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Acute stress and fear scales during the COVID-19 pandemic: development and evaluation in a Costa Rican sample

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Escalas de estrés agudo y temores durante la pandemia por COVID-19: desarrollo y evaluación en una muestra costarricense

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Abstract: **Objective:** In the context of the pandemic due to SARS-CoV-2, concerns were raised about how to adequately assess its impact on the wellbeing of the population. The main reason of this paper is to present the preliminary results of psychometric properties of measures created to evaluate such impact. **Method**: We created and adapted several assessment instruments, and validated them with a volunteer sample of 699 adults (+18), inhabitants of Costa Rica, who filled out an online questionnaire on mental health consequences of the pandemic during September 2020. **Results**: The results provided evidence of validity and reliability for the new scales developed. Also, they show a negative correlation between resilient coping and acute stress, which could be considered evidence of discriminant validity. **Conclusion**: In this order, the measures showed acceptable psychometric properties with the evaluated sample. Future research is needed to gather more evidence of reliability and validity in probabilistic samples.

Keywords: Acute stress, psychological assessment, COVID-19, reliability, validity

Resumen: Objetivo: En el contexto de la pandemia por SARS-CoV-2, surgieron preocupaciones sobre cómo evaluar adecuadamente su impacto en el bienestar de la población. El motivo principal de este artículo es presentar los resultados preliminares de las propiedades psicométricas de las medidas creadas para evaluar dicho impacto. **Método**: Creamos y adaptamos varios instrumentos de evaluación, y los validamos con una muestra de 699 adultos (+18), habitantes de Costa Rica, que voluntariamente decidieron llenar un cuestionario en línea sobre las consecuencias de la pandemia en la salud mental durante septiembre de 2020. Este estudio se considera de tipo cuantitativo. **Resultados**: Los resultados proporcionaron evidencia de validez y confiabilidad para las nuevas escalas desarrolladas. Además, se muestran una correlación negativa entre el afrontamiento resiliente y el estrés agudo, lo que podría considerarse evidencia de validez discriminante. **Conclusiones**: En este orden, los instrumentos muestran propiedades psicométricas aceptables para la muestra evaluada. Se necesitan investigaciones futuras para recopilar más evidencia de confiabilidad y validez en muestras probabilísticas.

Palabras clave: Estrés agudo, evaluación psicológica, COVID-19, validez, confiabilidad.

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1. Introduction

With the arrival of the COVID-19 pandemic, and its sanitary and societal consequences, concerns have arisen about how to adequately measure its impact on mental health (Caycho-Rodríguez et al., 2022; Marín et al., 2020; Ransing et al., 2020; Scoppetta et al., 2022; Voitsidis et al., 2021). Acute stress has been considered as one of the most common psychological reaction to challenging or threatening events and to dramatic and significant changes in people's daily lives (Adler et al., 2020). It may have several consequences on health (Garfin et al., 2018) and is, along with anxiety and fear, one of the psychological reactions which is attracting interest from researchers focused on mental health assessment during the pandemic (Voitsidis et al., 2021). Fear has also been recognized as a relevant psychological reaction to be assessed, since it may have implications for health and wellbeing on a population scale (Hossain et al., 2020; Murphy et al., 2021; Scoppetta et al., 2022).

Understandably, at the beginning of the COVID-19 pandemic, Ransing et al., (2020) identified a lack of measures specific to identify COVID-19 related mental health problems. As they mentioned, the use of traditional assessment tools (e. g. PHQ-9, GAD-7) may lead to misestimating the impact on mental health of the pandemic. Therefore, efforts were needed to develop and test pandemic-specific psychological measures.

A group of researchers and mental health professionals in Costa Rica, aware of the need to assess mental health during the sanitary emergency, met to develop measures relevant to Costa Rica's adult inhabitants as they were facing the pandemic. The present manuscript reports on the psychometric evaluation of the new measures developed.

2. Theoretical reference

2.1 Acute stress during a pandemic

Acute Stress Reaction (ASR) is a psychological reaction in the presence of a challenging or threatening event (Adler et al., 2020). It is defined by polymorphic and unstable anxiety symptoms, which usually appear immediately, within minutes of a catastrophic event and are accompanied by noticeable autonomic arousal, resulting in cognitive and somatic disruptions (World Health Organization, 1992).

