

EL ESTRES CRONICO Y LA MEDICION PSICOMETRICA DEL DISTRES EMOCIONAL PERCIBIDO EN MEDICINA Y PSICOLOGIA CLINICA DE LA SALUD

CHRONIC STRESS AND THE MEASUREMENT OF PERCEIVED EMOTIONAL DISTRESS IN MEDICINE & HEALTH PSYCHOLOGY

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Recibido: 27 de Setiembre de 2010

Aceptado: 07 de Febrero de 2011

RESUMEN

El propósito central de este artículo es presentar el Inventario de Distrés Emocional Percibido (IDEP) e indicar su utilidad en el área de la psicología clínica de la salud. Se presenta un marco conceptual coherente y multidimensional acerca del *distrés emocional percibido*. Los resultados del análisis factorial de componentes principales con rotaciones promax claramente indican que el IDEP es un instrumento psicométrico que presenta una descripción válida y confiable del distrés emocional percibido en pacientes con diagnóstico de cáncer. Dichas observaciones sugieren que el IDEP provee información significativa acerca de los diferentes factores multidimensionales del distrés emocional percibido. Nuestra intención es que este reporte empírico estimule la investigación psicométrica en Latinoamérica con la intención de replicar los resultados observados en el presente estudio de investigación.

Palabras Clave: Estrés crónico, distrés emocional percibido, ansiedad, depresión, ira, cáncer.

ABSTRACT

The central purpose of this study is to describe the Perceived Emotional Distress Inventory (PEDI) and point out its usefulness in the field of health psychology. The conceptual framework that guided the development of the PEDI, factor structure, internal consistency, and construct validity are reported. Item responses were examined by Factor Analyses of Principal Components with promax rotations. The PEDI presents three subscales that assesses Anxiety/Depression, Hopelessness, and Anger Expression as components of perceived emotional distress in cancer patients. We also discuss the important implications of replicating these results in the different regions of Latin America.

Key words: Chronic Stress, Perceived Emotional Distress, Anxiety, Anger, Depression, Cancer

Recent studies in psychoneuroimmunology show the need to evaluate conceptual models and traditional psychometric measurement about stress. Stress is an inevitable condition of human existence and a factor in the development of physical and mental diseases. First, it is necessary to establish that the cognitive model of stress has a physiological correlate predominantly in the frontal lobe of the brain, so it is necessary to recognize that the experience of stress starts in the brain, affects the brain and the rest of systems that make up our body. In this sense we can say that the brain is the central organ of the physiological, emotional, and behavioral stress. The

perception of the individual as a cognitive element produced in the brain's frontal lobe, certainly determines what is «stressful» causing emotional distress states.

Secondly, neuroendocrinology studies show that when the stress response becomes a chronic process, this response provides the start of a state of emotional distress where there is a set of psychological symptoms characterized by anxiety, depression and anger. This state of chronic stress and emotional distress «felt» a negative impact on the autonomic nervous system by activating biochemical changes and hormonal imbalance that affects

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the endocrine and immune systems, and ultimately the health of the individual. Today it is scientifically established that this negative impact leading to the development of a significant number of systemic diseases among which we mention cancer.

Clinical practice guidelines of the National Comprehensive Cancer Network in the United States of America (NCCN, 1999) defines emotional distress as «an unpleasant experience of psychological, social, and spiritual nature that interferes with the ability to deal effectively with cancer disease and various forms of treatment» (p.113). There is currently no scientific evidence proving that cancer patients perceived significantly higher levels of emotional distress at the time of diagnosis, during the treatment period, and in the terminal phase of illness (Breitbart, 1995; Cella, Mahon, & Donovan, 1999; Frojd, Larsson, Lampic & von Essen, 2007, John, et al., 2003, Massie & Holland, 1990; Neipp, Lopez-Roig, Terol & Pastor Mira, 2008; Zabora, 1998).

The perceived emotional distress is understood as a clinically very important in the field of chronic stress and cancer in particular, representing a focus of research and study (Zabora, Brintzenhofesoc, Curbow, Hooker, & Piantadosi, 2001). Although this clinical picture is not comparable with severe depression or other psychiatric illnesses, people suffering from emotional distress reactions require counseling in the field of clinical health psychology (Andersen et al., 2008, Cano- Vindel, Sirgo & Perez-Manga, 1994; Hewitt, Herdman and Holland, 2004, Sosa, Capafons & Caballeira, 1999). The diagnosis of cancer and the harmful effects of their treatments are the determinants of chronic stress situations for the patient, which cause high levels of emotional distress (Sebastian, Mateos & Prado, 2000).

