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Development and Validation of the Social Anomie Brief Scale (SAS-10) Against the New Standards Implemented During the COVID-19 Pandemic

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ARTICLE INFO	ABSTRACT
	Currently, social anomie is a public health problem worldwide since people show behavior that does not conform to the newly established norms. Faced with this, the aim of the study was to develop and validate the psychometric properties of a short scale to assess social anomie in a sample of 406 adults (48% male and 52% female) between the ages of 18 and 62. Validity was evaluated based on internal structure through confirmatory factor analysis (CFA) and reliability through the internal consistency method with the hierarchical omega coefficient. The results indicate that a bi-factor model presents better indexes of adjustment to the data ($\chi2$=62.86; df=25; p=.000; RMSEA=.061 [IC90% .042-.080]; SRMR=.024; CFI=.99; TLI=.99). Furthermore, the bi-factor model presents adequate levels of reliability for the general factor (ω_H=.70) and for the affective (ω_{hs}=.32) and behavior (ω_{hs}=.41) dimensions. In conclusion, the study results provide a conceptual and statistical basis for the psychometric development of the SAS-10 scale in subsequent studies. **Keywords:** social anomie, confirmatory factor analysis, COVID-19, public health

INTRODUCTION

The SARS-CoV-2 (COVID-19) pandemic is currently the largest public health emergency the world has ever faced. To date, there are 31,664,104 cases diagnosed with COVID-19 and 972,221 deaths [1]. In the Americas, there are 15,872,421 confirmed cases, making it the continent with the most cases in the world [1]. In addition, the survivors of COVID-19 have been left with significant physical consequences [2].

Faced with this, governments have implemented new norms of social coexistence to mitigate the advance of this disease. This, together with the fear of contagion, prolonged social isolation, death of family members, physical distancing, and the closure of schools and workplaces have led to a social crisis that negatively impacts people's mental health [3,4].

In this context of crisis, it has been observed that social anomie is a recurrent problem worldwide, since most people have behavior that does not conform to the new established norms, such as participating in social gatherings, not wearing protective masks, going out after hours, not washing hands, not maintaining physical distance in the street, not complying with quarantine when there is a diagnosis of COVID-19, among others. All of this constitutes a serious problem for people's

health since it increases the number of infections and reduces the effectiveness of the health measures [5].

Social anomie is the perceived discrepancy between people's aspirations and the legal means available to them to achieve those aspirations [6]. This perceived discrepancy arises and increases in situations of rapid social change, economic crisis, economic inequality, war or social conflict [7]. Furthermore, this discrepancy causes a rejection of the norms and/or laws in force in society and the normal fulfillment of them [8]. It is also important to point out that social anomie is a perception shared by the members of a society, where there are two constitutive characteristics: (a) perception of disintegration: distrust and rupture of social cohesion and (b) deregulation: perception of illegitimacy and inefficiency of political leaders [9]. All this causes people to focus on protecting their interests and to be indifferent to the health and well-being of the people in their community [10].

In the context of the COVID-19 pandemic, two important components can be identified: the behavioral factor, which refers to non-compliance with the norms and/or laws [10], and the affective factor, which refers to the degree of dissatisfaction, discomfort or concern generated by the new norms and/or laws implemented by the government [11]. It is important to point out that although there are several studies that have shown the impact of COVID-19 on people's mental

health, there are few studies that analyze the role of social anomie during the pandemic and its impact on mental health indicators. Although studies prior to the pandemic show that social anomie is related to reduced life satisfaction [12], reduced happiness [13], and increased depression [14].

Faced with this problem, few instruments have been found to measure social anomie [7,15,16] and none related to the new norms of social coexistence. The first instrument is made up of twenty items that measure four dimensions: exclusion, uncertainty, degradation, and estrangement. Although the dimensions are based on the initial model of [17], the psychometric properties of the scale are not evidenced [15]. The second instrument was developed with the main objective of early detection of possible political instability and was made up of four dimensions: discontent, distrust, pessimism, and individual anomie. Regarding its psychometric properties, the only evidence of construct validity is reported through an exploratory factor analysis [16]. The third instrument has the objective of measuring the perception of the social and political conditions of society and is made up of two dimensions: breakdown of social cohesion and breakdown of leadership. Regarding its psychometric properties, it presents evidence of construct validity, convergent validity, discriminant validity, and reliability [7].

For all the above, the present study primary aims to develop and study the psychometric properties of the social anomie short scale (SAS-10) in the general Peruvian population. As a secondary aim, the study will carry out a descriptive analysis of the indicators of social anomie in the general population.

METHOD

Participants

For the study, a sample of 406 Peruvian adults of both sexes (48% male and 52% female) between the ages of 18 and 62 was collected (M=33.8; SD=13.82). For the collection of the data, a non-probabilistic sampling was used for convenience using the following inclusion criteria: (a) informed consent of the participants, (b) ages between 18 and 65, and (c) ability to read and write in Spanish.

