Letter to the Editor

Review of the COVID-19 Pandemic-related Perceived Stress Scale (PSS–10–C)

Revisión de la Escala de Estrés Percibido (EEP-10-C) relacionado con la pandemia de COVID-19

To the Editor,

The COVID-19 Pandemic-Related Stress Scale (PSS-10-C) was presented amidst the worldwide coronavirus disease (COVID-19) outbreak. The PSS-10-C is an adaptation of the famous Scale of Perceived Stress (PSS-10). The instrument’s relevance is evidenced by several citations of using the PSS-C-10 in the world context. The PSS-10-C presented a one-dimensional structure, without a confirmatory analysis factorial, and high internal consistency; however, the need to make adjustments in PSS-10-C was noted.

Since perspective focused on the writing of the items, a review of the PSS-10-C suggested that the Spanish item 6 (‘I have felt unable to face the things I have to do to control the possible infection’) could partly explain that the factorial solution was not wholly satisfactory in explaining less than 50% of the variance. Furthermore, item 6 was scored directly and was preceded and followed by two items scored inversely. Often, these details can have a significant impact on the performance of the measurement scales.

A sample of 1136 students from all majors of a Colombian university participated. Participants include ages between 18 and 29 years (mean, 22 ± 3), currently called emerging adults. 66% of the sample was female, and 79% of residents in low-income areas were included. Students completed online an adjusted version of the PSS-10-C that only has a modification (in italics) in Spanish item 6 to which the wording was adjusted (‘I have felt able to face the things that I have to do to control a possible infection’), and the meaning of the qualification was changed from direct to reverse. Items 1, 2, 3, 9, and 10 were scored directly from 0 to 4, and items 4, 5, 6, 7, and 8 were reversed from 4 to 0. Exploratory factor analysis (EFA) and confirmatory (CFA) were performed. Besides, Cronbach’s alpha was calculated as an indicator of internal consistency. The analysis was performed using IBM-SPSS version 23. This study was approved by an institutional research ethics committee (Act 002 of an ordinary meeting, March 26th, 2020).

In the EFA, the coefficient was KMO = .86, and Bartlett’s test showed χ² = 3.985.3, df = 54 and P < .001. Two factors were retained, factor 1 (‘distress’) {items 1, 2, 3, 9, and 10}, which showed an Eigenvalue of 4.24 that explained 42.4% of the variance and factor 2 (‘coping’) {items 4, 5, 6, 7 and 8} that presented Eigenvalue of 1.42 responsible for 14.2% of the variance. The correlation between the factors was .55. The CFA showed the goodness-of-fit indexes the two-dimensional model of the PSS-10-C (χ² = 295.6; df = 34; P < .001; χ²/df = 8.7; RMSEA = .08; 90%CI, 0.07-0.09; CFI = .93; TLI = .91; SRMR = .05). The global PSS-10-C showed Cronbach’s α=.85, factor 1 =.83, and factor 2 =.77.

A slight modification in the writing and way of rating an item can produce a significant change in an instrument’s psychometric performance, such as disqualifying adjectives, negative sentences, or other strategies that can change the rating sense of items. The two-dimensional solution for the PSS-10-C is not novel; it has been previously reported for the PSS-10. The 2 factors retained more than 50% of the variance, as is usually recommended, and indicators of goodness-of-fit are good. Also, this version of the PSS-C-10, with the adjustment of item 6, showed high internal consistency (85), as the previous version (.86).

In conclusion, the PSS-10-C is a valid and reliable tool among emerging adult students from a Colombian university. These indicators need to be corroborated in future research.

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References


Adalberto Campo-Arias a,b, John Carlos Pedrozo-Pupo a, Edwin Herazo b

a Programa de Medicina, Facultad de Ciencias de la Salud, Universidad del Magdalena, Santa Marta, Colombia
b Instituto de Investigación del Comportamiento Humano, Bogotá, Colombia

* Corresponding author.
E-mail address: acampo@unimagdalena.edu.co

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