Within the theoretical context of our research, we define emotional distress as «a state marked by feelings that vary in intensity from sadness, insecurity, confusion, and worry, to experience more severe symptoms such as anxiety, depression expression of anger, social isolation, and loss of hope. « In our theoretical framework on the concept of perceived emotional distress in patients with cancer, including anxiety, anger expression, loss of hope, and a significant level of depressive symptoms should be clearly distinguished from the diagnosis of severe depression (Moscoso, McCreary, Goldenfarb, Knapp & Reheis, 2000).

Studies by Cassileth, Lusk, Hutter, Strouse & Brown (1984) suggest that symptoms of anxiety and depression account for just «two seemingly different labels» with a high level of correlation. It is important to recognize that conceptual clarity is essential for scientific progress. Therefore, the desire to develop a test reliable and valid measurement, it is necessary to distinguish perceived emotional distress, conceptually and empirically, of all those factors with which this construct is related indirectly. For example, the distinction between somatic distress and «somatic symptoms» is critical. Somatic distress is understood in the scientific literature as a «concern» for physical symptoms (Gillespie, Kirk, Heath, Martin & Hickie, 1999; Somerfield, Stefanek, Smith & Padberg, 1999). It is also important to note that some «somatic symptoms» such as loss of appetite, insomnia, weight loss, and lack of energy are not necessarily related to the concept of perceived emotional distress. Even more, in the case of cancer patients diagnosed with these «somatic symptoms» are directly related to the side effects of cancer treatments. Consequently, during the process of developing this psychometric instrument, we decided not to include items that represent «somatic symptoms» not compromise the validity and reliability of the concept of perceived emotional distress in cancer patients (Moscoso, McCreary, Goldenfarb, Knapp & Rohr, 1999).

While acknowledging the negative impact of perceived emotional distress in cancer patients, systematic assessment of these emotional disorders such patients is not uniform across centers for cancer patients in USA (Jacobsen & Ransom, 2007) and it is very possible that the same applies also in Latin America, where we found no statistical data to explain this scenario. The measurement of perceived emotional distress in cancer patients has many inconsistencies in cancer centers. A survey in cancer institutes in the United States of America reported that the professional staff in some services use mostly non-structured short interviews for the evaluation of such psychological and emotional problems (Jacobsen & Ransom, 2007).

Unfortunately, the methodological effort to improve current forms of assessment of perceived emotional distress has been minimal in Europe, Australia and particularly in Latin America. Programs, centers and institutes that provide services to cancer patients, not only in USA and Europe

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but also in Latin America, could clearly benefit from using a structured evaluation, easy to implement, and psychometrically validated in order to be able to identify appropriate patients undergoing clinical perceived emotional distress due to cancer diagnosis and treatment.

The assessment of perceived emotional distress in cancer patients requires a coherent theoretical and conceptual framework, which includes symptoms of anxiety, depression, as well as symptoms of anger, fear, and hopelessness (Moscoso et al., 1999; Spielberger & Reheis, 2009). In the field of clinical health psychology, anger has been partially ignored due to the belief that this excitement is natural, being considered as a logical emotional response to stressors that occur in everyday life (Moscoso & Spielberger, 1999). A proper definition of the concept of perceived emotional distress is vital as part of the conditions for the development of new psychometric measurement instruments for use in patients diagnosed with cancer. This definition should distinguish negative affective aspects «somatic» of anxiety and depression, as well as conceptual and empirically recognize the differences between experience, expression and control of anger (Spielberger, Moscoso & Brunner, 2005).

The purpose of this paper is to present a valid and reliable psychometric instrument to facilitate the structured assessment of perceived emotional distress in the area of clinical health psychology. Also, highlight the need of this clinical evaluation in the field of clinical health psychology and medicine.

Building the Perceived Emotional Distress Inventory (IDEP)

The Perceived Emotional Distress Inventory, in its current form is the result of our psychometric research efforts at the University of South Florida during the last decade. The test was developed with the intention to offer a psychometrically valid and reliable instrument in the field of clinical health psychology, particularly cancer, to identify patients with a high level of perceived emotional distress during the diagnostic process and its various forms of treatment.

