

## General

# Adaptation and Validation of the Texas Revised Inventory of Grief—Present Scale

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Keywords: Grief, Adaptation, Validation, Psychometric Properties, Confirmatory Factor Analysis

<https://doi.org/10.52965/001c.39652>

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## Health Psychology Research

Vol. 10, Issue 4, 2022

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This study aims to evaluate the psychometric properties and internal consistency of the Spanish version of the Texas Revised Inventory of Grief- Present [TRIG-Present] in Buenos Aires, Argentina, which assesses a series of thoughts, emotions and behaviors in losses related to the present. A total of 285 adults participated in the study with ages between 18 and 80 years ( $M = 55.09$ ,  $SD = 15.27$ ) and both sexes (Men = 42.8%, Women = 57.2%). The three-factor model resulted in acceptable fit indices ( $TLI = .970$ ;  $CFI = .976$ ;  $SRMR = .064$ ). The results indicated an acceptable internal consistency for Emotional Response ( $\omega = .850$ ), Not Acceptance ( $\omega = .816$ ) and Thought ( $\omega = .837$ ). The Spanish adaptation of the TRIG-Present presents 13 items proposed by the original authors.

Grief is the result of various anticipated losses or losses, especially the death of a close relative.<sup>1</sup>

The Texas Grief Inventory, evaluated a series of losses related to past and present losses to thoughts, emotions, and behaviors. This scale was expanded on the Texas Revised Grief Inventory [TRIG], which includes 13 items that measure pain present [TRIGPresent], and eight items that evaluate the past interruption due to loss [TRIG - Past].<sup>1</sup>

Few researchers rigorously examined the reliability and validity of the TRIG- Past, and TRIG- Present scores. Given that most researchers and health professionals are mostly interested in evaluating the current grief to improve emotional well-being,<sup>2</sup> we decided to devote ourselves only to the TRIG-Present.

The TRIG-Present contains elements that research a variety of manifestations related to grief. Futterman et al. (2010)<sup>2</sup> carried out an exploratory factorial analysis and divided the items into three dimensions: Non-Acceptance, which are the elements that denote difficulty in accepting the loss (3 items), Emotional Response, which evaluates the emotional response to the loss (5 items) and Thoughts, is the combination of the cognitive and emotional components of grief (5 items).

TRIG was initially considered a measure of unresolved grief,<sup>3</sup> although it has later been conceptualized as a measure of normal grief.<sup>4</sup> Normal grief is the process that a person who suffers a loss goes through, it is the set of physical, emotional, and social reactions to the death of a close person, the duration is variable, but it is considered a normal process between one and two years.<sup>5</sup>

Different authors state that the symptoms of normal grief are very similar to those of complicated grief during the first six months, but that after this period most people can accept the reality of the loss, in contrast to those who

continue to express a chronic pain whose symptoms are observed up to two years after death.<sup>6,7</sup>

In a research, have compared the TRIG-Present with the Complicated Grief Inventory [ICG], which is a more recent measure that attempts to measure pathological or prolonged grief disorder and assesses symptoms such as severe separation anxiety and functional deficits as a result of the loss. She concludes that the symptoms TRIG evaluates are a reflection of short-lived grief reactions that eventually resolve over time.<sup>8</sup>

Some authors relate pain to spirituality, in this sense, they explain that those who lose a loved one request to cling to spirituality as a protective resource.<sup>9–12</sup> When having an important loss, people try to reconstruct the meaning and sense of spirituality through the search for answers and explanations to what happens after the painful experience; therefore, the belief that the loved one is in a peaceful place creates a feeling of tranquility. Those who go through a grieving process are capable of taking the resources that their practices or beliefs provide to re-signify the loss; these tools have an important relationship with resilience since through this people can give their lives meaning again and find comfort.<sup>13,14</sup>

Actually, in the Argentine context, there isn't a psychometric instrument to evaluate non-pathological grief. Therefore, this study aims to test the evidence of validity the TRIG-Present.

