RESEARCH ARTICLES

Analysis of the Psychometric Properties of the Brief Resilience Scale (BRS) in Peruvian University Students

Análisis de las propiedades psicométricas de la Brief Resilience Scale (BRS) en universitarios peruanos

Juan Carlos Escudero Nolasco*
Universidad Nacional Mayor de San Marcos, Lima, Peru
https://orcid.org/0000-0002-5158-7644

Génesis Carolina Bracamonte Acasiete
Universidad César Vallejo, Lima, Peru
https://orcid.org/0000-0001-8396-6131

Marycielo Canales Yauri
Universidad César Vallejo, Lima, Peru
https://orcid.org/0000-0002-7566-5360

Rosa Patricia Domínguez Bohórquez
Universidad César Vallejo, Lima, Peru
https://orcid.org/0000-0002-5502- 2587

Geraldine Janeth García Pérez
Universidad César Vallejo, Lima, Peru
https://orcid.org/0000-0002-7610-2121

*Correspondence:

Email: jescuderon@unmsm.edu.pe

Summary

This instrumental research aimed to analyze the psychometric evidences of the Brief Resilience Scale (BRS) in Peruvian university students. A total of 468 students from public and private universities participated: 62,6% were women and 37.4% were men aged 18-50 (*M=23.97, SD=6.58)*. The confirmatory factor analysis confirmed the adjustment of the oblique model (CFI=.993; TLI=.987; RMSEA=.004; SRMR=.023) and adequate reliability values were obtained (α = .79 y ω = .85). Also, the criterion validity related to the same variable was determined (r=.606) with the Brief Resilient Coping Scale (BRCS); the Life Orientation Test (LOT – R) and the Depression Anxiety Stress Scale-21 (DASS-21) were used for convergent and divergent validity (r=.617), with correlation coefficients of r=-.546 for depression, r=-.515 for anxiety, and r=-.514 for stress. Finally, the invariance was analyzed by gender, age and university of the participants, finding adequate equity values in four levels of factorial invariance. Therefore, it is concluded that the BRS is an instrument with adequate evidence of validity, reliability and equity to measure resilience in Peruvian university students.

Keywords: Resilience; Validity; Reliability; Equity; University students.

Resumen

Esta investigación de tipo instrumental tuvo como objetivo analizar las evidencias psicométricas de la Brief Resilence Scale (BRS) en universitarios peruanos. Participaron 468 estudiantes de universidades públicas y privadas, siendo 62,6% mujeres y 37.4% varones, con un rango de edad entre los 18 a 50 años *(M=23.97; DE=6.58)*. Se ratificó el ajuste del modelo oblicuo mediante el análisis factorial confirmatorio (CFI=.993; TLI=.987; RMSEA=.004; SRMR=.023) y se obtuvieron valores adecuados de confiabilidad (α =.79 y ω =.85). Además, se determinó la validez de criterio en relación con la misma variable con la Brief Resilent Coping Scale (BRCS) (r=.606); para la validez convergente y divergente se empleó el Life Orientation Test (LOT – R) (r=.617) y la Depression Anxiety Stress Scale-21 (DASS – 21) siendo los coeficientes de correlación de r=-.546 en depresión, r= -.515 en ansiedad y r= -.514 en estrés. Finalmente, se analizó la invarianza según sexo, edad y universidad de los participantes, encontrándose adecuados valores de equidad en cuatro niveles de invarianza factorial. Por lo tanto, se concluye que la BRS es un instrumento con adecuadas evidencias de validez, confiabilidad y equidad para medir la resiliencia en universitarios peruanos.

Palabras claves: Resiliencia; Validez; Confiabilidad; Equidad; Universitarios.

INTRODUCTION

In recent decades, resilience has been one of the constructs that has aroused the most interest in the clinical and educational fields, being a field of knowledge where observations, research and psychosocial practices converge, demonstrating the ability of people to resist and overcome adverse situations and to build themselves in an integral way, despite having lived through such experiences (Uriarte, 2005).

