Psicothema

Development and psychometric properties of the Resistance to Trauma Test (TRauma)

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Abstract

Background: The Resistance to trauma Test: TRauma is an instrument designed to assess six dimensions involving personal strengths or resources that promote coping with difficult life situations. In addition, an overall score is obtained that is conceptually equivalent to the concept of resilience. The aim of this study was to analyze the psychometric properties and factorial structure of the TRauma in a sample of subjects affected by a traumatic event. **Method:** Participants were 222 people affected by a traumatic life event (36.5% males), with ages ranging between 18 and 71 years. **Results:** Confirmatory factor analysis supports the theoretical internal structure proposed for the instrument. Moreover, the reliability coefficients of the six scales and the total score are both acceptable. **Conclusions:** Overall, the findings of this study support the use of the TRauma to measure factors of personal strengths and resilience. However, these results do not exhaust the validation process of the TRauma, and it is necessary to continue to seek empirical evidence.

Keywords: TRauma, resilience, positive psychology.

Resumen

Desarrollo y propiedades psicométricas del Test de Resistencia al trauma (TRauma). **Antecedentes:** el "Test de Resistencia al trauma: TRauma" es un instrumento que pretende evaluar seis dimensiones que suponen fortalezas o recursos personales que favorecen el afrontamiento de situaciones vitales difíciles. También se obtiene una puntuación global que sería conceptualmente equivalente al concepto de resiliencia. El objetivo de este estudio es analizar las propiedades psicométricas y la estructura factorial del TRauma en una muestra de sujetos afectados por algún suceso traumático. **Método:** los participantes fueron 222 personas afectadas por algún suceso vital traumático (36,5% de varones), con edades comprendidas entre los 18 y los 71 años. **Resultados:** el análisis factorial confirmatorio apoyaría la estructura interna propuesta teóricamente para el instrumento. Además, los coeficientes de fiabilidad tanto de las 6 escalas como de la puntuación total son aceptables. **Conclusiones:** en conjunto, los hallazgos de este estudio avalan el uso del TRauma para medir factores de fortalezas personales y resiliencia. Sin embargo, estos resultados no agotan el proceso de validación del TRauma; es necesario seguir recabando evidencias empíricas.

Palabras clave: TRauma, resiliencia, psicología positiva.

The World Health Organization, in 1948, defined health as a state of complete physical, mental and social wellbeing and not merely the absence of disease (WHO, 1948). This definition was a qualitative leap in shifting the dominant approach to accommodate for a new approach that emphasized positive health. In fact, one of the most relevant models for all authors who believe that mental health is more than merely the absence of disease is Jahoda's (1958) model. Jarne (1996) points out that this is the model that has had the most influence on subsequent developments and that can be regarded as the most comprehensive review of the positive mental health concept. Without describing this model in depth, one could say that it provides some useful guidelines to orientate the positive mental health diagnosis and to guide the design of intervention programs aimed at enhancing personal skills and resources. Some

authors agree that Jahoda's (1958) work is the strongest pillar of the current Positive Psychology trend (Seligman, Steen, Park, & Peterson, 2005).

However, it is paradoxical that a model that has generated so much interest in the scientific community remains today just as the author left it in the late fifties. Moreover, the positive conception of mental health has been relegated to something conceptually desirable but unrealistic in practice (Álvarez, 1998; Winett, Riley, King, & Altman, 1993). In short, as Fernández-Ríos and Buela-Casal point out, despite recognizing the need for a positive approach to health, the evidence indicates that, in practice, emphasis still lies on the absence of disease, and research is still focused on pathology (Fernández-Ríos & Buela-Casal, 1997).

According to Seligman and Csikszentmihalyi (2000), before World War II, psychology had three main goals: To cure mental illness, to help people to live fulfilling lives and to identify and nurture talent. However, these authors believe that the only goal that has flourished to this day is the study and treatment of mental illness, while the other two, helping people lead fulfilling lives and encouraging geniuses, have been relegated to a discreet background. One of the possible causes suggested by Seligman

(1998) is that psychology became a science hand-in-hand with medicine and could not withdraw from the prevailing medical model based on deficit. Moreover, the aftermath of World War II diverted attention to mental illness, leaving the study of normal processes behind.

In recent years, the Positive Psychology trend has claimed attention to that aspect of Psychology that historically had been left aside. The message of Positive Psychology is to remember that psychology not only relates to fixing or improving what is wrong, but must also find the individuals' strengths in order to achieve a greater quality of life and well-being. Seligman (2000) notes that this message is nothing new, there have been elements of Positive Psychology in previous decades, but it is equally true that never before had so much attention been paid to this approach, or to organizing theoretical and practical knowledge, hence, forming a new discipline. It is in this context that Positive Psychology arises, with the aim of investigating human strengths and virtues and the effects these have on the lives of the individuals and the societies in which they live (Cuadra & Florenzano, 2003).

