Affected during the pandemic in university athletes: a further review of the psychometric properties of the positive and negatives affects schedule

Afecto durante la pandemia en atletas universitarios: una revisión adicional de las propiedades psicométricas del programa de afecto positivo y negativo

Authors

Felipe Vallejo-Reyes [1,2]
Frano Giakoni-Ramírez [3]
David Parra-Camacho [4]
Rodrigo Yáñez-Sepúlveda [3]
Jorge Olivares-Arancibia [5]
Daniel Duclos-Bastías [1,6]

[1]Pontificia Universidad Católica de Valparaíso (Chile)
[2]Universidad de Playa Ancha (Chile)
[3]Universidad Andres Bello (Chile)
[4]Universidad de Valencia (Spain)
[5]Universidad de las Américas (Chile)
[6] University of Castilla-La Mancha (Spain)

Corresponding author:
felipe.vallejo@pucv.cl

How to cite in APA

Vallejo-Reyes, F., Giakoni-Ramírez, F., Parra-Camacho, D., Yañez Sepulveda, R. A., Olivares-Arancibia, J., & Duclos-Bastías, D. (2025). Affected during the pandemic in university athletes: a further review of the psychometric properties of the positive and negatives affects schedule. *Retos*, *63*, 516–523. https://doi.org/10.47197/retos.v63.109049

Abstract

Introduction: The COVID-19 had a significant impact on university sports around the world. Describe the positive and negative affect of a sample of Chilean university athletes, reviewing the psychometric properties of the Affect Scale in the pandemic period and ad hoc socio-demographic variables.
Objective: Review the psychometric features of the Chilean version of the PANAS during the COVID-19 close-out
Methodology: The PANAS scale was used present mood of the participants using a 1 to 5-point scale. The two-factor confirmatory analysis of the original scale obtained a poor goodness-of-fit index. At the item level, the ALERT item of the Positive Affect factor showed a low loading and a higher weight on the Negative Affect factor.
Results: An exploratory principal components analysis obtained a four-factor model, with new items corresponding to PA and four items to a factor called AFRAID, four items to another factor called UPSET, and another two-item factor called GUILTY. The fit of the model using the ratio between chi-square and degrees of freedom was acceptable.
Discussion: The results of the research should be contrasted with those of other research found in the literature.
Conclusions: The new four-factor model achieves higher goodness of fit than the original model. The higher reliability for Positive Affect to the detriment of the reliability of Negative Affect. Although the goodness of fit index obtained was not optimal, the new factor organization allows a more differentiated analysis of PANAS according to gender in the sample studied.

Keywords

Confinement; emotions; scale; sports: 4 factors.

Resumen

Introducción: El COVID-19 tuvo un impacto significativo en el deporte universitario de todo el mundo. Describir el afecto positivo y negativo de una muestra de deportistas universitarios chilenos, revisando las propiedades psicométricas de la Escala de Afecto en el período pandémico y variables sociodemográficas ad hoc.
Objetivo: Revisar las características psicométricas de la versión chilena de la PANAS durante el cierre de COVID-19.
Metodología: Se utilizó la escala PANAS para presentar el estado de ánimo de los participantes utilizando una escala de 1 a 5 puntos. El análisis confirmatorio de dos factores de la escala original obtuvo un índice de bondad de ajuste pobre. A nivel de ítem, el ítem ALERTA del factor Afecto Positivo mostró una baja carga y un mayor peso en el factor Afecto Negativo.
Resultados: Un análisis exploratorio de componentes principales obtuvo un modelo de cuatro factores, con nuevos ítems correspondientes a Afecto Positivo y cuatro ítems a un factor denominado Miedo, cuatro ítems a otro factor denominado Inquieto, y otro factor de dos ítems denominado Culpable. El ajuste del modelo mediante la relación entre chi-cuadrado y grados de libertad fue aceptable.
Discusión: Los resultados de la investigación deben ser contrastados con los de otras investigaciones encontradas en la literatura.
Conclusiones: El nuevo modelo de cuatro factores consigue una mayor bondad de ajuste que le modelo original. La fiabilidad del instrumento fue buena para Afecto Positivo y Enfado, aceptable para Miedo, en tanto la más baja fue para el factor Confianza. Aunque el índice de bondad de ajuste obtenido no fue el óptimo, la nueva organización factorial permite un análisis más diferenciado de la muestra de estudio.