These symptoms may include panic attacks, depersonalization or derealization, psychophysiological symptoms such as tension headaches, various gastrointestinal problems, tremors, sleep problems, cardiovascular variations such as increases in blood pressure, excessive worry about getting sick or dying (or what will happen to a loved one), a feeling of hyperarousal and hypervigilance, among others. This reaction usually resolves within hours or days (Svetlitzky et al., 2020).

On the other hand, Acute Stress Disorder (ASD) is a slightly different diagnostic category, included in the Diagnostic and Statistical Manual for Mental Disorders, 5th Edition (American Psychiatric

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Association, 2013). Unlike ASR, which can be diagnosed immediately at the scene based on observation of behavior, the ASD diagnosis requires clinical assessment at least three days following the event. Symptoms of ASD include a persistent clinical picture characterized by intrusion, avoidance, arousal, negative mood, and dissociation. Unlike ASR too, ASD is considered a mental health disorder and includes criteria of significant impairment in everyday functioning.

The American Psychiatric Association (2013) also proposes what is deemed as a related disorder: Post-Traumatic Stress Disorder (PTSD). According to the DSM-5 (APA, 2013), PTSD is a psychiatric condition associated with four clusters of symptoms (i.e., intrusion, avoidance, negative alterations in cognitions and mood, and hyper-arousal) that last at least 30 days. Taken together, there appears to be a time continuum such that ASR can occur in the immediate context of the event, ASD can occur in the first few days or weeks after the event, and PTSD can occur after the first month (Svetlitzky et al., 2020).

The challenging or threatening events that may lead to acute stress can be of diverse nature, such as wars, economic collapses, and health emergencies (Boehm-Tabib, 2016; Hauksdóttir et al., 2013; Naumann et al., 2017). The coronavirus pandemic goes beyond a merely biomedical event. It has had a health dimension, evidenced in fatality rates and disabilities (Smith, 2022), among other health outcomes, but it also has a socioeconomic dimension, evidenced in unemployment and job loss (Demena et al., 2022), among others. These health and socioeconomic outcomes may, subsequently, have psychological effects as well. Nevertheless, individuals are not condemned to passively suffer from the pandemic: they may cope with it resiliently. Resilient coping has been understood as a way of confronting adversity to rebound from and positively adapt to significant stressors (Sinclair & Wallston, 2004). Thus, a negative association can be expected between acute stress and resilient coping.

2.2 Pandemic-related fears

Fear states have been considered adaptive, since they promote problem solving and adaptation to danger (Rosen & Schulkin, 2004). However, these states may become overloaded and exceed individual abilities to adapt, leading to psychopathology (Rosen & Schulkin, 2004). Fear has been related to specific disorders, such as PTSD and other stress disorders, anxiety and mood disorders, among others (Carleton et al., 2011; Gonzalez & Martinez, 2014; Shin & Liberzon, 2010).

As previously mentioned, in the case of the coronavirus pandemic, there are several challenges or threats: on one hand, there are health risks, for you and significant others; on another hand, there are economic risks and outcomes of the pandemic. Therefore, when assessing fear that may result from the pandemic, both kinds of threatening events that may lead to fear should be considered: treats of negative health consequences of the pandemic and treats of negative economic consequences of the pandemic.

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3. Methodology

3.1 Approach

An observational cross-sectional study was carried out with the aim of developing measures on pandemic-related acute stress and fears. It was also aimed to test validity and reliability of these measures in a sample of Costa Rica's inhabitants. As likely evidence of construct validity, we hypothesized a negative association between resilient coping and these new measures on pandemic-related acute stress and fear, as well as a positive association between acute stress and fear. This study was part of wider research on the impact of the pandemic on mental in Costa Rica, whose results are expected to be reported somewhere else.

3.2 Study population

Participants were 699 adults (18 years or older), inhabitants of Costa Rica, who voluntarily decided to fill out an online questionnaire on mental health consequences of the pandemic.

3.3. Collection techniques

This questionnaire was advertised in a social network (Facebook). Each participant was presented first an informed consent form and expressed agreement before having access to the questionnaire. This study was approved by the Ethics Committee of the University of Costa Rica (reference number: CEC-470-2020).

Concerning the new scales tested in this study, they were developed as follows. A group of mental health professionals (psychologists, psychiatrists, and other mental health researchers) initially elaborated a set of items on 1) *pandemic-related acute stress* and a set of items on 2) *pandemic-related fears*. The items were elaborated considering what was deemed as contextually relevant for adult inhabitants of Costa Rica by these mental health professionals. Further details on these scales, and its development, is provided in the next paragraphs.