Smith et al. (2008) state that resilience is the ability to adapt and recover from stress or illness and to thrive in the face of adversity, therefore, it is understood that although individuals face unpleasant situations that generally turn into problems, a resilient person sees these difficulties as a challenge to which he or she must adapt using personal resources.

Smith et al. (2010) build on the theory proposed by Carver (1998), who suggests that there are at least four possible outcomes when a person faces adversity. The first possibility is a response in which the initial adverse effect is exacerbated and the individual eventually succumbs, another outcome is that the person survives but is diminished or impaired in some way. A third outcome is a rapid or gradual return to the level of functioning prior to facing adversity, and the last possibility is that the person does not simply return to the previous level, but can cope with it. For this author, the assessment of the possibility that a person can get better after adversity is what is referred to by the term resilience, which is the ability to recover and thrive, that is, to move to a higher level of functioning after going through a stressful event, which denotes the return to a previous state of homeostasis.

Resilience includes the ability to build appropriate interpersonal relationships, work, enjoyment, and psychological well-being in the face of inevitable problems. Therefore, Uriarte (2005) argues that being resilient means that the person has adequate mental health. Likewise, Scheier and Carver (1985) mention that resilience is related to optimism, as the latter plays a key role in adaptive coping behaviors. They also report that optimistic people behave differently than pessimistic people.

In addition, there are risk factors that affect an individual's well-being, such as anxiety, stress, and depression, which are more prevalent among university students (Gutiérrez et al., 2010). A study by Fínez and Morán (2015) shows that there is an inverse relationship between resilience and anxiety, because if a student is able to resolve the setbacks that occur throughout his or her life, he or she will be less anxious in the face of the demands that he or she may face.

Depression is considered to be a factor related to the perception of quality of life, which may be accentuated in adolescence and may persist to a greater degree in later stages, affecting the individual's functionality (Pardo et al., 2004). Therefore, resilience is considered a protective factor that allows for a better quality of life and promotes personal well-being. Likewise, it is believed that for the resilience process to occur, the person must be exposed to a level of stress that affects his or her homeostasis and through which the individual can adapt positively (Monroy & Palacios, 2011). In this regard, García et al. (2016) mention that there is an interaction between resilience and health, in this way, people with low resilience tend to have a late recovery in the

face of adversity, which predisposes the appearance of risk factors related to coping with an illness, either physical or psychological.

As a result, various resilience measurement instruments have been developed over the years, due in part to the wide range of definitions of the construct (Cantero & Alonso, 2018). Some of these instruments measure resilience directly, while others do so indirectly the various factors that make up resilience (Ortunio & Guevara, 2016). Among the most widely used instruments at the international level is the CD-RISC Scale by Connor and Davidson (2003), which even has short versions in Spanish. However, as Cantero and Alonso (2018) mentioned, while these instruments measure factors associated with resilience, they do not assess resilience as such, as they do not consider the elements of adversity and positive adaptation proposed by Luthar et al. (2000).

In this regard, Windle et al. (2011) argue that, in terms of the instruments reviewed, the Brief Resilience Scale (BRS) developed by Smith et al. (2008) assesses these elements and therefore measures resilience in its most basic sense and is considered by this author to be one of the resilience instruments with the highest quality in its measurements when compared to 19 other instruments. To the above, it should be added that, in its Spanish version translated by Rodríguez et al. (2016), it is a short and easy-to-understand instrument. Likewise, the BRS has been the subject of an analysis of its psychometric properties at the international level, with positive results. These studies include Rodriguez et al. (2016) among 620 Spanish adults, including parents of children with health problems, individuals with health problems, and the general population; Kyriazos et al. (2018) among Greek adults from the general population; Fung (2020) among 511 Chinese university students; and Peña-Contreras et al. (2020) among 648 Ecuadorian adults from the general population.

In relation to the above, an analysis of the psychometric properties of validity, reliability and fairness of the BRS in Peruvian university students should be considered as an objective, aiming to provide empirical support to the construct of resilience from the author's conception of the instrument, as a measurement that takes into account the components of adversity and positive adaptation. It will also make it possible to apply the BRS correctly and provide new psychometric evidence for using the BRS in future research.