In the same way that diagnostic classification systems of mental disorders, such as the *Diagnostic and Statistical Manual of Mental Disorders* (DSM) or the *ICD-10 Classification of Mental and Behavioral Disorders* (ICD), exist for psychopathology, Peterson and Seligman (2004) decided to develop a classification of human strengths and virtues for Positive Psychology. For these authors, a strength should be a trait in the sense that it must have some degree of generality across situations and stability over time. According to Seligman (2003), strengths and virtues act as a barrier against misfortune and psychological distress and may be the key to increasing resilience.

In this sense, positive psychology can be considered a major shift in the approach to the sciences that study the human mind. It strives to show that it is necessary to consider human potential as a factor that may become predominant in periods of crisis considering that crises are inevitable and necessary for the individual's growth and maturity (Cuadra & Florenzano, 2003).

However, despite its interesting approach, positive psychology is not without criticism. An excellent review can be found in the work of Prieto-Úrsua (2006). Fundamentally, these criticisms focus on the following points: 1) many contents now claimed by positive psychology have been developed in previous decades by traditional psychology (Froh, 2004; Held, 2002; Lazarus, 2003; Linley et al., 2006; Ryff, 2003); 2) lack of scientific quality in positive psychology. These epistemological criticisms can be grouped into three areas: a) maladjustment of their methodological approaches (Cowen & Kilmer, 2002; Lazarus, 2003); b) the poor definitions of the relevant variables (Cowen & Kilmer, 2002; Furr, 2005); and c) the poor and limited measurement instruments available for those variables (Lazarus, 2003; Matthews & Zeidner, 2003; Ryff, 2003).

In a recent study, Windle, Bennett and Noyes (2011) reviewed 271 articles in which resilience was a key element with the objective of analyzing the psychometric properties of the instruments used to evaluate it. Nineteen resilience measures were reviewed, of which four were refined or reduced versions of the original measure. These authors found that, in general, the Connor-Davidson Resilience Scale (Cambell-Sills & Stein, 2007; Connor & Davidson, 2003), the Resilience Scale for Adults (Friborg, Barlaug, Martinussen, Rosenvinge, & Hjemda, 2005) and the Brief Resilience Scale (Smith et al., 2008) were the instruments that presented the best psychometric properties. Moreover, they also found that many of

the available scales are in very early stages of development. These authors concluded that for all of them, more research collecting evidence of validity is needed, and that researchers should focus their efforts on validity itself.

Windle et al.'s (2011) research can serve as a comprehensive review of the instruments designed to assess resilience. All resilience measures considered in such study have originally been created in other countries, especially USA, although some of them have been adapted to Spanish (e.g., Notario-Pachaco et al., 2011). However, the Resistance to Trauma test, TRauma (Urra & Escorial, 2012), is an instrument originally developed in Spain to assess resilience. The aim of this study was to analyze the psychometric properties and factorial structure of TRauma in a sample of subjects affected by a traumatic event.

Method

Participants

Participants in this study were a group of 222 people affected by a traumatic event. Of these, 36.5 % were male and 63.5 % female. The average age of the participants was 41.2 years, with a standard deviation of 12.1 and a range of 18-71 years of age. The mean age of men was 42.4 years, with a standard deviation of 13.1. The average age of women was 40.5 years, with a standard deviation of 11.4.

This is a non-probability sample (accidental). The individuals of this sample were accessed through a network of professional and institutional contacts who work daily with people going through a traumatic life event. The contact network was provided to the researchers by the *Pequeño Deseo* ("Small Wish") Foundation and *Urrainfancia*. Participants were spread across the entire country and almost all regions contributed cases to the sample, although the number of participants from each region varied.

Finally, there was heterogeneity in the kind of adversity that the participants were suffering from. For this reason, problems or adversities were grouped into broad categories. Frequencies and percentages of these categories are shown in Table 1.

Table 1 Categorization of the traumatic events participants suffer from		
Trauma category	**Frequency**	**Percentage**
Addictions	8	3.6
Cancer	16	7.2
Disability	18	8.1
Conflictive divorce	11	5.0
Rare and/or neurodegenerative disease	48	21.6
Major illnesses (heart attacks, transplants, etc.)	36	16.2
Suicide attempts	11	5.0
Sudden loss of loved one	29	13.1
Grieving a death	5	2.3
Victim of abuse (adults)	10	4.5
Victim of abuse (children)	20	9.0
Victim of terrorism	3	1.4
HIV	5	2.3
Other	2	1.0
TOTAL	222	100.0

Instruments

Before discussing the characteristics and structure of Trauma, it should be emphasized that it is the final version of an instrument that, in its original version, was composed of 78 items, measuring 14 constructs: Values, Principles, Ethics, Acceptance, Adaptation, Internal Control, Creativity, Hope, Spirituality, Social Skills, Emotional Intelligence, Leisure, Optimism, Social Relationships, Sense of Humor, and Congruence. For a detailed description of the development and construction of Trauma, please consult Urra & Escorial (2012).

