



ORIGINAL

## Validation of a Job Satisfaction Scale among Health Workers

### Validación de una Escala de Satisfacción Laboral entre Trabajadores de la Salud

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#### ABSTRACT

**Background:** job satisfaction is a key focus in organizational behavior studies, particularly relevant in the healthcare sector and nursing. It influences patient care quality and staff retention and is shaped by the work environment, working conditions, managerial support, and interactions among colleagues. However, there is limited research specifically addressing the job satisfaction of nurses in Peru, a critical area in health administration.

**Objective:** this study aimed to evaluate the metric properties of the S20/23 job satisfaction scale among Peruvian nurses.

**Methods:** an instrumental research design was employed using a non-probabilistic sample of 325 nurses from two hospitals in Lima, Peru. The Chilean version of the S20/23 scale was used, comprising four dimensions of job satisfaction (relationship with supervision, physical work space, professional fulfillment, and training and decision-making opportunities). Data analysis included descriptive statistics, confirmatory factor analysis (CFA), and reliability tests using Cronbach's Alpha and McDonald's Omega.

**Results:** the CFA revealed a satisfactory fit for the four-dimensional structure with 18 items ( $\chi^2 = 387,290$ ,  $df = 124$ ,  $p < ,001$ ,  $CFI = 0,92$ ,  $TLI = 0,90$ ,  $RMSEA = 0,08$ ,  $SRMR = 0,05$ ). The scale also demonstrated high reliability for each dimension: relationship with supervision ( $\alpha = 0,90$ ,  $\omega = 0,87$ ), physical work space ( $\alpha$ ,  $\omega = 0,92$ ), professional fulfillment ( $\alpha$ ,  $\omega = 0,88$ ), and training and decision-making opportunities ( $\alpha = 0,88$ ,  $\omega = 0,84$ ), with acceptable factor loadings ( $>0,70$ ).

**Conclusions:** the adapted 18-item S20/23 scale is a valid and reliable tool for assessing job satisfaction among Peruvian nurses. The study highlights the importance of specific job satisfaction dimensions, such as relationships with supervisors and professional development opportunities, in the Peruvian nursing context.

**Keywords:** Job; Satisfaction; Nursing; Healthcare; Peruvian.

#### RESUMEN

**Antecedentes:** la satisfacción laboral es un foco clave en los estudios de comportamiento organizacional, particularmente relevante en el sector sanitario y la enfermería. Influye en la calidad del cuidado al paciente y la retención del personal, y está moldeada por el ambiente de trabajo, las condiciones laborales, el apoyo gerencial y las interacciones entre colegas. Sin embargo, hay una investigación limitada específicamente dirigida a la satisfacción laboral de los enfermeros en Perú, un área crítica en la administración de la salud.

**Objetivo:** este estudio tuvo como objetivo evaluar las propiedades métricas de la escala de satisfacción

laboral S20/23 entre enfermeros peruanos.

**Métodos:** se empleó un diseño de investigación instrumental usando una muestra no probabilística de 325 enfermeros de dos hospitales en Lima, Perú. Se utilizó la versión chilena de la escala S20/23, que comprende cuatro dimensiones de satisfacción laboral (relación con la supervisión, espacio físico de trabajo, cumplimiento profesional y oportunidades de formación y toma de decisiones). El análisis de datos incluyó estadísticas descriptivas, análisis factorial confirmatorio (AFC) y pruebas de fiabilidad utilizando el Alfa de Cronbach y Omega de McDonald.

**Resultados:** el AFC reveló un ajuste satisfactorio para la estructura de cuatro dimensiones con 18 ítems ( $\chi^2 = 387,290$ ,  $df = 124$ ,  $p < ,001$ ,  $CFI = 0,92$ ,  $TLI = 0,90$ ,  $RMSEA = 0,08$ ,  $SRMR = 0,05$ ). La escala también demostró alta fiabilidad para cada dimensión: relación con la supervisión ( $\alpha = 0,90$ ,  $\omega = 0,87$ ), espacio físico de trabajo ( $\alpha$ ,  $\omega = 0,92$ ), cumplimiento profesional ( $\alpha$ ,  $\omega = 0,88$ ) y oportunidades de formación y toma de decisiones ( $\alpha = 0,88$ ,  $\omega = 0,84$ ), con cargas factoriales aceptables ( $>0,70$ ).