METHOD

Type of Study

This research is of psychometric (Alarcón, 2013) and instrumental design (Ato et al., 2013) because it seeks to analyze the psychometric properties of a psychological measurement instrument.

Participants

A total of 828 students completed the form. However, 360 protocols were discarded because they met the established exclusion criteria, such as acquiescence or linear marking trend. Therefore, a

sample of 468 students was selected from public and private universities across the country. The sample was selected using a non-probability purposive sampling technique (Bologna, 2013). This sample size is considered adequate to conduct a factor analysis based on the criteria of Comrey and Lee (1992). The included participants were characterized as follows: 55.3% from universities in Lima and 44.7% from universities in other provinces of Peru. Also, 62.6% of the participants were female and 37.4% were male. The age range was 18 to 50 years *(M=23.97; DE=6.58).*

Instruments

Brief Resilience Scale (Smith et al., 2008).
It consists of six statements with Likert-type response options ranging from 1 = strongly disagree to 5 = strongly agree. The Spanish version was elaborated by Rodríguez et al. (2016), which presents two factors based on the wording of the positive and negative items. Regarding the internal consistency of the scale, it was estimated by the alpha coefficient, obtaining a value of .83.

Brief Resilient Coping Scale (Sinclair & Wallston, 2004).
It consists of four items. The participant must respond in a Likert-type format, with response options ranging from 1 = does not describe me well at all to 5 = describes me very well. The BRCS was translated into Spanish by Limonero et al. (2014) and is a unidimensional instrument that obtained a reliability of 0.69 through the alpha coefficient and a correlation coefficient of 0.71 through the test-retest method.

Life Orientation Test (Scheier & Carver, 1987).
Translated into Spanish by Otero et al. (1998). It is an instrument that assesses Optimism and Pessimism. The LOT-R consists of 10 items and has a five-point Likert scale response format ranging from 0 = strongly disagree to 4 = strongly agree. In terms of reliability, Scheier and Carver (1987) obtained an alpha coefficient of .95 and Otero et al. (1998) obtained an alpha coefficient of .78.

Depression Anxiety Stress Scale-21 DASS – 21 (Lovibond & Lovibond, 1995).
It is an instrument that assesses anxiety, depression and stress. It consists of 21 items and has four response options from 0 = it has not happened to me to 3 = it has happened to me a lot or most of the time. For this study, we used the Spanish version of Daza et al. (2002), which shows adequate internal consistency, reporting an alpha coefficient of .96 in the total scale and in its subscales, depression obtained an alpha coefficient of .93, anxiety of .86 and stress of .91.

Procedure

First, permission was requested from the author of the Spanish version of the BRS, and once permission was granted, the data was collected using the Google Forms tool and distributed through various social networks. The form included an informed consent, research objectives, an estimate of the time participants would need to complete the scales, and an indication of the voluntary nature of their participation and the confidentiality of their responses. This study complied with the code of ethics, which protected the rights and guarantees of the participants.

Data Analysis

First, Microsoft Excel 2016 program was used to clean the data according to the established criteria, then the Statistical Package for Social Sciences SPSS version 25 was used to analyze the items; also, the reliability was obtained through the alpha and omega coefficients. Finally, the free software RStudio (R Development Core Team, 2007) was used for confirmatory factor analysis (CFA) and factorial invariance analysis, which are increasingly used in research in various disciplines (Avello & Seisdedo, 2017).

The analysis of the items included their means, standard deviations, coefficients of skewness and kurtosis, corrected homogeneity indices, exploratory factor analysis (EFA) communalities, and discrimination indices by comparing extreme groups. A CFA was then performed to validate the instrument's factorial model to be used to confirm the instrument's internal structure (Medrano & Muñoz, 2017). The main objective was to compare the internal structure of the BRS with the proposed model through a review of fit indices. The weighted least squares means and variance adjusted (WLSMV) estimation method was used because the items were at an ordinal level of measurement (Brown, 2006).

In addition, an analysis of the relationship with other variables was carried out by means of criterion, convergent and divergent validity, for which the Pearson correlation coefficient was used to obtain the degree of correlation between the BRS and other variables. Finally, factorial invariance analysis was performed for four levels of invariance. The changes between each level were assessed using the Δ CFI and the Δ RMSEA.

