slowing; the tendency of having unrealistic ideas; an incapacity of controlling negative events; a predisposition to lamentation; inefficient stress coping mechanisms; a tendency of evaluating events as stressful; a disposition towards experiencing aversive emotional states (Widger et al., 1984, apud Ormel et al., 2004). The anxiety-trait term is occasionally used as a synonym for neuroticism (Schinka et al., 2004, apud Ormel et al., 2004).

Clark et al. (1994, apud Ormel et al., 2004) formulated three conclusions on neuroticism: 1) it is a vulnerability factor for the anxiety and depression symptomatology; 2) it indicates an unfavorable prognosis and 3) it is itself affected by the individual's psychiatric history. A series of studies confirmed these conclusions (Dugan et al., 1990; Kendler et al., 1993; Katon et al., 2002; Farmer et al., 2002, apud Ormel et al., 2004). Neuroticism is the tendency to express negative affects and emotional instability (Larsen and Buss 2005, apud Ringo et al., 2011) and previous research has shown that it is positively associated with sensitivity towards anxiety (Cox et al. 1999; Zvolensky et al. 2003, apud Ringo et al., 2011), anxiety (Bull and Strongman 1971; Gomez and Francis 2003; Muris et al. 2004; Richman et al. 1996, apud Ringo et al., 2011) and depression symptoms (Berlanga et al. 1999; Boyce et al. 1991; Enns and Cox 1997; Saklofske et al. 1995, apud Ringo et al., 2011).

Literature states that neuroticism is a stress predictor, especially when talking about interpersonal stress, that it modifies the impact stressful events can have on the individual, and that it is a predictor for the beginning of affective disorders, along with their long-term evolution (Ormel et al., 2004). Studies on cognitive aspects of neuroticism have shown that it is correlated with biased informational processing, particularly emotional information (Guerra et al., 2001, Hansenne et al., 1999, MacLeod et al., 1992, apud Ormel et al., 2004). Additionally to the informational processing bias, some studies claim that stress systems (the physiology of the stress's axis) in a neurotic individual are deregulated (Carney et al., 2000, apud Ormel et al., 2004). Eysenck (1975, apud Day et al., 2003) described the neurotic individual as an anxious one, which having changing moods and is frequently depressed. Individuals with high neurotic scores experience

negative emotions (such as anxiety, depression, anger, shame and guilt) more often and more intense, suffer from a wide array of issues, feel inadequate or inferior and have higher levels of distress (Watson et al., 1994, apud Hankin, 2007). Depression and anxiety are hereditary at a rate of 30-40%. Neuroticism is also hereditary in that proportion (Sprangers et al., 2010).

Evaluating the notion of pain implies considering both the biological and the psychological aspects. Pain is the physical state of discomfort an individual experiences. Its intensity and the duration of an illness have to be considered as well when evaluating psychological factors, especially when dealing with patients who that are physically ill and suffer from persistent pain, with or without an organic source (Keefe et al., 2004). The personality structure, along other psychological variables (stress perception and defense mechanisms), has a profound impact on the appearance and evolution of depression or anxiety in the psychological processing of pain (Grucza et al., 2003). The characteristics of pain (the intensity of pain in particular) have a great influence on functional disability. Previous studies with patients experiencing chronic pain, that have utilised multi-varied analyses to predict disability, have shown that the intensity of pain explains the larger bigger proportions of the variance of disability (Mannion et al., 2001). Viewed from this perspective pain is a complex phenomenon, conditioned by various factors that must be approached with the help of multi-varied analysis in order to highlight the specific way in which this variable influences the functional disability and the particular way in which it relates to various personality components. The interactions between pain and patients with depression disorders favor the growth of functional disability. Patients with high levels of pain and psychological problems (depression in particular) tend to focus on negative events and have a low threshold for induced pain and for relating to the functional weakness (Epker & Block, 2001).

*Relationships between pain/disability, resilience, automatic thoughts, distress, neuroticism*

High resilience contributes to lowering emotional distress in cancer patients. Psychosocial interventions that focus on raising resilience have proven useful in reducing emotional distress for these patients (Min et al., 2013). Stress resistance resources, such as resilience, social support, hope and optimism, have an important negative correlation with emotional distress (Leserman, Perkins, & Evans, 1992; Linn, Lewis, Cain, & Kimbrough, 1993; Reed, Taylor, & Kemeny, 1993; van Servellen, Padilla, Brecht, & Knoll, 1993, apud Kenedy et al., 2004). It is difficult to highlight relationships between pain, disability and psychological factors, because depression or anxiety can occur before the pain starts. Chronic persistent pain and disability can go through complications (Kuch, 2001). More studies

have been focused on anxiety and depression as secondary effects of lengthy medical treatments. In other studies depression or anxiety have been identified as significant predictors of functional disability in patients going through intense pain. Pain has been associated with a raised stress level (Mannion et al., 2001).