**Conclusiones:** la escala S20/23 adaptada de 18 ítems es una herramienta válida y fiable para evaluar la satisfacción laboral entre los enfermeros peruanos. El estudio destaca la importancia de dimensiones específicas de la satisfacción laboral, como las relaciones con los supervisores y las oportunidades de desarrollo profesional, en el contexto de la enfermería peruana.

**Palabras clave:** Trabajo; Satisfacción; Enfermería; Sanitario; Peruano.

## INTRODUCTION

Job satisfaction emerges as a central topic in organizational behavior studies, proving its special relevance in the healthcare sector, particularly in nursing.<sup>(1,2,3)</sup> Researchers have established job satisfaction as a crucial variable, highlighting its direct influence on patient care quality and staff retention.<sup>(4,5,6)</sup> From an administrative perspective, job satisfaction encapsulates the perceptions and attitudes individuals hold regarding their work environment (Bektaş, 2017; Soriano-Vázquez et al., 2023), shaped by multiple factors such as working conditions, workload, managerial support, interactions with colleagues, and compensation, among others.<sup>(7,8,9)</sup>

In the Peruvian context, nurses are on the front line, facing a variety of stressful challenges that can erode their job satisfaction. This includes long working hours, a noticeable lack of administrative support, constraints on available resources, and, more immediately, the challenges imposed by the COVID-19 pandemic.<sup>(10,11,12)</sup> Despite being an essential pillar in the health system and recognizing their irreplaceable role, there remains a deficit of research dedicated to exploring job satisfaction in this group.<sup>(13,14)</sup> From an administrative management standpoint, it is imperative to identify areas of dissatisfaction, develop effective intervention strategies to enhance job satisfaction, and thereby optimize patient care quality and promote staff stability and retention within healthcare institutions.<sup>(15,16)</sup>

The measurement of job satisfaction has evolved over the years with the development of various tools and scales. One of the early ones in the field was the Job Satisfaction Index (JSI) by Brayfield and Rothe,<sup>(17)</sup> comprising 18 items and focusing on the general sentiment towards work. Despite its simplicity, the JSI has been shown to be a reliable and valid measure of job satisfaction.<sup>(18)</sup> The Minnesota Satisfaction Questionnaire (MSQ) by Weiss, Dawis, England, and Lofquist<sup>(19)</sup> was developed to more specifically measure satisfaction with various aspects of the job, such as compensation, promotion, supervision, and working conditions. The MSQ has proven to be a useful measure in various populations and settings, including nurses.<sup>(20)</sup> Another widely used scale is the Job Satisfaction Questionnaire (JSQ) by Judge et al.<sup>(21)</sup> This tool measures satisfaction with five job aspects: pay, promotions, supervision, co-workers, and the job itself. The JSQ has been shown to be reliable and valid across various cultures and contexts, including the health sector.<sup>(22)</sup> However, the Job Satisfaction Questionnaire S20/23 deserves special attention in this context. Unlike the other scales mentioned, the S20/23<sup>(23)</sup> was developed specifically to reflect the cultural and organizational aspects of the Spanish context, allowing a more accurate measurement of job satisfaction in that particular context. It has four dimensions: a) relationship with supervision, referring to nursing professionals' perception and satisfaction with the supervision they receive from their superiors. The quality of supervision can significantly impact job satisfaction and the performance of nursing professionals.<sup>(24)</sup> Effective and supportive supervision can promote a positive work environment, increase motivation, and improve communication and work relationships.<sup>(24,25)</sup> b) physical work space, referring to the physical environment in which nursing professionals perform their work. The physical work environment can influence job satisfaction and the well-being of nursing professionals.<sup>(26)</sup> An adequate physical environment, including aspects such as ventilation, lighting, cleanliness, and safety, can contribute to higher job satisfaction and improved care quality.<sup>(26,27)</sup> c) professional fulfillment, referring to the satisfaction and gratification nursing professionals experience in relation to their work and professional development. Professional fulfillment is related to the perception of having opportunities for growth, development, and

recognition at work.<sup>(28)</sup> When nursing professionals feel that their work is valuable, challenging, and allows them to utilize their skills and knowledge, they are more likely to experience a higher level of job.<sup>(26,29)</sup> d) opportunities offered by the job, referring to the opportunities that nursing professionals have to participate in decision-making and access training and development opportunities. Participation in job-related decisions and the availability of training opportunities can contribute to greater job satisfaction by providing a sense of autonomy, control, and professional growth.<sup>(26,29)</sup>