The study questionnaire included several scales. Two of these scales were new, to address specificities of the psychological reaction to the pandemic, and one of these scales was taken from previous literature and research. This last scale, on resilient coping, was included in order to allow testing of construct validity, by its correlations to the new scales.

***Pandemic-related Acute Stress Scale* (PASS)**. As mentioned, a set of items were elaborated by mental health professionals. They were focused on acute stress symptoms and was assumed to be one-dimensional. These items were introduced by a stem ("*Since the COVID-19 Pandemic emergency began, have you presented any of the following symptoms?*"), which was followed by 8 items, on different symptoms (e. g.: "*Feeling restless, such as a feeling of not being able to sit still or wanting to run away*"). Response options used a 5-point Likert format, from (1) "*almost never*" to (5) "*almost*

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always". The complete set of 8 items, in its original Spanish language, and a free translation into English, is presented in Annex A, Table 3.

Alternatively, mental health professionals also developed and selected a different set of items, conceptualizing the acute stress as bidimensional (cognitive stress and physiological stress). We also tested them. Results on this are reported in Annex B.

Pandemic-related Fear Scale **(PFS)**. A set of items was elaborated by mental health professionals, including what they deemed as two clusters of concerns related to the COVID-19 Pandemic: (1) concerns on health and (2) economic consequences of the pandemic. Items were introduced by a question ("*To what extent do you experience the following fears in the current health emergency?*"). There were 4 items focused on health-related fear (e. g.: "*become infected and sick from COVID-19*"). There were 2 items focused on economy-related fear (e. g.: "*Facing material or economic losses*"). Response options used a 5-point Likert format, from (1) "*totally disagree*" to (5) "*totally agree*". The complete set of 8 items, in its original Spanish language, and a free translation into English, is presented in Appendix A, Table 4.

Brief Resilient Coping Scale **(BRCS)**. This scale was originally developed and evaluated by Sinclair & Wallston (2004), where evidence of internal consistency (α = .69) and test-retest reliability (r = .71) was reported, as well as evidence of validity. In diverse cultural contexts and languages, including Spanish, this scale has been reported to be one-dimensional (Cosco et al., 2016; Kocalevent et al., 2017; Limonero et al., 2014; Tomás et al., 2012). It consists of 4 items, such as "*I look for creative ways to alter difficult situations*", with a Likert 5-point response format, from (1) "*does not describe me at all*" to (5) "*describes me very well*". In this study reliability was α = .79 in the exploratory subsample and α = .89 in the confirmatory subsample.

Sociodemographic variables. Information on several sociodemographic variables was also collected, such as age, gender, citizenship, family income, education, and province of residence.

3.4 Analysis processing

About half of the sample (N = 347) was randomly selected to conduct, with this first subsample, exploratory factor analysis (estimation method: Maximum Likelihood). Data from the second half of the sample (N = 352) was then analyzed by confirmatory factor analyses (estimation method: Maximum Likelihood). In other to assess fit acceptability, a set of indices and their corresponding cutoff values were chosen, based on previous recommendations (Cangur & Ercan, 2015; Hu & Bentler, 1999). These indices and values were the following: the ratio χ^2/df, where values close to 3 are considered acceptable (Cangur & Ercan, 2015); the Comparative Fit Index (CFI), a measure of incremental fit, where values of .90 have been traditionally used as a cutoff, although more recently, values close to .95 are preferred (Cangur & Ercan, 2015; Hooper et al., 2008; Hu & Bentler, 1999); and the Root Mean Square Error of Approximation (RMSEA), a measure of absolute fit, where values

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of .06 or lower are deemed as ideal (Hu & Bentler, 1999), although lower than .08 are still acceptable (Cangur & Ercan, 2015).

Reliability analyses were also conducted, for each scale and subscale. A Cronbach's Alpha (α) ≥ .70 was considered acceptable (Cortina, 1993).

Finally, to test for evidence of construct validity, correlations of these new scales with resilient coping were also computed. As mentioned in the introductory section, there is a theoretical rationale to expect negative associations between resilient coping and both, acute stress and pandemic-related fear. A positive association between acute stress symptoms and fears was also expected.