RESULTS

Descriptive Analysis

Table 1 shows that the mean range is between 2.73 and 3.35, and the standard deviation shows values that specify that the data are not significantly different from their respective means. The values of the coefficients of skewness and kurtosis range from -1.5 to 1.5, indicating slight deviations from normality (Pérez & Medrano, 2010). In the item-test correlation, the values are above .30, with item 4 being the most discriminating. As for the communalities, the values are above .40, except for item 2, which has a value of .253. The analysis of the discrimination index shows that the six items correctly differentiate extreme groups, with $p < .05$ for all items.

Validity evidence based on internal structure

For the confirmatory factor analysis, the WLSMV estimation method was used, proving that the oblique model (M3) is the one that presents better fit indices compared to the other models presented; these indices were: CFI= .99; TLI= .98; RMSEA= .036 and SRMR= .023, as shown in Table 2.

Table 1.

Descriptive analysis of the BRS items (n=468)

Items	M	SD	g^1	g^2	CHI	h^2	DI	Acceptable
1	3.35	1.16	-.55	-.532	.62	.600	.000	Yes
2	2.73	1.04	.33	-.488	.36	.253	.000	Yes
3	3.22	1.13	-.4	-.761	.56	.514	.000	Yes
4	3.19	1.16	-.14	-.898	.64	.603	.000	Yes
5	3.09	1.11	-.33	-.767	.51	.447	.000	Yes
6	3.15	1.16	-.17	-.83	.63	.601	.000	Yes

Note: M= Mean; SD= Standard deviation; g^1= skewness; g^2= kurtosis; CHI= corrected homogeneity index; h^2= Communality; DI= Discrimination index by comparison of extreme groups.
Source. Elaborated by the author.

Table 2.

Fit indices for BRS factor structure models

Model	X^2	gl	X^2/gl	CFI	TLI	RMSEA	SRMR
M1: Unidimensional	49.787	9	5.532	.939	.898	.099	.056
M2: Orthogonal	326.563	9	36.28	.526	.209	.275	.238
M3: Oblique	684.454	15	45.63	.993	.987	.036	.023

Note: X^2= Chi-square; gl= Degrees of freedom; X^2/gl= Chi-Square / Degrees of Freedom Ratio; CFI= comparative fit index; TLI= Tucker-Lewis index; RMSEA= Root mean squared error and SRMR= Standardized response mean.
Source. Elaborated by the author.

Validity evidence in relation to other variables

Table 3 shows the correlation analysis for the criterion validity and convergence of the BRS in relation to the BRCS and the LOT-R, with Pearson correlation coefficients of .606 and .617, respectively. A direct relationship was found, meaning that the higher the level of resilience, the more optimistic the person tends to be. Similarly, criterion validity is provided between two scales measuring the resilience construct. Moreover, for the BRS and DASS-21 scales, coefficients of -.546 with depression, -.515 with anxiety, and -.514 with stress were found, indicating that there is an inversely proportional relationship between resilience and depression, anxiety, and stress.

Table 3.

Relationship between resilience, optimism, depression, anxiety and stress

		BRCS	LOT- R	
	r	.606	.617	
	p	.000	.000	
BRS		Depression	Anxiety	Stress
	r	-.546	-.515	-.514
	p	.000	.000	.000

Note: r= Pearson correlation coefficient; p= significance level
Source. Elaborated by the author.

Reliability

The reliability of the scale was assessed through internal consistency, based on Cronbach's alpha and McDonald's omega coefficients, obtaining values of .79 and .85, respectively, which are acceptable levels (Meneses et al., 2013).

Equity

The equity assessment was performed by factorial invariance, as shown in Table 4. Four levels of invariance were assessed: configural, factorial loads, intercepts and residuals, considering CFI and RMSEA fit indices and their differences between each level. To confirm the presence of invariance, the values Δ CFI <.01 and Δ RMSEA <.015 must be found (Chen, 2007; Cheung & Rensvold, 2002). The aforementioned criteria are met in the four levels of invariance assessed, in terms of gender, age and university. Therefore, as a whole, it can be affirmed that the scale is invariant according to gender, age and university, thus showing equity in its measurements.