The S20/23 scale has been used and adapted in various cultures, but its adaptation and validation in the Peruvian context have not been exhaustive. Cultural adaptation of measurement scales is a critical step to ensure that they are relevant and valid in new cultural and linguistic contexts.<sup>(30)</sup> Moreover, although there is considerable research on job satisfaction among nurses, there is a lack of studies focusing specifically on nurses in Peru. Therefore, this study aims to investigate the metric properties of the S20/23 job satisfaction scale in a sample of Peruvian nurses.

## METHODOLOGY

### Design and Participants

A validation study was carried out.<sup>(31)</sup> A non-probabilistic sampling method was used for data collection. The sample size was determined using an electronic calculator<sup>(32)</sup>, considering the number of observed and latent variables in the model, anticipated effect size ( $\lambda = 0,2$ ), desired statistical significance ( $\alpha = 0,05$ ), and statistical power level ( $1 - \beta = 0,80$ ), recommending a minimum sample of 200 participants. A total of 325 nurses from two hospitals in Lima, Peru, participated. Regarding gender, females were the majority, representing 88,9 % of the sample, while males comprised 11,1 %. In terms of marital status, the highest frequency was single, at 48,3 %, followed by married at 38,8 %. Cohabiting and widowed had lower frequencies, at 8,3 % and 4,6 %, respectively. In terms of employment status, the most frequent category was permanent staff, at 68,0 %, followed by contract at 26,8 %. Fixed-term and outsourcing had lower frequencies, at 4,0 % and 1,2 %, respectively. These results highlight the predominance of women, the prevalence of single participants, and the use of contracts and appointments in the studied sample. (table 1).

Characteristics		n	%
Gender	Female	289	88,9
	Male	36	11,1
Marital Status	Married	126	38,8
	Single	157	48,3
	Cohabiting	27	8,3
	Widowed	15	4,6
Employment Status	Outsourced	4	1,2
	Contract	87	26,8
	Fixed-term	13	4,0
	Permanent	221	68,0

### Instrument

Job Satisfaction. The Chilean version of the S20/23 Job Satisfaction Scale<sup>(23)</sup> was used. It consists of 23 items and has 4 dimensions: 1) relationship with supervision, 2) physical work space, 3) professional fulfillment, 4) training and decision-making opportunities. It offers 7 response alternatives: (1) Very Dissatisfied, (2) Quite Dissatisfied, (3) Somewhat Dissatisfied, (4) Indifferent, (5) Somewhat Satisfied, (6) Quite Satisfied, (7) Very Satisfied. The scale demonstrated adequate reliability with Cronbach's Alpha of 0,92, 0,86, 0,78, and 0,73 for the four factors: a) relationship with supervision, b) physical work space, c) professional fulfillment, and d) opportunities offered by the job for both training and decision-making.

### Procedure

The research protocol received approval from the Ethics Committee of a hospital, under reference number CE-DGI-030. Contact was established with administrators of two hospitals in Lima, Peru. Participants were assured the option to withdraw from the study at any time if they wished. The study was conducted in accordance with the ethical standards established in the Declaration of Helsinki, which include protecting privacy and confidentiality of personal information, and minimizing any impact on the physical, mental, and social health of the participants.