4. Results

4.1 Sample descriptive statistics

Overall, the sample (N = 699) consisted of 74.1 % women (25.6 % were men, 0.1 % non-binary), with a mean age of 36.05 y. o. (S. D. = 13.31, Q_1 = 25, Q_2 = 34; Q_3 = 44). Most were Costa Ricans (96.6 %). Most participants (55.7 %) reported a monthly family income ≤ ₡ 1000000 (approx. $ 1577). Most reported to have an educational level of either uncomplete or complete college degree (81.2 %). The province of residence that contributed the most participants to the study was San José (40.8 %), where the capital, San José city, is located. Since both subsamples (N = 347 and N = 352) were generated randomly, there were no differences between them in terms of sociodemographic composition (p > 0.5).

4.2 Validity and reliability

PASS. The results from the first subsample, based on an EFA for the scale on acute stress during the pandemic, suggested it to be one-dimensional: only one factor had an eigenvalue < 1. This factor explained 49.09 % of variance. Reliability of the PASS in this subsample was α = .85, and can, then, be considered acceptable. All item-total corrected correlations were between r = .47 and r = .67, what is considered excellent (Qin, 2006), and provides further evidence of internal consistency.

Results based on a CFA from the second subsample also supported a one-dimensional model, where an acceptable fit was found: χ^2/df = 2.72, CFI = .96, RMSEA = .070, 90 % CI [.048; .093]. Reliability in this subsample was α = .86, what is deemed as acceptable.

Table 1 summarizes information on item means and factor loadings from both subsamples and factor analyses. No loading was found to be β ≤ .50.

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Table 1
Descriptive statistics and factor loadings of ths PASS items

Item	Mean (S.D.)	Loading (β)	Mean (S.D.)	Loading (β)
	First subsample (EFA, N = 347)		Second subsample (CFA, N = 352)	
1. Fear	2.67 (1.20)	.66	2.76 (1.24)	.68
2. Uncontrollable urge to cry	2.35 (1.31)	.75	2.37 (1.29)	.72
3. Feeling that you were going to die or that you were going to lose control of yourself	1.82 (1.16)	.75	1.90 (1.19)	.69
4. Headaches, migraines, back pain, or any pain from muscle tension	3.07 (1.33)	.59	3.15 (1.30)	.61
5. Feeling restless, such as a feeling of not being able to sit still or wanting to run away	2.46 (1.28)	.73	2.77 (1.35)	.79
6. High blood pressure, palpitations, sweaty but cold hands, shortness of breath or "tight" chest	1.72 (1.07)	.56	1.83 (1.14)	.63
7. Trouble falling asleep, staying asleep, or waking up earlier than you should	2.95 (1.35)	.58	3.09 (1.35)	.59
8. Sensation of "not being in your own body"	1.48 (0.99)	.52	1.66 (1.12)	.60

Note. In the EFA: KMO = .872, Bartlett test = 944.52 (p < .001).

Concerning construct validity of the PASS, a correlation of r = -.36 (p < .001) was found between this new acute stress measure and the BRCS in the first sample, and a correlation of r = -.39 (p < .001) was found in the second sample. These correlations support what was hypothesized based on theoretical grounds.

PFS. For the new scale on pandemic-related fears, results from the first subsample, based on an EFA suggested a bidimensional solution: two factors had eigenvalues > 1. The first eigenvalue explained 55.87 % of variance, while the second one explained 17.41 % of variance. Cumulatively, both factors explained 73.29 % of variance. The correlation between these factors was r = .47 (p < .001). Reliability of the health-related fear subscale was α = .85. Reliability of the economy-related fear subscale was α = .75 (rSB = .75). Reliability of these subscales was then considered acceptable. Item-total correlations in the health subscale were between r = .67 and r = .72. In the economic subscale these correlations were r = .59. This is considered excellent (Qin, 2006), and provides further evidence of internal consistency.

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Results based on a CFA from the second subsample did not completely support the bidimensional model suggested previously by the EFA. Its fit indices were as follows: χ^2/df = 4.43, CFI = .96, RMSEA = .099, 90 % CI [.067; .133]. As seen, although relative fit (CFI) was acceptable, both, the χ^2/df ratio and absolute fit (RMSEA) did not reach cut-off levels recommended in the literature (Cangur & Ercan, 2015; Hu & Bentler, 1999).