Robinson et al. (2006) states that neuroticism is a predictor for psychological distress in individuals that do not process contextual information correctly. Neuroticism also predicts the negative affect, judgment on this affect and on anxiety symptoms. Kennedy et al. (2004) studied neuroticism and optimism in connection with psychological distress. They state the following: neuroticism strongly correlates with anxiety; a high level of neuroticism is associated with a low level of optimism; optimism strongly correlates with quality of life and psychological wellness; optimism leads to an individual's ability to cope with stress, having a high level of optimism associated with a low level of psychological distress. Montgomery et al. (2003) states that worry is a predictor of emotional distress in women with breast cancer, prior to surgery.

Day et al. (2003) states that: a low level of rational cognition is associated with low levels of anxiety and depression; persons with a high level of neuroticism show high levels of anxiety and depression; people with a high level of optimism manifest low levels of anxiety and depression; neuroticism and irrational cognitions have a significant negative correlation with optimism and self-esteem and a significant positive correlation with depression. Chang and Bridewelle (1998) state that; individuals that display a high level of irrational beliefs are more pessimistic than those with a low level of such tendencies; individuals with a high level of irrational beliefs display high levels of depression. Studies have highlighted associations between irrational thoughts and emotional distress (Chang et al., 1994, apud Chang et al., 1998). The results show that high levels of irrational thoughts were associated with high levels of depressive symptoms (Chang et al., 1998). The dimension of the effect for the relationship between neuroticism and anxiety has been larger than that for the relationship between optimism and anxiety, with neuroticism displaying a stronger association with distress (Kennedy et al., 2004).

Individuals with low neuroticism scores show a greater behavioural flexibility and better distress management. Individuals with high neuroticism scores also display avoidance behaviours and a high level of concern (Westen et al., 1998, apud Robinson et al., 2006). Cognitive vulnerability, neuroticism and sociotropy have had a strong correlation with emotional distress, while emotional distress itself is a predictor of depression (Mongrain & Blackburn, 2005).

Automatic negative thoughts have been a mediator between cognitive vulnerability and depression (Spasojevic & Alloy, 2001, apud Hankin, 2007). Ormel et al. (2004) states that in the presence of significant stressors, for a certain amount of time, neuroticism can lead to a high level of emotional distress, ultimately acting as a trigger for psychopathology. Its relationship with psychopathology has not been generalized. Kennedy et al. (2004) has investigated what role neuroticism and optimism play in emotional distress. Neuroticism is, thus, a predictor of a low level of optimism and a high level of emotional distress. Studies state that neuroticism is a predictor of stress (Ormel et al., 2004). The powerful correlation between depression and neuroticism is documented in literature through numerous studies (Clarke, 2004; Hepburn and Eysenck, 1989; McCleery and Goodwin, 2001; Saklofske et al., 1995; Williams, 1990, apud Jylha & Isometsa, 2006). Neuroticism is, supposedly, the primary factor in emotional distress and distress-related disorders (Mongrain & Blackburn, 2005). Neuroticism displays a powerful correlation with depression and anxiety, in the general population (Jylha & Isometsa, 2006). Neuroticism is a predictor for emotional distress (Aarstad et al., 2011).

## **Method**

This exploratory study, the strategy of transversal research was chosen, alongside the correlational method. The major objective of this predictive correlation study is to highlight the impact of pain, resilience and what automatic negative thoughts and neuroticism have on emotional distress and its sub-factors: functional sadness, dysfunctional sadness, functional fear and dysfunctional fear. In the regression analysis, the focus was on both explanatory models of relationships between variables and the predictors, indicating the status of considered predictor and criterion variables.

### ***Participants***

The test sample was made up of 59 subjects (27 men and 32 women), ages ranging from 20 to 63 ( $m = 47.34$ ;  $std.dev. = 14.54$ ). The criteria for participating were to be a person with painful symptoms and role limitations due to health issues. The criteria for exclusion were to be a person with psychological or psychiatric disorders, malign pathologies or multiple illnesses.

The questionnaires were applied through the authors' network of collaborating psychologists, field operators having the identification of people with somatic distress as the primary goal. 118 questionnaires were applied. In the end, 59 cases qualified, all of those declaring painful

symptoms and role limitations due to physical health problems (below average scores on the “role limitations due to physical health problems” scale of the SF 36 questionnaire) and, additionally, recognizing the existence of a current health problem. It is important to remember that, even though all participants had had common symptoms and role limitations, the sample is relatively heterogeneous, and the selection is non-random. The results are valid for the used sample.

### ***Instruments***

Automatic thoughts were evaluated with the help of the *Automatic Thought Questionnaire*, developed by Hollon and Kendal (1980). This scale measures the frequency of automatic negative thoughts. It has 15 items and a Cronbach Alpha = 0.94.