## Data analysis

A descriptive analysis of the scale was conducted using various statistics, such as mean, standard deviation, skewness, kurtosis, and corrected inter-test correlation. Skewness (g1) and kurtosis (g2) values within the  $\pm 1,5$  range were considered appropriate.<sup>(33)</sup> Additionally, corrected item-test correlation analysis was used to eliminate items with a  $r(i\text{-}tc)$  value of 0,2 or less. (Kline, 2016)

To confirm the four-dimensional structure, a confirmatory factor analysis (CFA) was performed using the MLR estimator, suitable for numerical variables and robust against deviations from normality in inference inferencia.<sup>(34)</sup> Various fit indices were used, such as the Confirmatory Fit Index (CFI) and the Tucker-Lewis Index (TLI), where values of 0,90 or higher indicate good fit.<sup>(35)</sup> The Root Mean Square Error of Approximation (RMSEA) and the Standardized Root Mean Square Residual (SRMSR), where values of 0,08 or lower indicate good fit, were also considered.<sup>(36)</sup> Additionally, factor loadings ( $\lambda$ ) greater than 0,70 were considered appropriate. In terms of reliability, Cronbach's  $\alpha$  coefficient and McDonald's  $\omega$  coefficient were calculated.<sup>(37)</sup> Values higher than 0,70 were expected to indicate adequate reliability.<sup>(38)</sup> Statistical analysis was performed using the R software version 4.1.1., a freely available tool (R Foundation for Statistical Computing, Vienna, Austria; <http://www.R-project.org>).

## RESULTS

### Descriptive statistics

In table 2, results indicate that the scale has a higher mean in item "sl15" ( $M = 5,32$ ) and a lower mean in items "sl6" and "sl13" ( $M = 3,84$  in both cases). Skewness (g1) varies between -1,35 and -0,23, suggesting a slight negative skewness in the distribution of responses. Kurtosis (g2) falls within the acceptable range of -1,5 to +1,5, fluctuating between -1,03 and 1,78, indicating a relatively normal distribution of responses. Regarding item-total correlations ( $r.cor$ ), all items show correlations above the acceptable limit of 0,30, indicating an adequate relation with the general dimension of job satisfaction. Furthermore, the internal consistency of the scale, measured by Cronbach's alpha ( $\alpha$ ), is high ( $\alpha = 0,95$ ), indicating good reliability of the items.

Table 2. Descriptive statistics and reliability

Item	M	sd	g1	g2	r.cor	$\alpha$
sl1	4,73	1,39	-0,78	0,61	0,42	0,95
sl2	4,42	1,51	-0,65	-0,46	0,74	0,95
sl3	4,37	1,47	-0,56	-0,42	0,72	0,95
sl4	4,77	1,41	-0,86	0,37	0,61	0,95
sl5	4,65	1,3	-0,93	0,69	0,69	0,95
sl6	3,84	1,48	-0,23	-0,71	0,68	0,95
sl7	4,63	1,4	-0,87	0,13	0,70	0,95
sl8	4,9	1,25	-1,08	1,25	0,61	0,95
sl9	4,07	1,57	-0,38	-0,86	0,77	0,95
sl10	4,01	1,69	-0,31	-0,99	0,69	0,95
sl11	4,25	1,61	-0,47	-0,84	0,68	0,95
sl12	3,88	1,64	-0,33	-1,03	0,71	0,95
sl13	3,83	1,64	-0,25	-1,05	0,72	0,95
sl14	4,38	1,55	-0,65	-0,54	0,66	0,95
sl15	5,32	1,35	-1,35	1,78	0,49	0,95
sl16	4,96	1,42	-1,09	0,84	0,71	0,95
sl17	4,81	1,48	-0,92	0,13	0,70	0,95
sl18	4,85	1,28	-0,86	0,81	0,68	0,95
sl19	4,03	1,78	-0,49	-1,10	0,58	0,95
sl20	3,83	1,62	-0,35	-0,84	0,68	0,95
sl21	4,07	1,64	-0,39	-0,77	0,74	0,95
sl22	4,22	1,50	-0,65	-0,34	0,73	0,95
sl23	3,82	1,54	-0,42	-0,85	0,75	0,95

Note: M = Mean, SD = Standard Deviation, g1 = Skewness, g2 = Kurtosis.