Palabras clave

Confinamiento; deportes; emociones; escala; 4 factores.

Introduction

The pandemic caused by the SARS-CoV-2 virus had a major impact worldwide, almost in every area, including education and sports (Duclos-Bastías et al., 2021; United Nations Educational Scientific and Cultural Organization [UNESCO], 2020). The World Health Organization recommended social isolation at home (WHO, 2021). As consequence, drastic changes occurred in almost every activity and people's behaviors in their daily affecting work and the education system. Those restrictions reached sports activities whether outdoor or indoor, workouts and competitions. The UNESCO suggested seeking options through virtual learning platforms to continue teaching activities (2021) and consequently, university students and sporting activities (Duclos-Bastías et al., 2021). All those threats, restrictions, and changes caused a significant impact: increasing stress, anxiety, depression, therefore in mental health (Lades et al., 2020; Chih-Hung, Cheng-Fang, Ju-Yu & Ming-Jen, 2006). In this pandemic scenario, the World Health Organization recommended sports practice in order to promote health and well-being (WHO, 2020).

Affective states are a broad construct that considers sensations, emotions, and also moods (Padrós, Soriano-Mas & Navarro, 2012). Affects influence most of the functioning areas of human beings (Watson, 2000). Emotions include experiences, i.e. subjective affective phenomena of positive or negative quality (Hervás & Vázquez, 2006). Watson and Tellegen (1985) summarize the collected evidence in a two-dimensional model: pleasure-pleasure and activation. The first two opposite dimensions are considered independent and analyzed using factorial rotations. Thus, Positive Affect (PA) represents states of happiness, activation, alertness, concentration, and pleasurable engagement.

Conversely, Negative Affect (NA) involves feelings of annoyance, anger, guilt, sadness, and nervousness. Reduced levels of negative affect are related with states of calm and tranquility (Watson et al, 1988). In the general population, Khan et al. (2020) posit that the epidemic led to increased feelings of fear, anxiety, depression, anger, helplessness, and confusion. Bao (2020) cited in Wang et al. (2020) evidence that the pandemic caused panic and mental stress. Those authors described the level of PA and NA in university students and its relationship to training with health care, sleep quality, and self-care behaviors such as using masks or sleeping away from home. The prevalence of affective disorders such as anxiety disorders and depressed incremented as a consequence of the pandemic in university students (Aiyer et al., 2020; Rodriguez & Blanco, 2021). Duclos-Bastías et al. (2021) demonstrated that university athletes with several training frequencies and intensities scored in the PANAS similarly to pre-pandemic not necessarily athletic samples. The authors found inverse correlations between NA and the amount of sports practice and higher direct correlations for PA. Such evidence points out that practicing sports improved the affect schedule of the athlete students while Covid-19 pandemic.

Method

Material & methods

The study was defined as a non-experimental, cross-sectional investigation. It is defined as instrumental according to the proposal of Ato, López and Benavente (2013).

Participants

A non-probabilistic convenience sample was used, considering 254 university athletes belonging to 6 universities in the Valparaíso Region. The sample was distributed in 46% men (n = 116) and 54% women (n = 138). The age range of the sample was between 18 and 31 years (M = 22.17; SD = 2.76), with an average age of 22 years for men (SD = 2.94) and 21 years for women (SD = 2.52). Inclusion criteria were: being students enrolled in 2020; participating in a university sports team; and having agreed to participate in the study by signing the informed consent form.

Procedure

The sports departments of six universities were invited by letter. All of the university departments accepted to collaborate in the study. Subsequently, e-mails were sent inviting university athletes to participate in the study. The text of the invitation included the hyperlink to the consent agreement and

the instrument. The PANAS assessment consisted in the list of emotions and feelings in "this moment" i.e. present time. A total of 254 responses were received. The data collection took place between September and October 2020.