Table 4.
BRS equity analysis

By gender	CFI	Δ CFI	RMSEA	Δ RMSEA
Configural	.988	…	.05	…
Factorial loads	.982	.006	.05	.006
Intercepts	.978	.003	.05	.001
Residuals	.971	.007	.05	.002
By age	CFI	Δ CFI	RMSEA	Δ RMSEA
Configural	.987	…	.05	…
Factorial loads	.988	.001	.04	.007
Intercepts	.984	.005	.04	.003
Residuals	.985	.001	.04	.007
By university	CFI	Δ CFI	RMSEA	Δ RMSEA
Configural	.991	…	.04	…
Factorial loads	.985	.006	.05	.006
Intercepts	.984	.001	.04	.006
Residuals	.983	.001	.04	.003

Note: Δ CFI = variation in CFI and Δ RMSEA = variation in RMSEA.
Source. Elaborated by the author.

DISCUSSION

This research aimed to analyze the psychometric properties of the Brief Resilience Scale (BRS) in a sample of Peruvian university students. This instrument is a brief scale that assesses resilience to stress in the face of adverse situations (Smith et al., 2008).

The analysis of the items was carried out, obtaining acceptable values in the homogeneity index, which indicates that the items tend to measure the same construct. As for the communalities, values >.40 were observed, indicating that the items are related (Lloret et al, 2014). However, in item 2 the communality is .25 which is considered a minimum condition

because it is less than .30 (Conway & Huffcutt, 2003). Also, the discrimination index by the extreme group comparison method is statistically significant $p<.001$, this shows that the items have the ability to differentiate greater or lesser presence of resilience. (Cohen & Swerdlik, 2002).

Subsequently, the factorial structures were compared using different models, showing that the oblique model had better fit indices compared to the unidimensional and orthogonal models. This is similar to the result found by Fung (2020), in which the two-factor model proved to have better fit indices compared to the unidimensional model. Similar results were obtained by Peña-Contreras et al. (2020). Although the BRS was originally proposed as a unidimensional scale with negative items, it should be noted that this scale was developed only on the basis of the results obtained from the analysis of the principal components. However, subsequent research using confirmatory factor analysis to confirm the factor structure suggests that the instrument has two latent factors, the first based on the positive items related to resilience and the second based on the negative items related to succumbing. Also, in the context of confirmatory factor analysis, both Rodriguez et al. (2016) and Kyriazos et al. (2018) have pointed out that although reverse item wording serves to avoid acquiescence bias, it creates an effect that contributes to the formation of two factors. It is therefore suggested that this effect be taken into account in the analysis of models relating to this instrument.

Reliability was assessed using alpha and omega coefficients and acceptable values were obtained ($\alpha=.799$, $\omega=.853$). Although it is true that one of the most widely used methods to determine reliability is through the alpha coefficient, it should be considered that this has limitations, so it is convenient to use another coefficient such as the omega coefficient (Ventura & Caycho, 2017). These results are consistent with those of the authors mentioned above.

For convergent and divergent criterion validity, the Pearson correlation coefficient was used to determine the degree of relationship between the BRS and other variables. The following instruments were used: Brief Resilient Coping Scale BRCS, Life Orientation Test LOT –R and Depression Anxiety Stress Scale-21 DASS-21. In terms of criterion validity, this occurs when instruments measure the same construct (Argibay, 2006). Therefore, a correlation was made with the BRCS, which was found to be a brief scale with adequate psychometric properties in older Peruvian adults (Caycho et al., 2018). A Pearson correlation coefficient of r =.606 was obtained, indicating a high degree of relationship (Cohen, 1988).

In terms of convergent validity, the BRS obtained positive and significant correlations with the LOT-R (Fung, 2020; Kunzler et al., 2018) (r=.617) and with the BRCS (r=.606). In contrast, regarding divergent validity, the correlations with DASSS-21 were r=-.546 for depression, r=-.515 for anxiety, and r=-.514 for stress. Kyriazos et al. (2018), in their study, correlated BRS and DASS -21 obtaining the strongest value with stress, while in this study it was with depression. In all cases, the coefficients were considered high (Cohen, 1988).