### Confirmatory factor analysis and reliability

The Confirmatory Factor Analysis (CFA) was conducted based on the hypothesized four-dimensional model. The first model showed inadequate fit according to the fit indices  $\chi^2 = 835,940$ ,  $df = 224$ ,  $p < ,001$ ,  $CFI = 0,85$ ,  $TLI = 0,83$ ,  $RMSEA = 0,09$  (90 % CI 0,09 - 0,10),  $SRMR = 0,07$ . However, the factor loadings ( $\lambda$ ) of items 1, 4, 8, 15, and 19 were below 0,70, indicating a weaker association with their respective dimensions. In the second model, items 1, 4, 8, 15, and 19 were excluded due to their factor loadings being less than 0,70. This model was considered acceptable:  $\chi^2 = 387,290$ ,  $df = 124$ ,  $p < ,001$ ,  $CFI = 0,92$ ,  $TLI = 0,90$ ,  $RMSEA = 0,08$  (90 % CI 0,07 - 0,09),  $SRMR = 0,05$ , and the factor loadings ( $\lambda$ ) were greater than 0,70, presenting an 18-item scale for the Peruvian version. Also, the reliability as measured by Cronbach's Alpha ( $\alpha$ ) and McDonald's Omega ( $\omega$ ) for all dimensions was acceptable.

Table 3. Confirmatory factor analysis

Items	Model 1				Model 2			
	F1( $\lambda$ )	F2( $\lambda$ )	F3( $\lambda$ )	F4( $\lambda$ )	F1( $\lambda$ )	F2( $\lambda$ )	F3( $\lambda$ )	F4( $\lambda$ )
sl1	0,47							
sl2	0,83				0,78			
sl3	0,83				0,75			
sl4	0,66							
sl5	0,76				0,70			
sl6	0,73				0,76			
sl7	0,77				0,74			
sl8	0,68							
sl9	0,73				0,79			
sl10		0,84				0,84		
sl11		0,85				0,85		
sl12		0,87				0,87		
sl13		0,89				0,89		
sl14		0,73				0,73		
sl15			0,68					
sl16			0,91				0,88	
sl17			0,84				0,86	
sl18			0,78				0,79	
sl19			0,48					
sl20				0,77				0,74
sl21				0,81				0,80
sl22				0,83				0,80
sl23				0,83				0,83
F1								
F2	0,67				0,72			
F3	0,77	0,62			0,78	0,63		
F4	0,84	0,72	0,73		0,93	0,74	0,75	
$\alpha$	0,90	0,92	0,88	0,88	0,90	0,92	0,88	0,88
$\omega$	0,91	0,92	0,85	0,88	0,87	0,92	0,88	0,84

Note: F1= relationship with supervision, F2= physical work space, F3= professional fulfillment, F4= training and decision-making opportunities offered by the job.

### DISCUSSION

Job satisfaction is a topic of great interest in organizational behavior research, especially in the context of healthcare professionals, such as nurses. There is evidence that job satisfaction can affect the quality of patient care and staff retention. However, in the case of nurses in Peru, there has been a lack of studies examining their job satisfaction specifically. Additionally, most existing research has utilized instruments developed in other cultural contexts, raising questions about their validity and reliability in the Peruvian context. The



present study aimed to evaluate the psychometric properties of the S20/23 job satisfaction scale in a sample of Peruvian nurses.

In the original study conducted by Martinez et al.,<sup>(23)</sup> four clear dimensions related to job satisfaction were identified, consistent with our study. However, when comparing our findings with the results of the Chilean adaptation, some evident differences emerge regarding factor loadings and the internal consistency of items. Various studies have highlighted the importance of adapting instruments to specific populations to ensure their validity.<sup>(39,40)</sup> Although the construct of "job satisfaction" is generalizable, the way it is experienced and expressed can vary according to cultural and contextual differences.

In the current study, a CFA was carried out hypothesizing a four-dimension model.<sup>(41)</sup> The results of the first model indicated an inadequate fit and factor loadings below 0,70 for certain items, pointing to a weak association with their respective dimensions. Improvement of the model was achieved by excluding items with low factor loadings, resulting in a second model with a better fit. Previous studies, such as the one conducted by Meliá and Peiró<sup>(41)</sup> on job satisfaction, and the study by Martinez et al.<sup>(23)</sup> in a nursing context, reveal consistencies and differences in methodological approaches and outcomes. Meliá and Peiró emphasized the need for a thorough interactive process for item selection, based on criteria of conceptual relevance, validity, and reliability, while Martinez et al. found through principal component analysis a factorial structure reflecting different aspects of job satisfaction. The elimination of items based on factor loadings allows instruments to be refined to more accurately reflect the factorial structure.