Modification indices suggested that, within the subscale on health-related fear there were items with correlated residuals, and two likely subdimensions: fear concerning health of significant others (items 1 & 2, MI = 10.760) and fear concerning health of your-self (items 3 & 4, MI = 12.573). Therefore, this model was specified so that the economic subscale remained the same (two items with one first-order factor), but the health subscale was modified so that there were two first other factors (fear related to self-heath and fear related to other's-health), and one second-order factor (overall health-related fear).

The fit of this modified model was found acceptable: χ^2/df = 1.77, CFI = .99, RMSEA = .047, 90 % CI [.000; .089]. The correlation between the economic fear factor and the overall health fear factor was r = .43 (p < .001). The correlation between both health-related fear subscales was r = .61 (p = < .001). These correlations were not large enough as to suggest important overlap between variables (Tabachnick & Fidell, 2014). Reliability in this subsample was α = .81 for overall health fear (other's health fear, α = .77, rSB = .77; self-health fear, α = .71, rSB = .71). For economic fear, reliability was α = .79, rSB =.80. Thus, internal consistency of these subscales can be deemed acceptable.

Table 2 summarizes information on item means and factor loadings from both subsamples and factor analyses. No loading was $\beta \leq .65$.

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Table 2

Descriptive statistics and fator loadings of the PFS items

Item	Mean (S.D.)	Loading (β)	Mean (S.D.)	Loading (β)
	First subsample (EFA, N = 347)		Second subsample (CFA, N = 352)	
Health-related fear dimension				
			Other's health subdimension	
1. Losing a loved one	3.35 (1.22)	.73	3.21 (1.23)	.82
2. Fear of infecting loved ones	3.79 (1.18)	.69	3.57 (1.27)	.78
			Self-health subdimension	
3. Getting infected and sick from COVID-19	3.20 (1.28)	.77	3.10 (1.25)	.81
4. Fear of dying	2.48 (1.40)	.73	2.41 (1.35)	.68
Economic fear dimension				
5. Facing material or economic losses	3.06 (1.26)	.67	3.10 (1.27)	.80
6. Fear of economic consequences in the local situation	3.72 (1.20)	.81	3.68 (1.11)	.83

Note. In the EFA: KMO = .810, Bartlett test = 860.98 ($p < .001$), items presented a clear one-dimensional pattern (there was a difference in loadings of, at least, .20 between factors). In the CFA, the loadings of the second-order factor (overall health fear) on first-order factors were $\beta = .90$ (Other´s health) and $\beta = .91$ (Self-health).

Concerning construct validity of the PFS, in the first subsample a correlation of $r = -.21$ ($p < .001$) was found between economy-related fear and the BRCS, as well as a correlation of $r = -.24$ ($p < .001$) between health-related fear and the BRCS. In the second subsample a correlation of $r = -.10$ ($p < .05$) between economic fear and the BRCS, as well as a correlation of $r = -.21$ ($p < .001$) between health-related fear and the BRCS.

Additionally, in the first subsample the correlation between economic fear and the PASS was $r = .43$ ($p < .001$), and the correlation between health-related fear and the PASS was .56 ($p < .001$). In the second subsample, the correlation between economic fear and the PASS was $r = .38$ ($p < .001$), and the correlation between health-related fear and the PASS was $r = .62$ ($p < .001$). These correlations provide additional evidence of construct validity for both, the PASS and the PFS.

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5. Conclusions

Overall, results provided evidence of validity and reliability for the new scales developed. For the measure on acute stress, the PASS, findings suggested it is one dimensional, with acceptable levels of internal consistency. Moreover, given its positive association with fear and its negative association with resilient coping, there is evidence of construct validity for this scale. Results were consistent across subsamples, what constitutes further support to its validity and reliability.

For the measure on fear, the PFS, in the first subsample and from an exploratory approach, results suggested it is two-dimensional, with one subscale on health-related fear and another on economic fear, with acceptable internal consistency within subscales. However, when examined further in a second subsample, and with a confirmatory approach, additional subdimensions emerged from the subscale on health-related fear: fear on self-health and fear on other's health.   Internal consistency was also found acceptable in the second subsample. Additionally, the negative association between resilient coping and fear subscales, as well as the positive associations of these subscales with acute stress provided, overall, evidence of construct validity. Correlations between subscales did not suggest dimensions overlap.