Regarding factorial invariance analysis, the results show that the structure of the two-factor correlated model is equivalent regarding gender, age, and university due to goodness of fit to the sample (*n= 468*). These results indicate that the scale and its items have the same meaning for male and female participants from different age groups and from different universities, whether public or private. Therefore, the scale items measure the latent variable in a similar way

in the different groups (Brown, 2015). In light of this, it can be affirmed that if differences are found in the scores according to the groups mentioned, they would be due to the greater or lesser presence of resilience and not to measurement bias (Domínguez, 2016). The same result regarding gender invariance was found by Peña-Contreras (2020) in Ecuadorian adults.

In conclusion, the results obtained specify that the BRS has psychometric evidence of internal structure, criterion, convergent and divergent validity, as well as internal consistency and fairness reliability, which makes it an ideal instrument for its application in Peruvian university students. However, the content validity remains to be assessed, especially in the case of item 2, for which the communality value was lower than expected. Finally, a review of the psychometric properties of the scale in different samples is recommended to provide more evidence for its use.

REFERENCES

Alarcón, R. (2013). *Métodos y diseños de investigación del comportamiento*. (2ª ed.). Ricardo Palma.

Ato, M., López, J., & Benavente, A. (2013). Un sistema de clasificación de los diseños de investigación en psicología. *Revista Anales de psicología, 29*(3), 1038-1059. https://doi.org/10.6018/analesps.29.3.178511

Argibay, J. (2006). Técnicas psicométricas Cuestiones de validez y confiabilidad. *Revista Subjetividad y Procesos Cognitivos, 8,*15-33. https://www.redalyc.org/pdf/3396/339630247002.pdf

Avello, R., & Seisdedo, A. (2017). El procesamiento estadístico con R en la investigación científica. *Revista Medisur, 15*(5), 583-586. http://www.medisur.sld.cu/index.php/medisur/article/view/3662/2397

Bologna, E. (2013). *Estadística para psicología y educación*. Brujas.

Brown, T. (2006). *Confirmatory factor analysis for applied research* (2ª ed.). The Guilford Press.

Brown, T. (2015). *Methodology in the social sciences: Confirmatory factor analysis for applied research* (2.ª ed.). The Guilford Press.

Cantero, M., & Alonso, J. (2018). Escala Breve de Resiliencia frente a los problemas de comportamiento de los hijos. *Revista Anales de psicología, 34*(3), 531-535. https://doi.org/10.6018/analesps.34.3.312601

Carver, C. (1998). Resilience and Thriving: Issues, models and linkages. *Revista Journal of Social Issues, 54*(2), 245-266. http://www.public.asu.edu/~iacmao/PGS191/resilience%20reading%20%232.pdf

Caycho, T., Ventura, J., García, C., Tomas, J., Dominguez, J., Daniel, L., & Arias, W. (2018). Evidencias psicométricas de una medida breve de resiliencia en adultos mayores peruanos no institucionalizados. *Psychosocial Intervention, 27*(2), 73-79. https://doi.org/10.5093/pi2018a6

Chen, F. (2007). Sensitivity of goodness of fit indices to lack of measurement invariance. *Structural Equation Modeling, 14*(3), 464-504. https://doi.org/10.1080/10705510701301834

Cheung, G., & Rensvold, R. (2002). Evaluating goodness-of-fit indices for testing measurement invariance. *Structural Equation Modeling, 9*(2), 233–255. https://doi.org/10.1207/S15328007SEM0902_5

Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2ª ed.). Lawrence Erlbaum.

Cohen, R., & Swerdlik, M. (2002). *Psychological testing and assessment: An introduction to tests and measurement* (7a ed.). McGraw-Hill. http://perpus.univpancasila.ac.id/repository/EBUPT181396.pdf

Comrey, A. & Lee, H. (1992). *A first course in Factor Analysis*. (2ª ed.). Lawrence Erlbaum Associates.