Instrument

The social anomie short scale (SAS-10) presents ten items that have four response options ranging from totally disagree (0) to totally agree (3). All items are direct, where a higher score indicates a greater presence of social anomie. The scale has two dimensions: affective aspect (items from 1 to 5) and behavioral aspect (items from 6 to 10).

Procedure

The study was approved by the ethics committee of the Center for Research and Innovation in Health (CIISA) at the Universidad. The data collection was done through a virtual form, using the digital platform Google Forms. In the first part of the virtual form, the objectives of the study were explained, the time required to complete the form was presented and informed was requested, where the confidentiality of the information was assured with the assurance that the participants could withdraw at any time. Only participants who gave their informed consent could complete the following sections of the form.

Data Analysis

Evidence of content validity was conducted with the participation of seven judges who evaluated the scale based on four criteria: (a) relevance, (b) coherence, (c) clarity, and (d) item context. Aiken's V coefficient [18] was used for quantification and an ad hoc program in Microsoft Excel© format [19] was used for the calculation. The EFA was carried out with the MINRES estimator, poly-correlation matrix and oblimin rotation. In addition, parallel analysis (PA) was used to determine the appropriate number of factors [20]. Confirmatory factor analysis (CFA) was performed with the weighted least squares with mean and variance corrected (WLSMV) estimator and the RMSEA SRMR indices were used to evaluate model fit, with values less than .05 indicating good fit, and between .05 and .08 being considered acceptable [21]. In addition, the CFI and TLI indices were used, where values higher than .95 indicate good fit [22]. The WRMR index was also used where values below 1.0 are adequate [23]. For the calculation of reliability, the hierarchical omega coefficient was used [24]. The H value was also used because it allows for evaluating how well a latent variable is represented by a set of items [25]. All statistical analyses were conducted using the RStudio environment [26] for R [27].

RESULTS

Content Validity

The items of both dimensions obtained coefficients higher than .70 in relevance (relation to the construct), coherence (relation to the dimension), clarity (the item is easily understood), and context (the words are usual for the context). Regarding the item wording, there were only minimal changes since most judges agreed with the item content and the response categories.

Exploratory Analysis of the Items

An exploratory factor analysis of the items was carried out, where the parallel analysis (PA) showed the existence of two factors. **Table 1** shows that the 10 items have high factorial loads (λ>.50) in their corresponding factors. In addition, both factors explain 61.3% of the variance of the construct. It is also worth noting that all the items present adequate indices of asymmetry and kurtosis (+-1.5).

Validity Related to the Internal Structure of the Scale

Table 2 shows that the bi-factor model presents adequate adjustment indexes (χ^2=62.86; df=25; p=.000; CFI=.99; TLI=.99; WRMR=.52; RMSEA=.061 [IC90% .042-.080]). Even so, the presence of other plausible models was reviewed and discarded. As can be seen in **Table 2**, a two-dimensional model (χ^2=229.92; df=43; CFI=.98; TLI=.97; WRMR=1.25; RMSEA=.104 [IC90% .091-.117]) and a one-dimensional model (χ^2=746.04; df=35; CFI=.91; TLI=.88; WRMR=3.06; RMSEA=.224 [IC90% .210-.238]) do not present adequate fit indices. Thus, it is confirmed that the bi-factor model is the model that best represents the factorial structure of the construct.

Figure 1 shows that the factorial loads of the general factor items are significant and high for the most part. Similarly, the specific affective and behavior factors have significant factor loads in each of their items.

Table 1. Exploratory analysis of the scale items

Item	Two factor model		Descriptive statistics of the items							
	F1	F2	M	DS	g1	g2	TD(%)	D(%)	A(%)	TA(%)
1. The new norms and/or laws cause me dissatisfaction.		.58	1.58	.73	-.02	-.27	5.4	39.9	46.1	8.6
2. It bothers me that new rules and/or laws do not help those who need it most.		.71	2.05	.83	-.72	.10	6.2	14.3	48.3	31.3
3. I feel upset because the new regulations and/or laws of my country do not allow me to cover my basic needs.		.85	1.53	.82	-.13	-.51	11.1	35.5	43.1	10.3
4. I feel worried because the new regulations and/or laws of my country affect my economic income.		.83	1.82	.80	-.42	-.15	6.4	23.4	52.0	18.2
5. I feel upset about the new rules and/or laws established by the government.		.71	1.42	.77	-.07	-.41	11.1	41.9	41.1	5.9
6. I evade the rules and/or laws to improve my economic income.	.90		1.12	.88	.29	-.77	27.8	38.7	27.6	5.9
7. When I want something, I do not mind breaking rules and/or laws of my country.	.90		1.05	.84	.27	-.78	29.1	40.1	27.1	3.7
8. I prefer to break the rules and/or laws so that my situation does not get worse.	.79		1.19	.83	.10	-.72	21.7	41.6	32.3	4.4
9. I have no remorse for breaking the rules and/or laws when I get what I want.	.60		1.01	.85	.37	-.68	31.0	40.6	24.4	3.9
10. I prefer to act to get what I need regardless of government regulations and/or laws.	.80		1.21	.82	.09	-.68	20.7	42.1	32.5	4.7