The study followed the Guidelines of Ethics in Sport and Exercise Science Research (Harriss et al., 2019) with approval from the Bioethics Committee of Pontificia Universidad Católica de Valparaíso.

Instrument

An ad hoc socio-demographic variables form was used to describe: Sex, Age, County, University, School, and Sport. The PA and NA were assessed by the Dufey & Fernandez (2012) Spanish version of the PANAS (Watson et al., 1988) validated in Chilean university students. The schedule assessed the present mood of the participants using a 1 to 5 level scale labeled from 1 "Very slightly or not at all" to 5 "Very much", respectively. PA included ten items as well as NA. The PANAS items were: Enthusiastic, Interested, Determined, Excited, Inspired, Alert, Active, Strong, Proud, And Attentive. NA: Scared, Afraid, Upset, Distressed, Jittery, Nervous, Ashamed, Guilty, Irritable, and hostile.

Data analysis

The data were analyzed with the Jamovi software for Windows (2.0) obtaining descriptive and inferential statistics. The validity of the standard version of the PANAS (i.e. two independent factors of ten items each) was tested first by confirmatory factor analysis (CFA). Then, a Principal Component analysis of the test was done using eigenvalues >1.0 to determine the proper number of factors. Finally, we ran two CFA. The first CFA used the organization of the items obtained by the PCA and the second one considered cross-loading and low-loading item criteria. We compared the goodness of fit indexes of those two CFA. For reliability, we run Cronbach´s α and McDonald's w for each factor.

On the other hand, we described and compared the results obtained from the sample considering the standard PANAS and the proposed new version, using gender, and university as co-variables.

Results

The study findings are organized in two parts. First, the psychometric properties of the PANAS are analysed to find out the best factor structure of the test. Once such review is done, we analyse and compare differences of the two factors solution and the four factors one.

Since there are enough studies of the two-factor model, Table 1 provides the results of the CFA, using the Chilean version of the test (Duffey & Fernández, 2012).

Table 1. Factor Loadings of CFA obtained by the PANAS.

Factor	Indicator	Estimate	SE	Z	p
Factor 1	Interested	0.567	0.0512	11.07	< .001
	Enthusiastic	0.628	0.0596	10.53	< .001
	Strong	0.662	0.0587	11.28	< .001
	Optimistic	0.664	0.0552	12.03	< .001
	Proud	0.562	0.0631	8.90	< .001
	Inspired	0.814	0.0626	13.00	< .001
	Determined	0.722	0.0580	12.44	< .001
	Attentive	0.582	0.0571	10.21	< .001
	Alert	0.286	0.0692	4.14	< .001
	Active	0.767	0.0581	13.19	< .001
Factor 2	Angry	0.676	0.0579	11.68	< .001
	Upset	0.697	0.0657	10.61	< .001
	Guilty	0.578	0.0657	8.80	< .001
	Scared	0.640	0.0599	10.69	< .001
	Hostile	0.497	0.0595	8.35	< .001
	Afraid	0.633	0.0579	10.94	< .001
	Nervous	0.781	0.0719	10.86	< .001
	Irritable	0.733	0.0704	10.41	< .001
	Ashamed	0.442	0.0555	7.97	< .001
	Jittery	0.793	0.0720	11.01	< .001

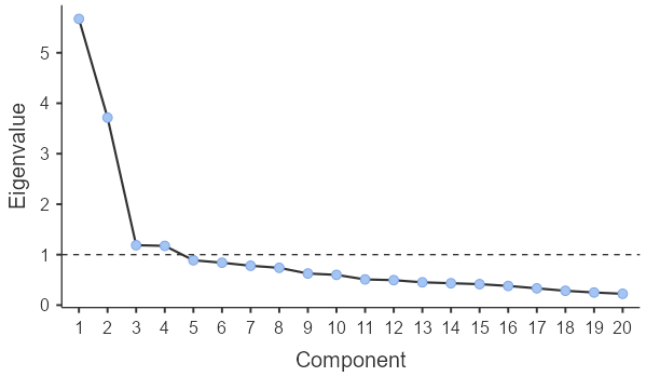
Table 2 shows PANAS fit indexes did not reach the cut-off criteria proposed by Hu and Bentler (1999). There is also one item ("Alert") that loaded very low in PA. The test for exact fit was X2 = 575; df = 160; p <.001 and X2/df = 3.5.