Within the TRrauma validation process, a series of pilot studies, which were carried out during the initial stages, deserve to be briefly commented. The first pilot study could be framed within evidence of content validity of the test (Paz, 1996). In this study, the initial version of the instrument was submitted to a panel of experts. They were asked to collaborate by evaluating the relevance of each item (on a 1 to 5 scale) and representativeness of the test (on a 0 to 10 scale). The results of this study showed that around 15% of the items (depending on the expert) were incorrectly classified, but despite this, all items showed an average relevance greater than 3, and only 30 items obtained average relevance scores less than 4, which would represent 39% of the items that make up the test. In relation to the representativeness of the scales, the experts found problems in this regard in the Spirituality and Leisure scales. A much more detailed analysis of these aspects can be found in Urra (2011). In the second pilot study, the questionnaire was sent to two special interest groups: (a) professionals from various fields who work with people who are going through a traumatic life event (*n* = 103), and (b) those affected or involved by a traumatic life event (*n* = 82). In this study, detailed in Urra (2010), 12 scales were proposed instead of the initial 14, obtained after collapsing into a single dimension on the one hand, Emotional Intelligence and Internal Controls, and on the other, Optimism and Hope. In addition, the analysis of the elements and reliability of the scales allowed for a reduction in the number of items, the initial 78 were reduced to 66 items (for more information, see Urra, 2011).

From the 66-item questionnaire that provided information on 12 scales, a series of analyzes were carried out in an intermediate phase that led to the elimination of some items that 1) were clearly not loaded in any of the factors; 2) showed loadings scattered among various factors; and 3) showed low correlations with the scores of the reference scale.

This removal of items particularly affected items from the Leisure and Creativity scales, so these scales do not appear in the final version of the test. The Spirituality Scale was also removed from the final version of the test, as it was only operationalized through 2 items that a) were unrelated to the rest of the items; b) had very low internal consistency values; and c) had been considered to be less relevant in overcoming adversity in life in previous studies.

In summary, the final version of Trauma, published by Urra and Escorial (2012), is a test that consists of 60 items with a Likert-type response format, ranging from 1 (*Not developed*) to 5 (*Fully developed*). The test seeks to assess six dimensions and yields a global resilience score. First, the Emotional Intelligence and Internal Control scale (12 items), which assesses knowledge of self and the ability to handle needs and control impulses as required by the situation. The Values, Principles and Ethics (10 items) scale gathers some moral behaviors individuals apply to

live in solidarity and altruism with others. Thirdly, the Optimism, Hope and Sense of Humor scale, (12 items), aims to assess positive attitude in the present and hopefulness towards the future along with the ability to relativize the importance of events, share smiles and laugh at oneself. The Social Skills and Relationships scale, (10 items), attempts to measure the behaviors that facilitate relationships with the environment and interactions with family, friends, colleagues and acquaintances. The fifth scale, Acceptance and Adaptation (8 items), seeks to assess the extent to which the subjects are aware and adjust to the things that happen to them and their ability to adapt daily to the new circumstances. Finally, the Congruence scale (8 items) attempts to measure the internal consistency, that is, the ability of individuals to act consistently with what one thinks and intends.

Procedure

Once the instrument had been developed, the questionnaires along with a letter explaining the reasons for the research were sent to all participants, encouraging them to participate in the study. To achieve greater geographic coverage, instruments were sent via 3 different means: postal mail, email and a software application that was available on the "*Urrainfancia*" website.

Thus, 36.5% of the participants used postal mail, 33.3% used email and 30.2% performed the task through the web application. Once the fieldwork was finished, data were recorded on computer for later analysis. To ensure the data recording phase was carried out correctly, 33% of the protocols were randomly selected and the entries in the data file reviewed, item by item. No errors were detected.

With respect to missing values, strict criteria were undertaken: All subjects with a missing value on any item were eliminated from the database that was used in the analysis. This approach was chosen because subject loss did not involve great expense in the overall study. In total, the number of valid cases accounted for 98.2% of the cases received, that is, the number of cases eliminated from the study because of missing values represented 1.8% of the cases received.