Some of the countries in which the TRIG-Present scale was validated are China,<sup>15</sup> Germany,<sup>16</sup> Spain,<sup>17,18</sup> Sweden,<sup>19</sup> Turkey<sup>20</sup> and United States<sup>2,21,22</sup> (Table 1).

**Table 1. Validation articles of TRIG- Present**

Authors	Year	Country	Sample	N	Cronbach's Alpha	CFI	RMSEA
Holm et al.	2018	Sweden	Family caregivers	129	0.95	0.97	0.086
Li et al.	2018	Spain	General population	466	0.95	0.92	0.098
Diaz et al.	2016	Spain	Unemployed	217	0.90	-	-
Ilsung y Shaun	2012	United States	Senior caregivers	200	0.74 a 0.89	0.95	0.06
Yildiz y Cimete	2011	Turkey	Parents of children who died	154	0.84	0.86	0.089
Futterman et al.	2010	United States	Older adults	212	0.86	0.92	0.057
Hansjong-Tnoj	2008	Germany	Parents of children who died	400	0.87	-	-
Wilson	2007	United States	Latino Seniors	134	0.95	0.74	0.18
Garcia-Garcia	2005	Spain	Widowers in health centers	118	0.86	-	-

Note: N= Sample

## METHOD

### PARTICIPANTS

Sample was composed of 285 Argentinian adults with ages between 18 and 80 years ( $M = 55.09$ ,  $SD = 15.27$ ) and both sexes (Men = 42.8 %, Women = 57.2 %). Those participants who were under psychiatric treatment were excluded. Participation was anonymous and voluntary, data were collected through an online form complying with the codes of ethical conduct established by the National Scientific and Technical Research Council (CONICET) (Res. D No. 2857/06).

### MEASURES

*Texas Revised Inventory of Grief- Present [TRIG-Present].*<sup>1</sup> It is a 13 items self-administered questionnaire that evaluates three dimensions: (1) Emotional Response (items 1, 2, 5, 7, 13) (e.g. “I even cry when I think of the person who died” / “Todavía lloro cuando pienso en la persona que murió”). (2) Non-Acceptance (items 3, 10, 12) (e.g. “I feel it is unfair that this person have died” / “Siento que es injusto que esta persona haya muerto”). (3) Thoughts (items 4, 6, 8, 9, 11) (e.g. “I can’t avoid thinking of the person who died” / “No puedo evitar pensar en la persona que murió”).

*Sociodemographic data questionnaire:* An ad hoc questionnaire was developed that asked participants to record their age, gender and months of the death.

*Assessment of Spirituality and Religious Sentiments Scale [ASPIRES].*<sup>23,24</sup> It is a 35 items self-administered that evaluates two dimensions: (1) Religious feelings [Religious Participation ( $\alpha > 0.84$ ) and Religious Crisis ( $\alpha > 0.68$ )] and (2) Spiritual Transcendence [Realization in Prayer ( $\alpha > 0.91$ ), Universality ( $\alpha > 0.76$ ) and Connectivity ( $\alpha > 0.57$ )]. Items 1, 2, 3, 4, 8, 9, 10, 12, 14, 15, 16, 19 and 20 are scored in reverse. The scale presents a likert-type format of five to seven response anchors depending on the degree of agree-

ment with the participants. The scale showed adequate psychometric properties.

### PROCEDURE

For the adaptation and validation of TRIG- Present a back-translation of the original technique was made, trying to maintain the psychological sense of each term. The questionnaire was carried out online through Facebook advertising between November 6<sup>th</sup> 2020 and April 8<sup>th</sup> 2021 aimed at the general adult population of Buenos Aires, Argentina. Participation was anonymous, voluntary and no compensation or incentive was offered.<sup>25</sup>

### ETHICAL ASPECTS

The research project in which the study is framed was submitted for evaluation by an ethics committee. Participation was voluntary, specifying that completing the form would be equivalent to signing an informed consent, complying with the codes of ethics established by the National Council for Scientific and Technical Research (CONICET) (Res. D No. 2857/06). Finally, it was indicated that the results were used exclusively for scientific-academic purposes in accordance with National Law 25,326 on the Protection of Personal Data.