Reliability ensures that the scores obtained are consistent and precise over time and in different situations. Reliability can be assessed through various statistics, with Cronbach's alpha ( $\alpha$ ) and McDonald's omega ( $\omega$ ) being two of the most used. These metrics reflect the internal consistency of the items that make up each dimension of a measurement instrument. In this sense, Cronbach's alpha coefficients ranging between 0,88 and 0,92 and McDonald's omega coefficients ranging between 0,84 and 0,92 were obtained for the different dimensions evaluated. In previous results, such as the study by Meliá and Peiró,<sup>(41)</sup> where the reported Cronbach's alpha was 0,92, we observe a notable consistency in the high reliability of the instruments. Additionally, the factor range of this previous study, which ranges between 0,76 and 0,89, aligns with the findings of the present study, reinforcing the idea that the items selected for each dimension possess good internal coherence. On the other hand, the study conducted by Martinez et al.,<sup>(23)</sup> on job satisfaction in the nursing team, presented a Cronbach's alpha varying between 0,765 and 0,926, which also indicates good reliability, albeit with slightly greater variability in its dimensions.

### Implications

Firstly, the adaptation and ratification of the S20/23 scale within the Peruvian framework provides medical professionals with a reliable and relevant instrument for assessing job satisfaction among nurses. This aspect is crucial, as job satisfaction in the nursing field has been established as an essential element in staff preservation and in ensuring quality patient care. By utilizing an assessment tool specifically tailored to the Peruvian context, healthcare administrators can identify areas of dissatisfaction and formulate strategies focused on improving nurses' workplace well-being. Ultimately, this can lead to an elevation in patient care standards and a reduction in staff turnover rates.

Secondly, this study underscores the significance of certain dimensions of job satisfaction for Peruvian nursing staff, including relationships with supervisors, work environment conditions, professional development, and training opportunities. These findings have direct repercussions for both public policy decision-makers and healthcare service managers. It becomes imperative for policy makers and organizational leaders in the healthcare sector to recognize and prioritize these factors, undertaking initiatives that foster an optimal and rewarding work environment for nurses. This could translate into improvements in communication and relationships with supervisors, creation of workspaces that meet staff needs, enhancement of professional development opportunities, and promotion of an organizational culture that values, supports, and encourages continuous learning and growth for nurses.

The confirmation of the four-dimensional structure of the scale not only strengthens its theoretical foundation but also provides additional evidence of its validity and applicability in various cultural and work contexts. Similarly, the identification of specific dimensions of job satisfaction among Peruvian nurses enriches existing theories on the subject and sets a solid precedent for future research in this field. This has the potential to positively influence the management and administration of human resources in the healthcare sector.

### Limitations

It is important to acknowledge the limitations of this study and how they might have affected the results. A significant limitation is that the sample used in this study consisted solely of Peruvian nurses, limiting the generalizability of the findings to other populations or contexts. Future research would benefit from including more diverse samples encompassing different geographical regions, types of health institutions, and levels

of nursing experience. Another limitation is related to the use of a cross-sectional design in this study, which prevents establishing causal relationships between variables. Future research should employ longitudinal or experimental designs to examine causal relationships and the effect of interventions on nurses' job satisfaction. Finally, it is important to note that this study focused on the adaptation and validation of the job satisfaction scale in the Peruvian context but did not explore in detail the underlying causes of nurses' job satisfaction. Future research could investigate additional factors influencing job satisfaction, such as leadership, work-life balance, and professional growth opportunities. This would provide a more comprehensive understanding of the determinants of job satisfaction and help guide interventions and policies aimed at improving it.

## CONCLUSIONS

This study provides robust evidence on the validity and reliability of the Peruvian version of the 18-item job satisfaction scale. These findings may have important implications for the development of interventions aimed at improving job satisfaction and, ultimately, the quality of patient care and staff retention in the nursing context in Peru.

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