Data analyses

To gather evidence of validity based on the internal structure of the instrument and to analyze the dimensionality of TRauma, a confirmatory factor analysis (CFA) approach was selected. In spite of previous evidence being available, the fit of the data to three different theoretical models was contrasted. In the first model and given the high correlations between factors found in previous studies (Urra, 2010, 2011), the fit of the data was contrasted to a model in which all items loaded in one. The second model reproduced the six factor structure detailed above and allowed correlation between the model and factors. In the third model and motivated by the high correlations observed between the first-order factors, the data was fitted to a model in which, according to the variance shared between these six factors, a second-order factor was extracted. The estimation method was MLM (Maximum Likelihood Mean Adjusted; Bentler, 1995). To assess the fit of each model, the most commonly used indexes were considered: absolute fit indexes: Chi-square, descriptive adjustment indexes: comparative fit index (CFI), incremental fit indexes (IFI) and normed fit index (NFI) and indexes based on

residuals and approximation errors: root mean square residual (RMR) and root mean square error of approximation (RMSEA). Analyses were performed with the LISREL 8.8 (Jöreskog & Sörbom, 2006) program.

For the reliability and element analyses, Classical Test Theory was taken as reference, assessing reliability, internal consistency, using the alpha coefficient and discrimination indexes, calculated as the corrected correlation of the item score with that of the scale or factor (Abad, Olea, Ponsoda, & García, 2011; Martínez-Arias, Hernández-Lloreda, & Hernández-Lloreda, 2006; Muñiz, 1996).

Results

Firstly, the fit of the data to various theoretical models was contrasted. While it is true that the three models yielded a poor fit to the data, an increase in the fit when changing from a single factor model (Model 1, $\chi^2(1710) = 5250.62$) to the six related factors model (Model 2, $\chi^2(1695) = 5136.31$) was found when comparing nested models. This is understandable as it provides the structure with greater flexibility. The model with the second-order factor (Model 3, $\chi^2(1704) = 5061.53$) showed an improvement in the fit in comparison to the previous model (Model 2). The improvement in the fit is statistically significant in all cases. All loadings of Model 3 were statistically significant ($p<.001$), although the overall fit of the model was not so good.

Due to the large number of items, added to the difficulties this poses for obtaining clear factors, and the lack of adjustment to factorial model assumptions that items usually have, items were divided into subgroups, forming three subgroups of the same dimension. This procedure is quite common in empirical studies and is recommended to best fit the assumptions of factor analysis (Bagozzi & Edwards, 1998; Bagozzi & Heatherton, 1994; Bandalos, 2002).

The adjustment of the three models described above was contrasted using the information from the subgroups created. In this case, in the nested models comparison, an increase in the adjustment was found when changing from a single factor model (Model 1, $\chi^2(135) = 507.21$) to the six factor model (Model 2, $\chi^2(120) = 474.83$). Moreover, the second-order factor model (Model 3, Chi-square: $\chi^2(129) = 420.17$) showed an improvement in the fit in relation to the previous model. The improved fit is statistically significant in all cases. All loadings of Model 3 were statistically significant ($p<.001$).

Figure 1 shows Model 3 to which 18 subgroups have been adjusted (3 for each first-order factor). All loadings were statistically significant ($p<.001$). The descriptive indexes of model fit detailed in the figure (CFI = .97, IFI = .97, and NFI = .96) show very good fits, with values slightly higher than .95, which is considered as good fit (Hu & Bentler, 1999). The RMR is slightly below the recommended value .05 (RMR = .04). However, the RMSEA is somewhat higher than the value reported as good fit (RMSEA = .083). Therefore, in general, the 6 proposed factors with the corresponding subgroups that compose them can be maintained, together with a very robust 2nd order factor.