These results need to be discussed in relation to current literature. Certainly since this study was first proposed and carried out a wide amount of manuscripts on COVID-19-related psychological measures has been published. Voitsidis et al. (2021) identified and reviewed a set of scales developed to measure anxiety, fear, and stress associated to COVID-19. For instance, they mentioned the Fear of COVID-19 Scale, developed originally in Farsi by Ahorsu et al. (2020) from a sample of Iranian adults, which has been translated and tested in Spanish recently (Scoppetta et al., 2022). It has been reported as one-dimensional (Ahorsu et al., 2020), and its items seem to be generic in terms of content ("It makes me uncomfortable to think about coronavirus-19"), or be focused on health consequences of the coronavirus ("I am afraid of losing my life because of coronavirus-19"), leaving uncovered the economic dimension of the pandemic. Our measure on pandemic-related fear does not only cover economic concerns, but also fear because of health-consequences on significant others.

The COVID Stress Scales (CSS), developed by Taylor et al. (2020) from a sample of Canadian adults were also among the set of scales identified by Voitsidis et al. (2021) to measure anxiety, fear, and stress associated to COVID-19. It has been reported as five-dimensional and, despite its name, covers more than just stress: 1) danger and contamination fears ("I am worried about catching the virus"), 2) fears about the economic consequences of COVID ("I am worried about grocery stores running out of food"), 3) COVID xenophobia ("I am worried that foreigners are spreading the virus in my country"), 4) COVID compulsive checking and reassurance seeking ("During the past seven days, how much have you checked the following... ...YouTube videos about COVID-19"), and 5) COVID traumatic stress symptoms ("I had trouble concentrating because I kept thinking about the virus"). At a first sight there seems to be some content overlap between this scale and our fear and acute stress new scales: the CSS has two subscales on fear, one related to health consequences on yourself, and

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another on economic consequences, which is apparently similar to the PFS' subscales; moreover, the CSS has a subscale on traumatic stress, which may share some variance with the PASS. However, this apparent overlap needs to be empirically tested, and the conceptualizations and domains covered by the PFS and the PASS are slightly different than what the CSS covers.

This study had some limitations, which must be also mentioned. This study used a convenience, non-probabilistic sample, whose results cannot be generalized, and should not be extrapolated to different groups. Moreover, although a previously validated measure was used to examine evidence of construct validity for the new measures, effects of social desirability were not controlled for. Additionally, there was no comparison of the scales' scores and clinical diagnostic criteria. The PASS, in particular, does not distinguish between Acute Stress Reaction and Acute Stress Disorder. We preferred to address general acute stress symptoms, but future research may try to address specific clinic diagnostics, and even modify the scale to improve its specificity. Moreover, this study did not control for effects of stress disorders existing before to the pandemic which might be confounded and explain to a certain degree pandemic specific reactions. In case of a future pandemic, these effects should be controlled for, for instance, by comparing responses of previously diagnosed and non-diagnosed participants.

Despite its limitations, these scales were developed to address a list of symptoms that clinicians and mental health professionals considered relevant among adults in Costa Rica, and may be helpful to address the mental health impact on this population. Additionally, the new measures were validated, among others, through their association with a previously existing and validated scale (the BRCS), what contributes to, and is part of, the soundness of evidence provided in this study.

Future research could examine the association of the PASS and the PFS with recently created measures to address a variety of COVID-19-related psychological constructs. That might provide further evidence of validity and also shed some light on the specific content dominions covered. Moreover, studies with a sample of previously diagnosed participants may provide further and better evidence of validity. Future research may also test psychometric properties in populations with diverse cultural backgrounds. All in all, these scales may be used to evaluate psychological consequences of the COVID-19 pandemic and, with some adaptation, to evaluate consequences of other sanitary emergencies.

6. Acknowledgements

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8. Annexes

Annex A: Original Spanish items, and English translations of the PASS and the PFS

Table 3

PASS Items

Item number	Item wording
1	Miedo (*Fear*)
2	Ganas incontrolables de llorar (*Uncontrollable urge to cry*)
3	Sensación de que se iba a morir o que iba a perder el control de usted mismo (*Feeling that you were going to die or that you were going to lose control of yourself*)
4	Dolores de cabeza, migrañas, dolor de espalda, o cualquier dolor producto de tensión muscular (*Headaches, migraines, back pain, or any pain from muscle tension*)
5	Sentir inquietud, como una sensación de no poder estar quieto o ganas de salir corriendo (*Feeling restless, such as a feeling of not being able to sit still or wanting to run away*)
6	Presión alta, palpitaciones, las manos sudorosas pero frías, dificultad para respirar o el pecho "apretado". (*High blood pressure, palpitations, sweaty but cold hands, shortness of breath or "tight" chest*)
7	Problemas para conciliar el sueño, para mantenerse dormido o despertarse antes de lo que debería. (*Trouble falling asleep, staying asleep, or waking up earlier than you should*)
8	Sensación de "no estar en su propio cuerpo". (*Sensation of "not being in your own body"*)

Note. English translations of each item are presented between parentheses.