Note. F1=Affective component; F2=Behavioral component; g1=Asymmetry; g2=Kurtosis; TD=Totally disagree; ID=Disagree; A=Agree; TA=Totally agree

Table 2. Fit indexes for the models

Models	χ^2	df	p-value	TLI	CFI	WRMR	RMSEA [90%CI]	SRMR
Model 1	746.04	35	.000	.88	.91	3.06	.224 [.210-.238]	.118
Model 2	229.92	43	.000	.97	.98	1.25	.104 [.091-.117]	.055
Model 3	62.86	25	.000	.99	.99	.52	.061 [.042-.080]	.024

Note: Model 1=Unidimensional; Model 2=Two related factors; Model 3=Two factors; χ2=Chi-squared; df=Degrees of freedom; SRMR=Standardized root mean square residual; TLI=Tucker-Lewis index; CFI=Comparative fit index; RMSEA=Root mean square error of approximation
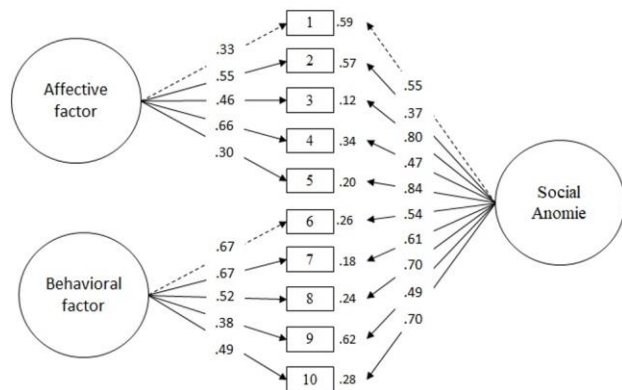

Figure 1. Two factor model for social anomia

Scale Reliability

The scale shows adequate reliability. The hierarchical omega coefficient was adequate for the general factor (ω_H=.70) and also for the affective dimension (ω_{hs}=.32) and the behavioral dimension (ω_{hs}=.41). Similarly, the general factor and its dimensions have an adequate H-*coefficient* (H_{HG}=.89; H_{hs}=.63, and H_{hs}=.71, respectively).

Prevalence of Social Anomie During the COVID-19 Pandemic

Table 1 shows that, in the affective factor, 52% of participants feel concerned that their country 's new rules and/or laws affect their economic income and 48.3% are upset that the new rules and/or laws do not help those who need it most. In the behavioral factor, 32.3% are willing to break the rules and/or laws so that their situation does not get worse.

DISCUSSION

The aim of the study was to develop and study the psychometric properties of the SAS-10 scale to measure social anomie, since no instruments have been found to assess the prevalence of this construct in the context of the COVID-19 pandemic. In this regard, the results show that the bi-factor model presents adequate adjustment indexes and is superior to other models proposed in the study. This finding supports the usefulness both of a general score of the test and of a score for each dimension.

In that regard, the approach of two specific dimensions (affective and behavioral) is different from other models of social anomie presented in the scientific literature [7,28,29]. This difference is due to the fact that social anomie is a complex and dynamic construct that refers to a social state and an individual state [30]. This study used an individual approach, where social anomie refers to a set of feelings, attitudes, and beliefs regarding the social and legal norms that govern a society [31].

This set of feelings (annoyance/displeasure/concern), attitudes (rejection), and behaviors (infringing the laws/norms) constitute the person's perception of the conditions of society. That is, they are a reflection of the social status in people's minds. In addition, this set of characteristics develops in people when there is a perception of a breakdown in social cohesion and a lack of legitimacy and effectiveness of the leaders [9,11]. It is also important to mention that the triggers of social anomie (for example, the pandemic) cause changes in people's perception of the conditions of society, which are then communicated intersubjective within the social context. That is, people's perceptions shape the collective consciousness and are in turn influenced by it [32].

Regarding the limitations of the study, non-probabilistic sampling was used, which limits the generalization of the results. In addition, test-retest reliability was not evaluated to assess the temporal stability of the scores. Finally, the convergent and predictive validity of the scale was not evaluated, to assess how well the SAS-10 scale relates to other variables. Despite these limitations, the study provides a conceptual and psychometric basis for an adequate measurement of social anomie. This will allow for a quick and efficient evaluation for the degree of incidence and prevalence of the construct during the COVID-19 pandemic.

It is concluded that the SAS-10 scale presents evidence of validity and reliability to measure social anomie against the measures imposed during COVID-19.

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