Moreover, Table 2 summarizes the main features associated with the reliability coefficient. These coefficients were obtained using Cronbach's alpha coefficient. The table presents the results for the six factors as well as for the total score.
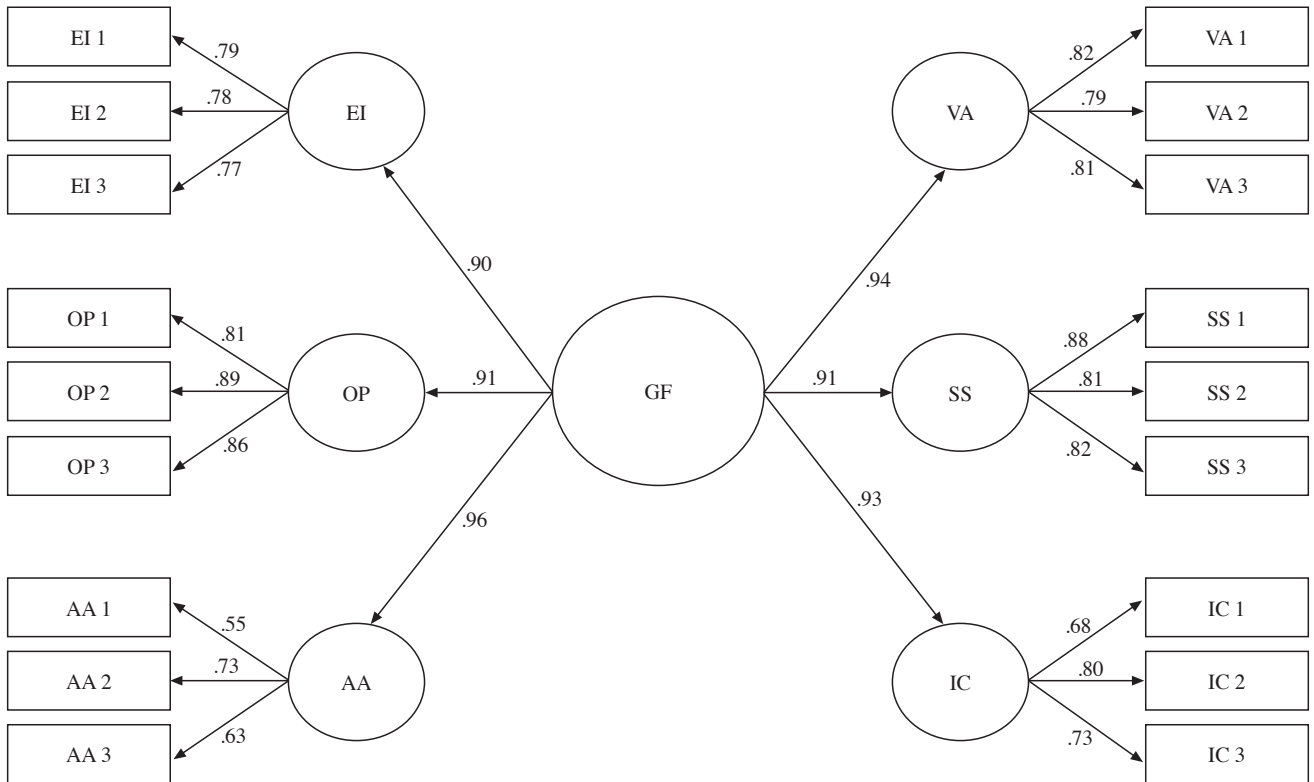

Figure 1. *Factorial structure of TRauma with items in subgroups. Note: EI: Emotional Intelligence and internal control; VA: Values, principles, ethics; OP: Optimism, hope and sense of humor; SS: Social skills and relationships; AA: Acceptance and adaptation; IC: Internal Congruency; GF: General Factor of resilience*

SCALE	**N**	**Alpha**	**IC 95%**	**Median discrim. indexes**	**Mean correl. items**	**Standard error of score**
Emotional intelligence and internal control	12	0.82	0.78-0.85	0.490	0.282	2.55
Values, principles, ethics	10	0.83	0.80-0.87	0.518	0.338	2.48
Optimism, hope and sense of humor	12	0.87	0.85-0.90	0.590	0.369	2.12
Social skills and relationships	10	0.84	0.81-0.87	0.530	0.358	2.12
Acceptance and adaptation	8	0.75	0.70-0.80	0.446	0.278	2.20
Internal congruency	8	0.80	0.76-0.84	0.499	0.337	1.88
Total score	60	0.96	0.95-0.97	0.529	0.288	5.53

Table 2
Reliability statistics

As can be observed in the table, the reliability coefficients are very high for both simple factors and the total score, exceeding in all cases the recommended limit of .70 suggested by Nunnally and Bernstein (1994). In general, the values of the discrimination indexes of the items are very high, exceeding in all cases the conventional limit of .30. A summary is presented in the table, showing the median of the discrimination indexes of all the items included in each factor.

Finally, the descriptive statistics of the scores on the six scales, plus the total score on the test are presented in Table 3, calculated as raw scores from the sum of the corresponding items. The theoretical range (possible minimum and maximum values) for each score are also presented in Table 3.

No significant differences were found in terms of gender or age group of the participants (under 35 years, between 35 and 50 years and older than 50 years) in any of the scales of TRauma, or for the overall score.

Discussion

The aim of this study was to evaluate the main psychometric properties of the Resistance to Trauma Test: TRauma (Urra & Escorial, 2012). The guidelines set out by the *Standards for Educational and Psychological Testing* (APA, AERA, NCME, 1999) were observed throughout the development and construction of TRauma.

Firstly, in relation to the factorial structure of the instrument, the results found in this study largely reproduce previous results (Urra, 2010, 2011; Urra & Escorial, 2012). In general, it can be maintained that the instrument has a six-factor structure of first order that collapses into a single, very robust second-order factor.

Scale	Theoretical range	Mean	S. deviation
Emotional intelligence and internal control	0-48	35.54	6.027
Values, principles, ethics	0-40	29.24	6.023
Optimism, hope and sense of humor	0-48	39.45	5.873
Social skills and relationships	0-40	29.78	5.290
Acceptance and adaptation	0-32	23.79	4.387
Internal congruency	0-32	25.39	4.195
Total score	0-240	183.02	27.627

Table 3
Descriptive statistics of the scores of each scale

On the other hand, the high correlations observed between first-order factors would question the discriminant validity of such factors (Martínez-Arias, Hernández-Lloreda, & Hernández-Lloreda, 2006). Despite this, the authors of TRauma suggest that, due to the purpose of the test, it is advisable to obtain the scale scores separately (Urra & Escorial, 2012). Furthermore, the fact that these correlations are so high justifies the use of a total score in the evaluation.