Table 2. Fit Measures of CFA.

				RMSEA 90% CI		
CFI	TLI	SRMR	RMSEA	Lower	Upper	BIC
0.795	0.769	0.0869	0.0973	0.0886	0.106	13363

Subsequently, we ran a PCA using eigenvalues above 1.0 which determine that four factors might represent the PANAS structure as shown in Figure 1.

Figure 1. Screen plot of Eigenvalues.



The organization of the items by component in a four-factor structure is presented in table 3.

Table 3. Component Loadings.

Affect	Component				Uniqueness
	1	2	3	4	
Inspired	0.766				0.385
Active	0.740				0.394
Optimistic	0.738				0.406
Determined	0.727				0.418
Strong	0.707				0.442
Interested	0.693				0.509
Enthusiastic	0.684				0.444
Attentive	0.663				0.441
Proud	0.591				0.592
Scared		0.741			0.365
Jittery		0.734			0.367
Afraid		0.678			0.397
Alert		0.629			0.428
Nervous		0.622			0.441
Upset			0.819		0.280
Angry			0.814		0.253
Irritable			0.659		0.351
Hostile			0.579		0.563
Ashamed				0.707	0.379
Guilty				0.660	0.398

Note: VARIMAX rotation was used

Notice that the item "Alert" loaded higher with component 2, which items are related to fear feelings. The items of component 3 are all semantically associated with anger and hostility. The component 4 items are associated with self-depreciation.
The following CFA was run with the PCA solution presented in table 4.

Table 4. Factor Loadings of CFA for a four-factor model (17 items).

Factor	Indicator	Estimate	SE	Z	p
Factor 1	Strong	0.668	0.0594	11.26	<.001
	Optimistic	0.653	0.0563	11.60	<.001
	Proud	0.564	0.0640	8.81	<.001

	Inspired	0.787	0.0643	12.24	< .001
	Determined	0.763	0.0576	13.23	< .001
	Attentive	0.594	0.0575	10.33	< .001
	Active	0.758	0.0593	12.78	< .001
Factor 2	Scared	0.736	0.0585	12.58	< .001
	Afraid	0.720	0.0569	12.66	< .001
	Nervous	0.780	0.0744	10.48	< .001
	Jittery	0.865	0.0719	12.04	< .001
	Alert	0.401	0.0698	5.74	< .001
Factor 3	Angry	0.839	0.0529	15.88	< .001
	Upset	0.860	0.0596	14.43	< .001
	Hostile	0.477	0.0604	7.90	< .001
	Irritable	0.715	0.0718	9.96	< .001
	Ashamed	0.581	0.0607	9.58	< .001
	Guilty	0.803	0.0749	10.71	< .001

In this CFA the test for Exact Fit was X2 = 185, df = 84; p = <.001, and X2/df = 2.20.

Table 5. Fit Measures of CFA for 4-factor CFA (17 items).

				RMSEA 90% CI		
CFI	TLI	SRMR	RMSEA	Lower	Upper	BIC
0.869	0.844	0.0820	0.0834	0.0732	0.0938	12048

Table 6 demonstrates that fit indexes, even though increased, did not reach satisfactory levels according to Hu and Bentler's (1999) recommendations. A further CFA ran, removing items that loaded under .60. However, the item "Ashamed" was maintained to conserve component 4 (Table 5).

Table 6. Factor Loadings of CFA with dropped items (14 items).