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Table 4

PFS Items

Item number	Item wording
1	Perder un ser querido
	(*Losing a loved one*)
2	Miedo a contagiar a sus seres queridos
	(*Fear of infecting loved ones*)
3	Infectarse y enfermar por COVID-19
	(*Getting infected and sick from COVID-19*)
4	Miedo a morir
	(*Fear of dying*)
5	Enfrentar pérdidas materiales o económicas
	(*Facing material or economic losses*)
6	Temor a las consecuencias económicas en la situación local
	(*Fear of economic consequences in the local situation*)

Note. English translations of each item are presented between parentheses.

Annex B: Alternative acute-stress scale

In a sample of N = 358, using a confirmatory factor analysis, two alternative models were defined, one one-dimensional and the other two-dimensional, based on the a priori categorizations of a team of psychology researchers on the dimensionality of the items. The aim was to compare which of the two models, one-dimensional or two-dimensional, fitted the data better. This was done following methodological considerations outlined by Kline (2011). For this, nested models were specified: in model 1, without constraints, two factors were specified, one on physiological symptoms of acute stress, which were specified to load on a set of four items, and another on cognitive symptoms of acute stress, which were specified to load on a set of three items. In model 2, constraints were set on model 1 in such a way that the variances of the two factors and the covariance between them were constraint to be equal. This specifies that all items are indicators of a single factor (one-dimensional model). The fit of both models was compared using the chi square difference test. The two-dimensional model obtained an "acceptable" fit: $\chi 2/df$ = 1.67, CFI = .99, RMSEA = .043, 90% CI [.000; .074]. For the physiological symptoms dimension, the loads were between β = .64 and .80; for the dimension of cognitive symptoms, the loads were between β = .57 and .79. For the one-dimensional model, the fit was not acceptable: $\chi 2/df$ = 5.86, CFI = .90, RMSEA = .116, 90% CI [.093; .140]. The difference was $\Delta\chi 2$ (3) 66.167, $p<0.001$. The loads ranged from β = .48 to .76. From what was presented above we inferred that the two-factor solution is acceptable and superior to the one-dimensional one. Table 5 presents original Spanish items, English translations, and standardized coefficients (β) for each item of the two-dimensional model.

The reliability of the physiological symptoms´ subscale was α = .78; the reliability of the cognitive symptoms' subscale was α = .70. Thus, both reliabilities were acceptable.

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Table 5

Item wording and loadings of the alternative, bi-dimensional Pandemic Acute Stress Scale

Item number	Item wording	Factor loadings (β)
Physiological symptoms		
1	Dolores de cabeza, migrañas, dolor de espalda, o cualquier dolor producto de tensión muscular *(Headaches, migraines, back pain, or any pain from muscle tension)*	.68
2	Mareos, náuseas, flatulencia, acidez, diarrea u otros problemas estomacales *(Dizziness, nausea, flatulence, heartburn, diarrhea, or other stomach problems)*	.66
3	Sensación de cansancio y falta de energía *(A feeling of being tired and lack of energy)*	.80
4	Problemas para conciliar el sueño, para mantenerse dormido o despertarse antes de lo que debería *(Troubles for falling asleep, for staying asleep, or waking up earlier than you should)*	.64
Cognitive symptoms		
5	Miedo *(Fear)*	.67
6	Sensación de que se iba a morir o que iba a perder el control de usted mismo *(Feeling that you were going to die or lose control of yourself)*	.79
7	Sensación de "no estar en su propio cuerpo" *(Feeling of "not being in your own body")*	.57

Note. Items were introduced with the following stem in Spanish: "*Desde que empezó la emergencia de la Pandemia COVID-19, ¿ha presentado usted alguno de los siguientes síntomas?*" (*Since the COVID-19 Pandemic emergency began, have you presented any of the following symptoms?*). The association between factors was *r* = .71 (*p* < .001). Item translations into English are between parentheses.

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