### DATA ANALYSIS

First, a confirmatory factor analysis was performed to verify if the structure of the model is replicated in the sample collected in the present study. We used the DWLS estimation method and polychoric correlation matrices given the ordinal character of the items.<sup>26</sup> The fit of the model was interpreted using the Tucker-Lewis index (TLI), Comparative fit index (CFI) and Standardized Root Mean Square Residual (SRMR). TLI and CFI values above .90 and SRMR values below .08 are considered indicators of good fit.<sup>27</sup> The internal

consistency of the dimensions was also analyzed using the omega coefficient where the appropriate values are located above .70.<sup>28,29</sup>

Secondly, a cross-validation was carried out to corroborate whether a three-factor model presented adequate fit and similar performance when the sample was divided according to gender. To evaluate the fit of the model in the cross-validation study, the following fit indices were analyzed: TLI, CFI, and SRMR.

Third, the factorial invariance of the model according to gender was analyzed. Three nested models were tested -configural, metric, structural- imposing different levels of restriction progressively. The metric equivalence of the model was interpreted from the CFI and RMSEA indices, where values less than .01 and .015, respectively, are indicators of invariance.<sup>30</sup>

Fourth, the internal consistency of the instrument's dimensions was compared between men and women. For this purpose, the omega coefficient was calculated.<sup>29</sup> Then, the indices were compared by the Alpha Test software.<sup>31,31</sup> Besides, the effect size was calculated with Cohen's *q* index,<sup>32,33</sup> where values are interpreted as null ( $< .10$ ), small (between .10 to .30), medium (between .31 to .50) and large ( $> .51$ ).

Fifth, item equivalence was examined by differential item function analysis (DIF). The Mantel-Haenszel (MH) statistic suggested for the analysis of ordinal items was applied.<sup>34</sup> To interpret this analysis, a conservative criterion ( $M-X^2 > 6.63$ ) was adopted to determine the presence of significant differences ( $p < .01$ ) between the focus group and the reference group.<sup>35</sup> The jMetrik 4.1 software was used.

Sixth, an external validation was carried out, analyzing the correlation between the constructs of grief and spirituality.

Seventh, an analysis of mean differences for each of the scales according to gender was carried out to decide whether it would be appropriate to design unified or independent statistical norms for men and women.

## RESULTS

### CONFIRMATORY FACTOR ANALYSIS

Confirmatory factor analysis indicated a good fit to the data of the three factor correlated model proposed by the authors.<sup>27,36</sup> All parameters were statistical signification ( $p < .05$ ). Besides, internal consistency analyses report optimal indices in all dimensions (Table 2).

In the cross-validation using gender as a segmentation variable, both samples of women and men demonstrated a good model fit, with an TLI and CFI above .90 and a SRMR below .080 for both subsamples (Table 3).

Factorial invariance of the model was tested by gender. Three models with different restriction levels -configural, metric, structural- were analyzed. Its procedure verified the metric equivalence of the internal structure instrument in both genders (Table 4).

Therefore, the internal consistency of the dimensions in each subsample -male and female- was estimated to be compare later. Omega indices did not register statistical

significant differences. Besides, the effect size for each comparison was small or null (table 5).

Then, a differential item functioning test was applied to verify the items metric equivalence among gender (Table 6). Results did not verify statistical differences ( $p > .01$  and  $M-X^2 > 6.63$ ).

Regarding external validation, a correlational analysis was carried out between TRIG-Present and ASPIRES, taking into account the theoretical relevance of the relationship of the constructs evaluated by these scales.<sup>37-39</sup> The trifactorial model of grief was correlated with the dimensions of Spirituality (Universality, Connectivity and Fulfillment in Prayer), obtaining a positive correlation between Universality with Emotional Response and Non-acceptance, while the relationship was inverse between Thought and connectivity (Table 7). No significant results were found with the Realization dimension in the sentence.