Factor	Indicator	Estimate	SE	Z	p
Factor 1	Strong	0.653	0.0607	10.76	< .001
	Optimistic	0.650	0.0573	11.34	< .001
	Inspired	0.796	0.0653	12.19	< .001
	Determined	0.760	0.0588	12.92	< .001
	Active	0.763	0.0603	12.64	< .001
Factor 2	Scared	0.728	0.0592	12.29	< .001
	Afraid	0.719	0.0576	12.48	< .001
	Nervous	0.785	0.0748	10.50	< .001
	Jittery	0.865	0.0723	11.97	< .001
Factor 3	Angry	0.839	0.0536	15.67	< .001
	Upset	0.883	0.0599	14.75	< .001
	Irritable	0.696	0.0719	9.68	< .001
Factor 4	Ashamed	0.577	0.0610	9.46	< .001
	Guilty	0.809	0.0757	10.68	< .001

The test for Exact Fit was X2 = 245, df = 98; X2/df = 2.5, while the other fit measures are acceptable according to Hu and Bentler (1999) (Table 7).

Table 7. Fit Measures of CFA using selected items.

				RMSEA 90% CI		
CFI	TLI	SRMR	RMSEA	Lower	Upper	BIC
0.869	0.844	0.0820	0.0834	0.0732	0.0938	12048

The resulting reliability of the PANAS proposed structure is presented in table 8. This analysis points out that three of four factors had adequate internal consistency, while one did not reach the suggested .7, however, the number of items is critical to the reliability value.

Table 8. PANAS 4-Factors reliability.

Factor	Cronbach's α	McDonald´s ω	Consistency
PA (5 items)	.833	.834	Good
FEAR (4 items)	.733	.731	Acceptable
ANG (3 items)	.787	.808	Acceptable/good
SDEP (2 items)	.659	.667	Poor

Because the 14 items solution of the test had the best-fit indexes, we decided to utilize the PANAS 14 items version (PANAS 14 i), to assess the study sample.

Table 9. Descriptive statistics of two and four-factor PANAS.

			Two-factors		Four-factors			
		Sex	PA	NA	PA5i	FEAR4i	ANG3i	SDEP2i
	Median	Fem.	30.0	20.0	15.0	9.00	6.00	2.00
		Men	33.0	20.0	17.0	8.00	6.00	3.00
	Min.	Fem.	15.0	10.0	8.00	4.00	3.00	2.00
		Men	14.0	10.0	6.00	4.00	3.00	2.00
	Max.	Fem.	49.0	41.0	24.0	19.0	13.0	9.00
		Men	49.0	45.0	25.0	19.0	15.0	10.0
	Sh-W p	Fem.	0.371	< .001	0.005	< .001	< .001	< .001
		Men	0.179	0.001	0.092	< .001	< .001	< .001
Total	Median		31.5	20.0	16.0	9.00	6.00	3.00
	Min.		14.0	10.0	6.00	4.00	3.00	2.00
	Max.		49.0	45.0	25.0	19.0	15.0	10.0
	Sh-W p		0.151	< .001	0.006	< .001	< .001	< .001

Table 10. Sample differences by sex and university.

		χ^2	df	p
Sex	PA	9.311	1	0.002*
	NA	0.138	1	0.710
	PA5i	13.321	1	< .001*
	FEAR4i	4.560	1	0.033
	ANG3i	0.123	1	0.725
	SDEP2i	1.788	1	0.181
University	PA	6.57	5	0.255
	NA	10.59	5	0.060
	PA5i	8.00	5	0.156
	FEAR4i	5.77	5	0.330
	ANG3i	16.32	5	0.006*
	SDEP2i	9.50	5	0.091
County	PA	26.8	18	0.084
	NA	21.4	18	0.258
	PA5i	31.5	18	0.025*
	FEAR4i	22.8	18	0.199
	ANG3i	27.5	18	0.070
	SDEP2i	18.6	18	0.418