IDEP has the ability to assess different dimensions of anxiety, depression, anger, and hopelessness in patients

with health problems in general and cancer in particular. This psychometric instrument is sensitive to the multidimensional nature of the concept of perceived emotional distress and considers the measurement of a global index of perceived emotional distress based on the multidimensionality of the concept. This form of conceptualization seems to be the most appropriate under the factorial evidence that the concept of perceived emotional distress has a multidimensional hierarchy, with most information from a main factor (Dohrenwend et al., 1980, Gottschalk & Hoigaard-Martin, 1986).

IDEP has 15 items and was developed with the purpose of measuring the presence and severity of emotional distress perceived as an affective disorder. This concept is defined as subjective feelings that vary in intensity from a state of sadness, uncertainty, confusion and concern to the expression of more severe symptoms such as anxiety, depression, anger, social isolation and despair. « This psychometric instrument carefully removed the «somatic symptoms» such as weight loss, insomnia, fatigue, nausea, and loss of appetite, often associated with different forms of cancer treatment.

The inventory measures three distinct dimensions of perceived emotional distress: anxiety / depression, hopelessness, and anger expression (Moscoso et al., 1999). Also, this instrument provides support clinical decision making and treatment of emotional disorders at the time of cancer diagnosis and during treatment of this disease. The form of response to each item requires that each patient IDEP report «to what extent has experienced every symptom related to emotional distress during the past month, including today,» indicating their response on a 3-point scale: (0) never, (1) Sometimes, (2) often, (3) Always.

During the first phase of development of IDEP included the development of a number of items based on the content validity of the concept of perceived emotional distress, taking into consideration the degree of difficulty understanding and responding to each item. Were not considered items describing somatic symptoms commonly associated with side effects of cancer treatments. In this sense, we drew up an initial group of 20 items in order to measure the different dimensions of perceived emotional distress construct. In some cases, adapted existing items in other tests measuring.

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This preliminary inventory of 20 items was presented to a judging panel comprised of health professionals from Morton Plant Hospital, Cancer Center, as part of the pilot to assess the content validity of the instrument based on the degree of difficulty to understand and respond each item. Group of items originally produced, 5 (25%) were eliminated based on the evaluations and comments from the judges the degree of difficulty understanding the item and / or redundancy. The theoretical framework that allowed us to develop the IDEP during the first phase of our study is supported by a clear understanding that the concept of perceived emotional distress presents a significant degree of multidimensionality, ie, independent but highly correlated factors. The results of this first phase were reported in the *Journal of Psycho-Oncology in USA* (Moscoso et al., 1999).

The second phase of development of IDEP was conducted on a sample of 122 patients diagnosed with cancer. At this stage, the purpose was to conduct the analysis of reliability and stability of inventory. Tests were carried out test-retest correlation with a time interval of four weeks and the values found indicated that the IDEP is a reliable test with a test-retest Pearson correlation of 0.72 in the anxiety scale, and 0.79 on the depression scale. The values in the scale of anger expression are 0.68, and 0.64 in the hopelessness scale. In contrast, stability coefficients for the scales of anxiety (0.34), depression (0.46), anger expression (0.59), and hopelessness (0.58) are relatively low, as expected, due to the nature of these states emotional are changing over time. The results of this second phase were also published in the *Journal of Psycho-Oncology in USA* (Moscoso et al., 2000).

During the third phase of construction of the inventory, was conducted concurrent or convergent validity based on Pearson correlation coefficients. The purpose was to evaluate the relationship between Perceived Emotional Distress Inventory and subscales of anxiety, depression, anger, and despair. The results indicated that the IDEP and its sub-scales have high correlations ($p < .001$). The highest correlations occur between the sub-scales of anxiety and depression. The analysis in this third phase also includes the factor structure and construct validity of the IDEP. The 3 dimensions of the concept of perceived emotional distress observed in this long process of more than a decade of

research, matching the theoretical and conceptual framework in which this instrument is based.

The result of this first principal component factor analysis shows 3 factors explaining 79.40% of the total variance. The first factor included 7 items that correspond to features of anxiety and depression explained 56% of the variance. These items have factor loadings ranging between 0.37 and 0.71 .. The second factor consists of 4 items that reflect hopelessness, accounting for 12.10% of the variance with high factor loadings, which vary between 0.40 and 0.63. A third factor composed of 4 items clearly shows the expression of anger and explains 11.30% of the total variance. The factor loadings of these items vary between 0.41 and 0.72. The full report of this third phase was published in the *Journal of Stress and Anxiety in Europe* (Moscoso & Reheis, 2010).