Connor, K., & Davidson, J. (2003). Development of a new resilience scale: The Connor-Davidson resilience scale (CD-RISC). *Depression and Anxiety, 18*(2), 76-82. https://doi.org/10.1002/da.10113

Conway, J., & Huffcutt, A. (2003). A review and evaluation of exploratory factor analysis practices in organizational research. *Organizational Research Methods, 6*(2), 147-168. https://doi.org/10.1177/1094428103251541

Daza, P., Novy, D., Stanley, M., & Averill, P. (2002). The Depression Anxiety Stress Scale-21: Spanish Translation and Validation with a Hispanic Sample. *Journal of Psychopathology and Behavioral Assessment, 24*(3), 195-205. https://doi.org/10.1023/A:1016014818163

Domínguez, L. (2016). Secretos del coeficiente alfa. *Actas urológicas españolas, 40*(7), 471. https://doi.org/10.1016/j.acuro.2016.04.002

Fínez, J., & Morán, C. (2015). La resiliencia y su relación con la salud y ansiedad en estudiantes españoles. *INFAD Revista de Psicología, 1*(1), 409-416. https://doi.org/10.17060/ijodaep.2015.n1.v1.90

Fung, S. (2020). Validity of the Brief Resilience Scale and Brief Resilient Coping Scale in a Chinese Sample. *Environmental Research and. Public Health, 17*(4), 1265. https://doi.org/10.3390/ijerph17041265

García, J., García, A., López, C., & Días, P. (2016). Conceptualización teórica de la resiliencia psicosocial y su relación con la salud. *Health and Addictions, 16*(1), 59-68. https://www.redalyc.org/pdf/839/83943611006.pdf

Gutiérrez, J., Montoya, L., Toro, B., Briñón, M., Rosas, E., & Salazar, L. (2010). Depresión en estudiantes universitarios y su asociación con el estrés académico. *Revista CES Medicina, 24*(1), 7-17. https://www.redalyc.org/pdf/2611/261119491001.pdf

Kunzler, A., Chmitorz, A., Bagusat, C., Kaluza, A., Hoffmann, I., Schafer, M., Quiring, O., Rigotti, T., Kalisch, R., Tuscher, O., & Franke, A. (2018). Construct validity and population-based norms of the german brief resilience scale (BRS). *European Journal of Health Psychology, 25*(3), 107-117. https://doi.org/10.1027/2512-8442/a000016

Kyriazos, T., Stalikas, A., Prassa, K., Galanakis, M., Yotsidi, V., & Lakioti, A. (2018) Psychometric Evidence of the Brief Resilience Scale (BRS) and Modeling Distinctiveness of Resilience from Depression and Stress. *Scientific Research, 9*(7), 1828-1857. https://doi.org/10.4236/psych.2018.97107

Limonero, J., Tomás, J., Gómez, M., Maté, J., Sinclair, V., Wallston, K., & Gómez, J. (2014). Evidence for validity of the Brief Resilient Coping Scale in a Young Spanish Sample. *The Spanish Journal of Psychology, 17*, e34. https://doi.org/10.1017/sjp.2014.35

Lloret, S., Ferreres, A., Hernández, A., & Tomás, I. (2014). El Análisis Factorial Exploratorio de los Ítems: una guía práctica, revisada y actualizada. *Anales de Psicología, 30*(3), 1151-1169. https://doi.org/10.6018/analesps.30.3.199361

Lovibond, S., & Lovibond, P. (1995). *Manual for the Depression Anxiety Stress Scales* (2ª ed.). Psychology Foundation.

Luthar, S., Cicchetti, D., & Becker, B. (2000). Researchon resilience: Response tocomentaries. *Revista Child Development, 71*(3), 573-575. https://doi.org/10.1111/1467-8624.00168

Medrano, L., & Muñoz, R. (2017). Aproximación conceptual y práctica a los modelos de ecuaciones estructurales. *Revista Digital de Investigación en Docencia Universitaria, 11*(1), 219-239. https://doi.org/10.19083/ridu.11.486

Meneses, J., Barrios, M., Bonillo, A., Cosculluela, A., Lozano, L., Turbany, J. & Valero, S. (2013). *Psicometría*. UOC.