Distress was evaluated with the *Emotional Distress Profile*. This scale has 26 items and a Cronbach Alpha = 0.94. It was elaborated by David Opris and Bianca Macavei (2005) and measures the dysfunctional and functional negative emotions that are in the „fear” and „sadness/depression” category. The scale was conceived starting from the items in the „Profile of Mood Disorders”, Short Version (DiLorenzo, Bovbjerg & Montgomery, 1999) (Cronbach Alfa = 0.94).

Neuroticism was evaluated using the Scale for neuroticism from the *Zuckerman-Kuhlman Personality Questionnaire* (ZKPQ) (Zuckerman et al., 1993), adapted in Romania by Opre et al. (2004). The scale has 19 items and a Cronbach Alpha = 0.87.

Pain was evaluated using the *Numeric Rating Scale for Pain* (NRS Scale). This scale rates pain intensity from 0 to 10. Test-retest fidelity = 0.96, construct validity: large correlation with the VAS scale (between 0.86 and 0.95).

Resilience was evaluated using the *Brief Resilience Coping Scale* (Sinclair & Waltson, 2004). This scale measures an individual’s tendency when it comes to dealing with stressful situations in an adaptive way. It has 4 items and a Cronbach Alpha = 0.71.

RP Scale: Role limitations due to physical health problems (four items) of quality of life questionnaire SF36 (Brazier et al., 1992) (Cronbach Alfa = 0.82).

### **Results and discussions**

In table 1 are the results of descriptive statistics (the average and standard deviation) and  $r$  Bravais-Pearson correlation coefficients for the study's variables. We can easily observe in table 1 that the resilience correlates with functional sadness ( $r = -0.26$ ;  $p < 0.05$ ) and with dysfunctional sadness ( $r = -0.25$ ;  $p < 0.05$ ). Although the correlations'



coefficients are relative small, it is important to retain that resilience has an important influence on the decrease of both forms of sadness.

	Mean	St. Dev.	1	2	3	4	5	6	7	8
1.Pain	5.20	2.29	-							
2. Res	10.94	3.30		-						
3. AT	38.45	16.86	.64**	.38**	-					
4.N	52.69	16.14	.59**		.63**	-				
5.FS	15.89	6.70	.70**	-.26*	.67**	.65**	-			
6.DS	17.11	8.52	.71**	-.25*	.74**	.64**	.87**	-		
7.FF	17.49	6.15	.52**		.45**	.62**	.65**	.60**	-	
8.DF	13.96	5.95	.66**		.65**	.69**	.79**	.84**	.71**	-
9.ED	62.61	23.50	.72**		.70**	.71**	.93**	.92**	.81**	.92**

Table 1. Average, standard deviation and correlations for the study’s variables; Res – Resilience; AT - Automatic thoughts; N – Neuroticism; FS - Functional sadness; DS - Dysfunctional sadness; FF - Functional fear; DF - Dysfunctional fear; ED - Emotional distress; \* p < 0.05; \*\* p < 0.01.

Through an analysis of simple linear regression the study highlighted the following results. Automatic thoughts (Table 2) represent a predictor for emotional distress ( $\beta = 0.70$ ,  $p < 0.01$ ,  $R^2 = 0.49$ ) and explain 49% of the emotional distress variable. A high frequency of negative automatic thoughts leads to a high level of emotional distress.

Predictor variable	B	SE(B)	$\beta$	t	Sig.(p)	$R^2$
Automatic thoughts	1.01	.13	.70	7.59	.000	.49
Criteria variable:	Emotional distress					

Table 2. Simple linear regression analysis results for independent predictors of emotional distress

Automatic thoughts (table 3) are a predictor of functional ( $\beta = 0.45$ ,  $p < 0.01$ ,  $R^2 = 0.20$ ) and dysfunctional fear ( $\beta = 0.65$ ,  $p < 0.01$ ,  $R^2 = 0.42$ ) and of functional sadness ( $\beta = 0.67$ ,  $p < 0.01$ ,  $R^2 = 0.46$ ). Resilience is a predictor of functional ( $\beta = -.26$ ,  $p < 0.05$ ,  $R^2 = 0.06$ ) and dysfunctional ( $\beta = -.25$ ,  $p < 0.04$ ,  $R^2 = 0.06$ ) sadness (Table 3). The impact analysis of cognitive

structures (automatic thoughts) on how patients perceive pain, functional and dysfunctional stress, fear and sadness functional and dysfunctional indicated that cognitive dimension is an important link in the chain of pathological causation conditions, especially in the development of fear dysfunctional and the sadness functional

Predictor variable	B	SE(B)	$\beta$	t	Sig.(p)	R <sup>2</sup>
1. Automatic thoughts	.27	.03	.67	6.98	.000	.46
2. Resilience	-.53	.25	-.26	-2.05	.04	.06
3. Pain	2.04	.27	.70	7.42	.000	.49
Criteria variable:	Functional sadness					