The second-order factor could be interpreted as a general factor of resilience. The social sciences have used the term resilience applied as a metaphor to describe phenomena observed in people who, despite living in conditions of adversity, are nonetheless able to develop behaviors that enable a good quality of life. Although there are many definitions of the term, one possible definition of resilience is the human capacity to face, overcome and emerge strengthened or transformed by experiences of adversity (Melillo & Suárez Ojeda, 2001).

Furthermore, different definitions of the concept of resilience emphasize the main features of the resilient individual: skills, adaptability, low susceptibility, effective confrontation, capacity, resistance to destruction, positive life behaviors, special temperament and cognitive abilities, all deployed against adverse life events, stressors, etc., which help to overcome such events (Melillo & Suárez Ojeda, 2001). Many of these features are covered in the theoretical and empirical basis of the TRauma scale (Urra & Escorial, 2012). Many authors propose the concept of resilience is a multidimensional concept (Echeburúa, Corral, & Amor, 2005; Seligman, 2004; Serrano-Parra et al., 2013; Vera, 2006), and data from this study support this concept of resilience.

Moreover, the number of studies researching the resilience construct and its impact has increased in recent years (Ong, Zautra, & Reid, 2010; Sturgeon & Zautra, 2010; Vinaccia, Quiceno, & Remor, 2012; Windle et al., 2011). In fact, some authors have developed systematic reviews of the literature on the weight of resilience in chronic diseases, finding an exponential increase of these studies year after year, especially in Anglo-Saxon countries (Stewart & Yuen, 2011; Trivedi, Boswoth, & Jackson, 2011).

Secondly, it can be concluded that TRauma is an accurate or reliable instrument. The reliability coefficients observed in the sample of people affected by a traumatic event are very high, both for the six scales and for the total score. All cases exceed the recommended limits of .70 suggested by Nunnally and Bernstein (1994), which are usually regarded as reference value. Furthermore, the values of the discrimination indexes of the items are generally very high, exceeding in all cases the conventional limit of .30 (Nunnally & Bernstein, 1994).

Thirdly, this study analyses a sample of individuals who are affected by many different types of traumatic events. This heterogeneity in the composition of the sample is based on Urra's (2011) study, who found that there were no significant differences in scale scores according to type of traumatic event. That is, regardless of whether the subjects are affected by a neurodegenerative disease, cancer, HIV or are victims of abuse, the importance they confer to the factors that constitute strength in the face of adversity is similar. This result is consistent with Echeburúa et al.'s (2005), Seligman's (1999) and Vera's (2006) arguments.

Finally, this study does not close the validation process of TRauma, as it is necessary to continue collecting empirical evidence to provide test scores of a coherent theoretical interpretation relative to a well-defined context of use (APA, AERA, NCME, 1999). In this sense, although other groups of people (e.g., subjects not affected by a traumatic event) are analyzed in the test's manual (Urra & Escorial, 2012), more research is needed into other groups and populations that may be of special interest (e.g., police and firefighters, doctors and health professionals, etc.). Moreover, it is desirable to deepen research into the relationships the TRauma scales may have with other standardized measures of similar constructs (convergent and discriminant validity).

In short, the aim of this study was not to present a complete and closed validation process (if that were possible). In fact, the aim was to simply analyze the psychometric properties and factorial structure of an instrument, TRauma, that may be interesting in the evaluation of the factors that make us resistant to adverse situations that all of us, at some point in our lives, have to face.

References

Abad, F.J., Olea, J., Ponsoda, V., & García, C. (2011). *Medición en Ciencias Sociales y de la Salud* [Measurement in the social and health sciences]. Madrid: Síntesis.

Álvarez, R. (1998). *Salud pública y medicina preventiva* [Public health and preventive medicine]. México: Manual Moderno.

American Psychological Association (APA), American Educational Research Association (AERA) & National Council on Measurement in Education (NCME) (1999). *Standards for Educational and Psychological Testing*. Washington, D.C.: American Psychological Association.

Bagozzi, R.P., & Edwards, J.R. (1998). A general approach for representing constructs in organization research. *Organizational Research Methods, 1,* 45-87.

Bagozzi, R.P., & Heatherton, T.F. (1994). A general approach to representing multifaceted personality constructs: Application to state self-esteem. *Structural Equation Modeling, 1,* 35-67.

Bandalos, D.C. (2002). The effect of item parcelling on goodness-of-fit and parameter estimates bias in SEM. *Structural Equation Modeling, 9,* 78-102.

Bentler, P.M. (1995). *EQS structural equations program manual*. Encino, CA: Multivariate Software.