Discussion and conclusions

The aim of this study was to review the psychometric features of the Chilean version of the PANAS during the COVID-19 close-out (Duclos et al., 2021). Such a purpose was due to the insufficient fit indexes obtained by the Schedule in this secondary analysis. One of the possible causes of these low-validity results was the cross-loading of the item "Alert" originally belonging to the PA factor. Following the psychometric literature, we decided to eliminate such an item. As the fit indices still did not reach the cut-off criteria of goodness of fin indexes, we eliminated other items with low factor loading. As consequence, the model changed from two independent factors proposed by Watson et al. (1988) to a four-factor model in which NA items were grouped into three different factors. However, Watson and Clark (1994) developed 60 items expanded form of PANAS (PANAS-X) in which the NA is divided into four scales: Sadness (5 items), Hostility (6 items), Guilt (6 items), and Fear (6 items). The authors ran a convergent validity with the POMS (McNair, Lorr & Droppleman, 1971) in which the factors Tension-Anxiety, Anger-Hostility, Depression-Dejection, Fatigue, and Vigor were highly correlated with Fear, Hostility, Sadness, Fatigue, and Positive affect, respectively. More recently, Merz, et al. (2013) in an African American sample, by using a 10 items short version of the PANAS, obtained three factors. The factors were named as PA, Afraid and Upset. Following Vera-Villarroel et al. (2019) who assessed several Chilean samples, two general adult populations, adolescent population, and young people with depressive symptomatology.

However, the authors conclude that CFA had adequate goodness-of fit indicators, as we consider EFA of two and three factors' solutions, it might be observed that the last one had better fit indexes.

Notwithstanding the states, the PANAS internal factor structure varies according to language, culture and kind of sample (i.e. clinical vs. nonclinical).

With all the above, we are trying to demonstrate that the universal two independent factor's structure originally proposed for the PANAS might vary depending not only on the population kind, language, territory, and culture, but emotional states of a given human race timespan climate as Covid-19 created.

Even though we cannot generalize these findings to other populations or nowadays, further research trying this new four factor version shall be addressed. From a Psychometric perspective the two items factor SDEP must be reinforced with another semantically coherent item to improve the factor reliability. Also, the sampling has to be more representative of the general population, not only college athletes as the present study.

Practical applications

Thus, this new four-factor version of the PANAS scale can be very useful for the coach to know the levels of general positive and negative affect in the case of Chilean university athlete populations. For the above, it is suggested that the new version of the PANAS scale be applied together with other variables related to the levels and loads of training or the time devoted to academic activities during.

Conflict of interest

No conflict of interest was reported by all authors.

Funding

This research received no external funding.

References

Aiyer, A., Surani, S., Gill, Y. Ratnani, I., & Shaleen Sunesara, S. (2020). Covid-19 Anxiety and Stress Survey (CASS) in High School and College Students due to Coronavirus Disease 2019. Chest Infections, 158, 4. http://doi.org/10.1016/j.chest.2020.08.312

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

Bao ,Y., Sun, Y., Meng, S., Shi, J. and Lu, L. (2020). 2019-nCoV epidemic: address mental health care to empower society. Lancet 395:E37–E38. https://doi.org/10.1016/S0140-6736(20)30309-3

Chih-Hung, K. Cheng-Fang, Y. & Ju. Yu, Y. (2006). Psychosocial impact among the public of the severe acute respiratory syndrome epidemic in Taiwan. Psychiatry and Clinical Neurosciences, 60, 397-403. https://doi.org/10.111/j.1440-1819.2006.01522

Duclos-Bastías, D., Vallejo-Reyes, F., Giakoni-Ramírez, F., & Parra-Camacho, D. (2021). Validation of the Marathon Motivation Scale in Chile. Journal of Human Sport and Exercise, 16(2), 348-360. https://doi.org/10.14198/jhse.2021.162.10

Dufey, M. & Fernández, A. (2012). Validez y confiabilidad del Positive Affect and Negative Affect Schedule (PANAS) en estudiantes universitarios chilenos. Revista Iberoamericana de Diagnóstico y Evaluación - e Avaliação Psicológica, 2(34), 157-173. https://www.redalyc.org/articulo.oa?id=459645438008

Harriss, D. J., MacSween, A., & Atkinson, G. (2019). Ethical standards in sport and exercise science research: 2020 update. International journal of sports medicine, 40(13), 813-817.

Hervás, G., & Vázquez, C. (2006). La regulación afectiva: modelos, investigación e implicaciones para la salud mental y física. Revista de psicología general y aplicada, 59(1-2), 9-36.