Finally, dimension differences between gender were examined to evaluate the necessity to take some care when in the score's interpretation. Non-statistical differences were verified.

## DISCUSSION

This article set out to explore evidence of the validity of the Argentinian version of the TRIG- Present inventory. The results suggest that concerning factor structure and internal consistency, the TRIG- Present inventory has acceptable psychometric properties in the Argentinean context.

The results of the CFA present an adequate fit of the model for the one estimation method used, Diagonally Weighted Least Squares [DWLS], which verifies the robustness of the internal structure of the instrument. According to the CFA, this study presents acceptable Fit Index (CFI  $> .90$ ; TLI  $> .90$ ; SRMR  $< .08$ ), showing a CFI of .976; TLI .970 and SRMR .064.

Regarding the CFI obtained higher values than the validations carried out in other countries, that oscillated between .86 and .97.<sup>2,15,19-21</sup>

Regarding internal consistency, the Emotional Response dimension had the highest values with an Omega of .850, then in the Thought dimension an Omega of .837 was obtained and the lowest value was that of the Non-Acceptance dimension with a value of .816.

One of the most appropriate procedures to examine whether the fit of a model is maintained in different samples is cross-validation. In this study, the fit indices obtained in the two sub-samples based on gender were adequate and provide further support to the trifactorial structure of the TRIG- Present scale. Obtaining fit indices for female of TLI .969; CFI .976 and SRMR .076. Regarding male of a TLI .971; CFI .977 and SRMR .075.

Within cross-validation, the analysis of factorial invariance is important, which showed that the structure of the instrument does not vary in samples with different characteristics. It allowed to verify the metric equivalence of the model. Finally, within the cross-validation, no statistically significant differences were obtained, although there is ev-

**Table 2. Confirmatory factor analysis of TRIG-Present.**

	Emotional Response	Non-Acceptance	Thoughts
TRIG1	.796		
TRIG2	.628		
TRIG5	.869		
TRIG7	.481		
TRIG13	.834		
TRIG3		.747	
TRIG10		.645	
TRIG12		.912	
TRIG4			.808
TRIG6			.838
TRIG8			.553
TRIG9			.763
TRIG11			.568
Emotional Response	1		
Non-Acceptance	.845	1	
Thoughts	.901	.855	1
Omega	.850	.816	.837
Fit indices			
TLI		.970	
CFI		.976	
SRMR		.064	

**Table 3. Cross-validation of TRIG-Present by gender.**

	TLI	CFI	SRMR
Female	.969	.976	.076
Male	.971	.977	.075

**Table 4. Factorial invariance of TRIG-Present by gender.**

	CFI	$\Delta$ CFI	RMSEA [CI95%]	$\Delta$ RMSEA
Configural	.982	-	.073 [.057-.089]	-
Metric	.981	.001	.072 [.056-.087]	.001
Structural	.980	.002	.074 [.058-.088]	-.001

**Table 5. TRIG-Present. Internal consistency comparing by gender.**

	Male (n = 122)	Female (n = 163)	$\chi^2$	gl	p	q
Emotional Response	.877	.839	1.640	1	.200	.145
Non-Acceptance	.808	.824	.130	1	.717	.048
Thoughts	.859	.818	1.476	1	.224	.139

idence of a tendency for female to have higher scores than male.

Regarding external validity, ASPIRES was used to analyze the external validity of TRIG-Present. The TRIG-Pre-

sent correlates directly and significantly with the two dimensions of the spirituality scale (universality and Connectivity). This result makes sense if one takes into account that people in critical situations, such as the loss of

**Table 6. Differential item functioning of TRIG-Present by gender.**

Items	M- $\chi^2$	p
Emotional Response		
TRIG1	.49	.48
TRIG2	1.22	.27
TRIG5	.37	.54
TRIG7	4.62	.03
TRIG13	.13	.72
Non-Acceptance		
TRIG3	.02	.90
TRIG6	.72	.40
TRIG8	2.68	.10
Thoughts		
TRIG4	3.71	.05
TRIG5	.55	.46
TRIG9	1.86	.17
TRIG10	.24	.62
TRIG11	2.67	.10