Campell-Sills, L., & Stein, M.B. (2007). Psychometric analysis and refinement of the Connor-Davidson Resilience Scale (CD-RISC): Validation of a 10 item measure of resilience. *Journal of Traumatic Stress, 20,* 1019-1028.

Connor, K.M., & Davidson, J.R.T. (2003). Development of a new resilience scale: The Connor-Davidson resilience scale (CD-RISC). *Depress Anxiety, 18,* 76-82.

Cowen, E.L., & Kilmer, R.P. (2002). "Positive psychology": Some plusses and some open issues. *Journal of Community Psychology, 30,* 449-460.

Cuadra, H., & Florenzano, R. (2003) El bienestar subjetivo: hacia una psicología positiva [Subjective well-being: Towards a positive psychology]. *Revista de Psicología de la Universidad de Chile, 12,* 83-96.

Echeburúa, E., Corral, P., & Amor, P.J. (2005). La resistencia humana ante los traumas y el duelo. En W. Astudillo, A. Casado y C. Mendinueta (Eds.), *Alivio de las situaciones difíciles y del sufrimiento en la terminalidad* [Relief from difficult situations and suffering with terminal] (pp. 337-359). San Sebastián: Sociedad Vasca de Cuidados Paliativos.

Fernández-Ríos, L., & Buela-Casal, G. (1997). El concepto de salud/enfermedad. En G. Buela-Casal, L. Fernández-Ríos y T.J. Carrasco (Eds.), *Psicología preventiva. Avances recientes en técnicas y programas de prevención* [Preventive psychology. Recent advances in techniques and prevention programs] (pp. 27-38). Madrid: Pirámide.

Friborg, O., Barlaug, D., Martinussen, M., Rosenvinge, J.H., & Hjemdal, O. (2005). Resilience in relation to personality and intelligence. *International Journal of Methods in Psychiatric Research, 14,* 29-42.

Froh, J.J. (2004). The History of Positive Psychology: Truth Be Told. *NYS Psychologist, 16,* 18-20.

Furr, R.M. (2005). Differentiating happiness and self-esteem. *Individual Differences Research, 3,* 105-127.

Held, B.S. (2002). The thyranny of the positive attitude in America: Observation and speculation. *Journal of Clinical Psychology, 58,* 965-992.

Hu, L.T., & Bentler, P.M. (1999). Cutoff criteria for fix indexes in covariance structural analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling, 6,* 1-55.

Jahoda, M. (1958). *Current concepts of positive mental health*. Nueva York: Basic Books.

Jarne, A. (1996). Clasificación y diagnóstico en psicopatología. En A. Jarne (Coord.), *Psicopatología clínica* [Clinical Psychopathology] (Vol. I, pp. 61-87). Barcelona: Promociones y Publicaciones Universitarias.

Jöreskog, K.G., & Sörbom, D. (2006). *LISREL 8.80 for Windows* [Computer software]. Lincolnwood, IL: Scientific Software International, Inc.

Lazarus, R.S. (2003). Does the positive psychology movement have legs? *Psychological Inquiry, 14,* 93-109.

Linley, A., Joseph, S., Harrington, S., & Wood, A.M. (2006). Positive psychology: Past, present, and (possible) future. *The Journal of Positive Psychology, 1,* 3-16.

Martínez-Arias, R., Hernández-Lloreda, M.J., & Hernández-Lloreda, M.V. (2006). *Psicometría* [Psychometry]. Madrid: Alianza Editorial.

Matthews, G., & Zeidner, M. (2003). Negative appraisals of positive psychology: A mixed-valence endorsement of Lazarus. *Psychological Inquiry, 14,* 137-143.

Melillo, A., & Suárez Ojeda, E. (2001): *Resiliencia. Descubriendo las propias fortalezas* [Resilience. Discovering one's strengths]. Buenos Aires: Paidós.

Muñiz, J. (Cord.) (1996). *Psicometría* [Psychometry]. Madrid: Editorial Universitas.

Notario-Pacheco, B., Solera-Martínez, M., Serrano-Parra, M.D., Bartolomé-Gutiérrez, R., García-Campayo, J., & Martínez-Vizcaíno, V. (2011). Reliability and validity of the Spanish version of the 10-item Connor-Davidson Resilience Scale (10-item CD-RISC) in young adults. *Health Quality of Life Outcomes, 9,* 63.

Nunnally, J.C., & Bernstein, I.H. (1994). *Psychometric Theory, 3th ed.* New York: McGraw Hill.

Ong, A.D., Zautra, A.J., & Reid, M.C. (2010). Psychological resilience predicts decreases in pain catastrophizing through positive emotions. *Psychological Aging, 25,* 516-523.

Organización Mundial de la Salud (1948). Preámbulo de la Constitución de la Organización Mundial de la Salud. *Official Records of the World Health Organization,* Nº 2, p. 100.