Monroy, B., & Palacios, L. (2011). Resiliencia: ¿Es posible medirla e influir en ella? *Salud Mental, 34*(3), 237-246. https://www.redalyc.org/pdf/582/58220785008.pdf

Ortunio, M., & Guevara, H. (2016). Aproximación teórica al constructo resiliencia. *Revista Comunidad y Salud, 14*(2), 96-105. http://ve.scielo.org/pdf/cs/v14n2/art12.pdf

Otero, J., Luengo, A., Romero, E., Gómez, J., & Castro, C. (1998). *Psicología de personalidad. Manual de prácticas*. Ariel Practicum.

Pardo, G., Sandoval, A., & Umbarila, D. (2004). Adolescencia y depresión. *Revista Colombiana de Psicología, 13,* 17-32. https://www.redalyc.org/pdf/804/80401303.pdf

Peña-Contreras, E., Lima-Castro, S., Arias-Medina, P., Bueno-Pacheco, A., Aguilar-Sizer, M., & Cabrera-Vélez, M. (2020). Propiedades psicométricas de la Escala Breve de Resiliencia

(BRS) en el contexto ecuatoriano. *Evaluar*, *20*(3), 83-98. https://doi.org/10.35670/1667-4545.v20.n3.31715

Pérez, E., & Medrano, L. (2010). Análisis factorial exploratorio: bases conceptuales y metodológicas. *Revista Argentina de Ciencias del Comportamiento (RACC)*, *2*(1), 58-66. https://doi.org/10.32348/1852.4206.v2.n1.15924

R Development Core Team (2007). *R: a language and environment for statistical compu-ting. R Foundation for Statistical Computing, Vienna*. http://www.R-project.org

Rodríguez, R., Alonso, J., & Hernansaiz, H. (2016). Reliability and Validity of the Brief Resilience Scale (BRS) Spanish Version. *Psychological Assessment, 28*(5), 101-110. https://doi.org/10.1037/pas0000191

Scheier, M., & Carver, C. (1985). Optimism, Coping, and Health: Assessment and Implications of Generalized Outcome Expectancies. *Health Psychology, 4*(3), 219-247. https://doi.org/10.1037/0278-6133.4.3.219

Scheier, M., & Carver, C. (1987). Dispositional Optimism and Physical Well-Being: The Influence of Generalized Outcome Expectancies on Health. *Journal of Personality, 55*(2), 169-210. https://doi.org/10.1111/j.1467-6494.1987.tb00434.x

Sinclair, V., & Wallston, K. (2004). The development and Psychometric evaluation of the Brief Resilient Coping Scale. *Assessment, 11*(1), 94-101. https://doi.org/10.1177/1073191103258144

Smith, B., Dalen, J., Wiggins, K., Tooley, E., Cristóbal, P., & Bernardo, J. (2008). The brief resilience scale: assessing the ability to bounce back. *International journal of behavioral medicine, 15*(3), 194-200. https://doi.org/10.1080/10705500802222972

Smith, B., Tooley, E., Christopher, P., & Kay, V. (2010). Resilience as the ability to bounce back from stress: A neglected personal resource. *The Journal of Positive Psychology, 5*(3), 166–176. https://doi.org/10.1080/17439760.2010.482186

Uriarte, J. (2005). La resiliencia. Una nueva perspectiva en psicopatología del desarrollo. *Revista de Psicodidáctica, 10*(2), 61-79. https://www.redalyc.or g/pdf/175/17510206.pdf

Ventura, J., & Caycho, T. (2017). El coeficiente Omega: Un método alternativo para la estimación de la confiabilidad. *Revista Latinoamericana de Ciencias Sociales, Niñez y Juventud, 15*(1), 625 - 627. https://www.redalyc.org/pdf/773/77349627039.pdf

Windle, G., Bennett, K., & Noyes, J. (2011). A methodological review of resilience measurement scales. *Health and Quality of Life Outcomes, 9*(8), 1-18. https://doi.org/10.1186/1477-7525-9-8