Table 3. The simple linear regression analysis results for independent predictors of functional sadness

Automatic thoughts represent a predictor of functional sadness ( $\beta = 0.67$ ,  $p < 0.01$ ,  $t = 6.98$ ) and explain 46% of the functional sadness variable variance. A high level of automatic negative thoughts leads to a high level of functional sadness. Resilience is a negative predictor of functional sadness ( $\beta = -0.26$ ,  $p < 0.05$ ,  $R^2 = 0.06$ ) and explains 6% of the functional sadness variable variance. A high resilience level leads to low levels of functional sadness (Table 4). Although statistically significant, the value of  $R^2 = 0.06$  is reduced to draw important conclusions about the influence resilience of dysfunctional sadness. Although present, resilience is not a compensatory mechanism sufficiently strong enough to moderate amplitude dysfunctional sadness. Pain is a predictor of functional sadness ( $\beta = 0.70$ ,  $p < 0.01$ ,  $R^2 = 0.49$ ) which explains 49% of the functional sadness' variation. A high level of pain leads to a high level of functional sadness.

Predictor variable	B	SE(B)	$\beta$	t	Sig.(p)	R <sup>2</sup>
Resilience	-.66	.33	-.25	-2.02	.04	.06
Criteria variable:	Dysfunctional sadness					

Table 4. The simple linear regression analysis results for independent predictors of dysfunctional sadness

Automatic thoughts represent a predictor of functional fear ( $\beta = 0.45$ ,  $p < 0.01$ ,  $R^2 = 0.20$ ) and explain 20% of the functional fear dependent variable variance. A high frequency of automatic negative thoughts leads to a high level of functional fear (Table 5).

Predictor variable	B	SE(B)	$\beta$	t	Sig.(p)	R <sup>2</sup>
1. Automatic thoughts	.16	.04	.45	3.83	.000	.20
2. Neuroticism	.23	.04	.62	5.97	.000	.38
3. Pain	1.39	.30	.52	4.61	.000	.27
Criteria variable:	Functional fear					

Table 5. The simple linear regression analysis results for independent predictors of functional fear

Neuroticism represents a predictor of functional fear ( $\beta = 0.62$ ,  $p < 0.01$ ,  $R^2 = 0.38$ ) and explains 38% of the dysfunctional fear variable variance. A high level of neuroticism leads to high levels of functional fear. Pain represents a predictor of functional fear ( $\beta = 0.52$ ,  $p < 0.01$ ,  $R^2 = 0.27$ ) and explains 27% of the functional fear variable variance. A high level of pain leads to high levels of functional fear. Pain is a predictor for dysfunctional fear ( $\beta = 0.66$ ,  $p < 0.01$ ,  $R^2 = 0.44$ ) and explains 44% of the dysfunctional fear variable variance and also automatic thoughts ( $\beta = 0.65$ ,  $p < 0.01$ ,  $R^2 = 0.42$ ) which explains 42% of the same criteria variable (Table 6).

Predictor variable	B	SE(B)	$\beta$	t	Sig.(p)	R <sup>2</sup>
1. Automatic thoughts	.23	.03	.65	6.54	.000	.42
3. Pain	1.72	.25	.66	6.72	.000	.44
Criteria variable:	Dysfunctional fear					

Table 6. The simple linear regression analysis results for independent predictors of dysfunctional fear

The high levels of the calculated coefficients indicate that both pain and automatic thoughts have dysfunctional fear. Thus, it is to be expected that patients accusing systematic pain develop certain dysfunctional fears, their magnitude increasing along with more intense pain. Both automatic thoughts and pain are important factors that can generate dysfunctional fear. Knowing this, the doctor will discuss therapeutic pain felt by the patient both by reducing the specific medication and together with the psychotherapist will treat the automatic thoughts that maintain a certain level of somatic discomfort. A balanced management of anxiety states by reducing psychophysiological activation will be an important therapeutic premise

## Discussion

This study highlights the fact that pain, automatic thoughts and neuroticism are predictive factors of high levels of emotional distress. The results suggest the necessity of specific programs of therapeutic intervention that have a specific objective: increase of resilience, decrease of pain and of emotional distress and the abatement of role limitations. A high frequency of automatic negative thoughts is associated with an increase in the levels of functional sadness, functional and dysfunctional fear. This conclusion highlights the therapeutic necessity of automatic thoughts. Neuroticism is associated with functional fear, and a high level of pain leads to an increase in the levels of functional sadness, as well as functional and dysfunctional fear. One of the most important conclusions of the study is that a high level of resilience is associated with lowering distress levels, this in turn leading to a decrease in functional and dysfunctional sadness. This conclusion highlights the healthy function of the resilience for the well being of the people.

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