**Table 7. Correlations between the Texas Revised Inventory of Grief-Present (TRIG-Present) and the Scale of Spirituality and Religious Feelings (ASPIRES)**

	1	2	3	4	5	6	7	8
ER	-							
NA	0,657**	-						
T	0,674**	0,656**	-					
R	0,112	0,038	0,111	-				
RC	0,076	0,082	-0,010	-0,031	-			
RP	-0,021	0,052	-0,005	-0,588**	0,097	-		
U	0,155**	0,175**	0,086	-0,230**	0,172**	0,447**	-	
C	-0,072	-0,025	-0,119**	-0,096	0,173**	0,247**	0,193**	-

Notes: ER= Emotional Response = 1. NA= Non-Acceptance = 2. T= Thoughts =3. R= Religious Participation =4. RC= Religious Crisis =5. RP= Realization in Prayer =6. U= Universality =7. C= Connectivity =8.

\*p. < 0.05; \*\*p.<0.01

**Table 8. Dimension differences between gender.**

Gender		Emotional Response	Non-Acceptance	Thoughts
Male	M	15.07	8.36	18.50
	SD	5.43	3.54	4.81
Female	M	15.76	8.44	19.35
	SD	5.61	3.82	4.66
Levene	F	.032	1.001	.756
	p	.858	.318	.385
	t	1.050	.178	1.498
	p	.295	.859	.135
	d	.125	.022	.180

a loved one, tend to cling to spirituality as a protective resource, that is, they manage to accept the loss more as a result of an emotional bond that transcends the thought.<sup>12</sup>

Concerning the limitations of this study, it should be noted that the population that arrived for the study is only limited to the inhabitants of the Province and the Au-

tonomous City of Buenos Aires. Analyzes were based on an urban convenience sample, excluding participants in psychiatric treatment, limiting generalizability. Future studies should replicate the findings with more representative and clinical samples. The external validation was performed only with one of the variables to which grief is related, in

future studies they could use variables such as Burnout syndrome.<sup>40</sup>

However, the present study presents initial evidence that the scale provides a valid and reliable method to evaluate the TRIG-Present in the Argentinean context.

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#### CONFLICTS OF INTEREST

The authors declare they have no conflict of interest.

#### INFORMED CONSENT

It was stated that completing the form would be equivalent to giving informed consent. Participants were also informed that the data derived from this research would be used exclusively for scientific purposes in accordance with National Law 25,326 of Protection of personal data.

#### FUNDING

This research was funded by the Universidad Abierta Inter-americana

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## APÉNDIX

## Items of the Texas Revised Inventory of Grief—Present Scale

	Totalmente en desacuerdo	En desacuerdo	Ni en desacuerdo ni en acuerdo	De acuerdo	Totalmente de acuerdo
1. Todavía lloro cuando pienso en la persona que murió.	1	2	3	4	5
2. Todavía me enoja cuando pienso en la persona que murió.	1	2	3	4	5
3. No puedo aceptar la muerte esa persona.	1	2	3	4	5
4. A veces extraño mucho a la persona que murió.	1	2	3	4	5
5. Incluso ahora es doloroso recordar las memorias de la persona que murió.	1	2	3	4	5
6. Estoy preocupado con pensamientos (a menudo pienso) sobre la persona que murió.	1	2	3	4	5
7. Oculto mis lágrimas cuando pienso en la persona que murió.	1	2	3	4	5
8. Nadie ocupará el lugar de la persona que murió en mi vida.	1	2	3	4	5
9. No puedo evitar pensar en la persona que murió.	1	2	3	4	5
10. Siento que es injusto que esta persona haya muerto.	1	2	3	4	5
11. Las cosas y las personas que me rodean todavía me recuerdan a la persona que murió.	1	2	3	4	5
12. No puedo aceptar la muerte de la persona que murió.	1	2	3	4	5
13. A veces todavía siento la necesidad de llorar por la persona que murió.	1	2	3	4	5