Khan, K.S., Mamun, M.A., & Griffiths, M.D. (2020). The Mental Health Impact of the COVID-19 Pandemic Across Different Cohorts. International Journal Mental Health Addiction, 1-7. https://doi.org/10.1007/s11469-020-00367-0

Lades, L. K., Laffan, K., Daly, M., & Delaney, L. (2020). Daily emotional well-being during the COVID-19 pandemic. British journal of health psychology, 25(4), 902–911. https://doi.org/10.1111/bjhp.12450

Li-tze Hu & Peter M. Bentler (1999) Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives, Structural Equation Modeling: A Multidisciplinary Journal, 6(1), 1-55, https://doi.org/10.1080/10705519909540118

McNair, D., Lorr, M. & Droppleman, L. (1971). Manual for the Profile of Mood States. San Diego, CA:Educational and Industrial Testing Services.

Merz, E. L., Malcarne, V. L., Roesch, S. C., Ko, C. M., Emerson, M., Roma, V. G., & Sadler, G. R. (2013). Psychometric properties of Positive and Negative Affect Schedule (PANAS) original and short forms in an African American community sample. Journal of affective disorders, 151(3), 942–949. https://doi.org/10.1016/j.jad.2013.08.011

Padrós, F., Soriano-Mas, C. & Navarro, G. (2012). Afecto positivo y negativo: ¿una dimensión bipolar o dos dimensiones unipolares independientes?. Interdisciplinaria, 29(1), 151-164.

Rodríguez, I. S., & Blanco, A. Z. (2021). Depresión, ansiedad y estrés de universitarios en tiempos de COVID-19: Uso de escala DASS-21. Espíritu Emprendedor TES, 5(3), 45-61. https://doi.org/10.33970/eetes.v5.n3.2021.263

United Nations Educational Scientific and Cultural Organization (2020). El Coronavirus COVID-19 y la educación superior: impacto y recomendaciones UNESCO-IESALC. Available online: https://www.iesalc.unesco.org/2020/04/02/el-coronavirus-covid-19-y-la-educacion-superior-impacto-y-recomendaciones/

Vera-Villarroel, P., Urzúa, A., Jaime, D., Contreras, D., Zych, I., Celis-Atenas, K., Silva, J. R., & Lillo, S. (2019). Positive and Negative Affect Schedule (PANAS): Psychometric Properties and Discriminative Capacity in Several Chilean Samples. Evaluation & the health professions, 42(4), 473–497. https://doi.org/10.1177/0163278717745344

Wang, Y., Jing, X., Han, W., Jing, Y., & Xu, L. (2020). Positive and negative affect of university and college students during COVID-19 outbreak: a network-based survey. International journal of public health, 65(8), 1437–1443. https://doi.org/10.1007/s00038-020-01483-3

Watson, D., & Tellegen, A. (1985). Toward a consensual structure of mood. Psychological Bulletin, 98(2), 219–235. https://doi.org/10.1037/0033-2909.98.2.219

Watson, D., Clark, L. A., & Tellegen, A. (1988) Development and Validation of Brief Measures of Positive and Negative Affect: The PANAS Scales. Journal of Personality and Social Psychology, 54, 6, 1063-1070.

Watson, D., Wiese, D., Vaidya, J., & Tellegen, A. (1999). The two general activation systems of affect: Structural findings, evolutionary considerations, and psychobiological evidence. Journal of Personality and Social Psychology, 76(5), 820–838. https://doi.org/10.1037/0022-3514.76.5.820

World Health Organization (2020). The impact of COVID-19 on sport, physical activity, and well-being and its effects on social development. Available online: https://www.un.org/development/desa/dspd/2020/05/covid-19-sport/

Authors' and translators' details:

Felipe Vallejo-Reyes	felipe.vallejo@pucv.cl	Author- Translator
Frano Giakoni-Ramírez	frano.giakoni@unab.cl	Author
David Parra-Camacho	david.parra-camacho@uv.es	Author
Rodrigo Yáñez-Sepúlveda	rodrigo.yanez.s@unab.cl	Author
Jorge Olivares-Arancibia	jolivares@udla.cl	Author
Daniel Duclos-Bastías	daniel.duclos@pucv.cl	Author