Paz, M.D. (1996). Validez. En J. Muñiz (Coord.), *Psicometría* [Psychometry] (pp. 49-103). Madrid: Editorial Universitas.

Peterson, C., & Seligman, M.E.P. (2004). *Character strengths and virtues: A handbook and classification*. Oxford: Oxford University Press.

Prieto-Úrsua, M. (2006). Psicología positiva: una moda polémica [Positive psychology: A trend controversy], *Clínica y Salud, 17*, 319-338.

Ryff, C.D. (2003). Corners of myopia in the positive psychology parade. *Psychological Inquiry, 14*, 153-159.

Seligman, M.E.P. (1998). *Aprenda optimismo. Haga de la vida una experiencia maravillosa*. Barcelona: Grijalbo.

Seligman, M.E.P. (1999). Building human strength. Psychology's forgotten mission. *APA Monitor, 28*(1).

Seligman, M.E.P. (2000) Positive psychology, positive prevention, and positive therapy. En C.R. Snyder & S.J. LÓpez (Eds.), *Handbook of Positive Psychology* (pp. 3-9). New York: Oxford University Press.

Seligman, M.E.P. (2003). The past and future of positive psychology. En C.L.M. Keyes & J. Haidt (Eds.), *Flourishing: Positive psychology and the life well-lived* (pp. 11-20). Washington DC: American Psychological Association.

Seligman, M.E.P. (2004). *Authentic happiness: Using the new positive psychology to realize your potential for lasting fulfillment*. New York: Free Press.

Seligman, M.E.P., & Csikszentmihalyi, M. (2000). Positive psychology. An introduction. *American Psychologist, 55*, 5-14.

Seligman, M.E.P., Steen, T., Park, N., & Peterson, C. (2005). Positive psychology progress: Empirical validation of interventions. *American Psychologist, 60*, 410-421.

Serrano-Parra, M.D., Garrido-Abejar, M., Notario-Pacheco, B., Bartolomé-Gutiérrez, R., Solera-Martínez, M., & Martínez- Vizcaíno, V. (2013). Validez de la escala de resiliencia de Connor-Davidson (10 ítems) en una población de mayores no institucionalizados [Validity of the Connor-Davidson resilience scale (10 items) in a population of elderly]. *Enfermería Clínica, 23,* 14-21.

Smith, B.W., Dalen, J., Wiggins, K., Tooley, E., Christopher, P., & Bernard, J. (2008) The brief resilience scale: Assessing the ability to bounce back. *International Journal of Behavioural Medicine, 15*, 194-200.

Stewart, D., & Yuen, T. (2011). A systematic review of resilience in the physically Ill. *Psychosomatics, 52,* 199-209.

Sturgeon, J.A., & Zautra, A.J. (2010). Resilience: A new paradigm for adaptation to chronic pain. *Current Pain and Headache Reports, 14*, 105-112.

Trivedi, R., Bosworth, H.B., & Jackson, G.A. (2011). Resilience in chronic illness. In B. Resnick, L.P. Gwyther & K.A. Roberto (Eds.), *Resilience in aging: Concepts, research, and outcomes* (pp. 181-197). New York: Springer.

Urra, J. (2010). *Fortalece a tu hijo: guía para afrontar las adversidades de la vida* [Strengthen your child: A guide for dealing with life's adversities]. Barcelona: Planeta.

Urra, J. (2011). *Fortalezas para afrontar los socavones de la vida* [Strengths to face the adits of life]. Tesis doctoral. Universidad Complutense de Madrid.

Urra, J., & Escorial, S. (2012). *Manual del Test de Resistencia al trauma: TRauma* [Test of Resistance to trauma: TRauma, manual]. Madrid: Editorial EOS.

Vera, B. (2006). Psicología positiva: una nueva forma de entender la Psicología [Positive psychology: A new way to understand the Psychology]. *Papeles del Psicólogo, 27*, 3-8.

Vinnacia, S., Quiceno, J.M., & Remor, E. (2012). Resiliencia, percepción de enfermedad, creencias y afrontamiento espiritual-religioso en relación con la calidad de vida relacionada con la salud en enfermos crónicos colombianos [Resilience, illness perception of disease, beliefs and spiritualreligious coping in relation to the health-related quality of life in chronic colombian patients]. *Anales de Psicología, 28,* 366-377.

Windle, G., Bennett, K.M., & Noyes, J. (2011). A methodological review of resilience measurement scales. *Health and Quality of Life Outcomes, 9*, 1-18.

Winett, R.A., Riley, A.W., King, A.C., & Altman, D.G. (1993). Prevención en salud mental. Un enfoque proactivo-evolutivo-ecológico. En T.H. Ollendick y M. Hersen (Dirs.), *Psicopatología infantil* (pp. 572-590). Barcelona: Martínez Roca.