This article reports the results obtained during the fourth phase of development of Perceived Emotional Distress Inventory. The objective in this phase was to verify the factorial structure of IDEP and submit the construct validity of a much larger sample. Also, continue the description of the conceptual framework of perceived emotional distress.

Method

Participants

The IDEP was administered to 481 patients diagnosed with cancer, of which 312 were females (65%) and 169 males (35%). Patients were evaluated in the outpatient services of St. Joseph's Cancer Institute in Tampa, Florida, USA. In order to satisfy the average model subjects / variables (STV) based on the number of variables that our instrument has, it was determined the need to include at least 150 participants in our sample (Bryant & Yarnold, 1995; Gorsuch, 1988 .)

The age range of participants fluctuates between 22 and 79 years (median = 46). Inclusion criteria for accepting a patient in our study required that these persons were: (1) the age of 18 years of age, (2) no documented history of diagnosis present, psychiatric treatment and / or addiction to drugs; (3) agree to provide consent for information. 96 patients (20%) in our sample were of Hispanic origin. Also, the sample included 76 patients (16%) diagnosed with lung cancer, 178 patients (37%) diagnosed with breast cancer,

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156 patients (32%) with prostate cancer, 41 patients (9%) with colon cancer, and finally 30 patients (6%) diagnosed with ovarian cancer. 100% of patients in the sample had completed at least secondary education.

Instrument

Participants were eligible for inclusion in this fourth phase of our study responded to all items of the Perceived Emotional Distress Inventory (IDEP) in its current form.

Procedure

Patients diagnosed with cancer at St. Joseph’s Hospital Cancer Institute were informed and invited to participate in our study through notices on all hospital medical services. Consent was signed written information to each of the participants who met the requirements for inclusion of information consent clearly states that participation in the study is completely voluntary, and that all information provided by the patient was of a strictly confidential .

The research material consisted of demographic data sheet and IDEP. These were administered in the course of radiotherapy in the Cancer Institute of St Joseph’s Hospital in Tampa, Florida. Our research assistant verified that each participant included in the study completed demographic data sheet and IDEP. The instructions to patients were presented orally and in writing in the English language. The study was approved by the commission to evaluate research studies and protection of patients in research studies of hospital (St Joseph’s Hospital Institutional Review Board). The study was fully funded by the Susan G. Komen, as part of project finance-based Stress Reduction Therapy Centered Cognitive Mindfulness.

Results

The means, standard deviations and Cronbach alpha coefficients of Perceived Distress Inventory and its sub-scales of anxiety, depression, anger and hopelessness are presented in Table 1. Cronbach alpha coefficient for the total instrument of IDEP is .92, which is quite high, as are the alpha coefficients for the four sub-scales. These coefficients vary between .79 and .88, indicating a high degree of internal consistency. The internal consistency of IDEP, represented by Cronbach’s alpha coefficient (0.92) is impressive for an instrument of only 15 items.

Table 1

Medias, desviaciones estandard y correlaciones de coeficientes alpha en el Inventario de Distrés Emocional Percibido (IDEP),y sus respectivas Escalas de ansiedad, depresión, desesperanza e ira.

Inventario D.E.	Media	Dev STD	Alpha
IDEP	28.62	9.24	.92
Ansiedad	8.12	2.42	.86
Depresion	7.94	3.02	.88
Desesperanza	6.24	2.01	.79
Ira	7.14	2.56	.81

In examining the factor structure of IDEP found that 3-factor solution is the best, simplest, and most significant information on the dimensions of the concept of perceived emotional distress. In the field of psychological measurement is typically accepted that a factor solution has good simple structure where each item is assigned to a single factor without any ambiguity (Nunnally, 1978). The high inter-factor correlations justify our decision to use solution promax rotations.

The responses of the 15 items comprising the IDEP were analyzed by the method of principal components with promax rotation. The allocation of items to the various factors was performed taking into account the factor loadings equal to or greater than .40. The sample of our study was adequate for this factor analysis, as indicated by measures of sampling adequacy Kaiser-Meyer-Olkin (KMO) > .60, and Bartlett test of sphericity (p < .001). In Table 2 all data are reported for the saturation factor of each of the 15 items ordered in each factor.

Factor 1 consists of seven items representing symptoms of anxiety and depression. The factor loadings in this factor varies from .48 to .79. The effort to present with anxiety and depression as two independent and distinct clinical features in the development of psychometric instruments has been very difficult to prove (Clark & Watson, 1991; Haaga, McDermut & Ahrens, 1993). This difficulty has been demonstrated even more clearly in psychological assessment tests do not consider items that reflect «somatic

symptoms» associated with anxiety and depression as is the case of IDEP (Moscoso & Reheis, 2010).

Factor 2 is clearly represented by four items that express symptoms and a state of hopelessness. The factor loadings in this factor varies between .56 and .74. The content of the items in this second factor related symptoms represent a loss of hope, social isolation, loss of faith, and feelings of failure. The pessimistic nature of the items comprising the factor 2 indicates that the syndrome of hopelessness has negative affect components as well as cognitive and expressed a feeling of «loss of faith» in relation to the experiences that these patients are currently living.

IDEP Factor 3 also contains four items that indicate the expression and suppression of anger. The factor loadings in the third factor varied between .45 and .79. These observations are not surprising under the previous factor analysis of samples of students in which we find similar factor loadings (Moscoso & Spielberger, 1999, Spielberger, 1988, Spielberger, Reheis, Owen & Sydeman, 2003).

Discussion and Conclusions

The main purpose of our study was to advance the construction of IDEP as an instrument easy to administer and psychometrically valid and reliable measure of perceived

Table 2
Análisis Factorial del Inventario de Distrés Emocional Percibido (IDEP).

Inventario Distrés Emocional	Factor 1 Ans/Dep	Factor 2 Desesp	Factor 3 Ira
IDE: Ansiedad			
Me siento tenso (2)	.76		
Me siento nervioso (5)	.74		
Me siento confuso e inquieto (6)	.61		
No estoy gozando de las cosas que usualmente hago para divertirme (9)	.73		
IDE: Depresión			
Me preocupa que mi salud empeore (8)	.48		
Me siento triste (14)	.79		
No estoy gozando de las cosas que usualmente hago para divertirme (9)	.68		
IDE: Desesperanza			
Me siento distante de mis amigos (3)		.56	
Estoy perdiendo la fe en la lucha contra mi enfermedad (10)		.72	
Siento que soy un fracaso (15)		.74	
Estoy perdiendo la fe en mi tratamiento médico (12)		.66	
IDE: Cólera/Ira			
Me fastidio fácilmente (1)			.45
Me siento mas enojado de lo que estoy dispuesto a admitir (4)			.79
Me siento molesto (13)			.47
«Estoy que reviento», pero trato de no mostrarlo (11)			.62
	Eigenvalue	7.54	1.57
			2.34
Correlaciones Interfactor	Factor 1 - Factor 2 = .64		
	Factor 1 - Factor 3 = .58		
	Factor 2 - Factor 3 = .54		

Los números en paréntesis se refieren a los números de los ítems en el instrumento.

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emotional distress in patients with cancer. Our methodological effort is aimed at making available to the area of clinical health psychology, a psychometric test accessible to screen patients with symptoms of emotional distress caused by the diagnosis of cancer and exposure to surgery, chemotherapy and / or radiotherapy.

The factor analysis results clearly indicate that the IDEP is a psychometric instrument that has a valid and reliable description of perceived emotional distress in patients diagnosed with cancer. Similarly, these results suggest that the IDEP provides significant information about the various aspects multidimensional perceived emotional distress in cancer patients, confirming the results of previous studies.

The observed results show empirical evidence of construct validity and internal consistency of IDEP. Despite the validity of these results, it is very important to take these comments with caution. The observed results have limitations related to the specific characteristics of the sample.

Undoubtedly, these results encourage us to continue to examine the psychometric properties of IDEP. Greater effort is needed in order to replicate these results in patients with other types of diagnosis and in different cultures. In this sense, we are at the beginning of a fifth phase in our studies which we call the transcultural phase. We have begun to adapt the 15 items of IDEP to Spanish with the intention of validating our instrument in Latin American culture. Table 2 shows the items of IDEP in Castilian. It is our hope that this report in Spanish stimulus for Latin-American researchers to replicate the results reported in our research studies.

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El presente estudio es parte del proyecto sobre Mindfulness Based Cognitive Therapy en pacientes con Cancer, financiado por The Susan G. Komen Breast Cancer Foundation to.

*Manolete S. Moscoso, Ph.D., Principal Investigator, Grant Number BCTRO201400

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