Artículos originales

Design of a scale to measure organizational climate in community primary care clinics.

Diseño de una escala para medir el clima laboral en clínicas comunitarias de atención primaria

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Fecha de envío: 16/06/2024
Fecha de aprobación: 25/10/2024

Abstract

Objective: To adapt a scale to assess community primary care clinic organizational climate.

Introduction: The combination of structural, organizational, and individual elements creates an organizational climate, which affects organizational and psychological processes and consequences. This is especially true in healthcare.

Method: 255 people participated from four California community clinic staff. Mostly, medical assistants, administrative workers, and patient service representatives. Exploratory and confirmatory factor analysis were used to examine construct validity. The detected components' internal consistency was estimated using Cronbach's alpha. The dimensions were used to compare the four clinics' scores.

Results: The scale is psychometrically sound enough to assess first-level community clinic work climates. Five work climate dimensions were identified: collaborative and goal-oriented work, clinical organization, job satisfaction, relationships with superiors, and work-home balance. Despite overall positive workplace environment ratings, nonparametric analyses of variance showed significant differences amongst clinics.

Keywords: Organizational climate, Health care, Job satisfaction, Scale, Organization

Resumen

Objetivo: Adaptar una escala para evaluar el clima organizacional de las clínicas comunitarias de atención primaria.

Introducción: La combinación de elementos estructurales, organizativos e individuales crea el clima organizativo, que afecta a los procesos y consecuencias organizativas y psicológicas. Esto es especialmente cierto en la atención sanitaria.

Método: Participaron 255 personas del personal de cuatro clínicas comunitarias de California. En su mayoría, asistentes médicos, trabajadores administrativos y representantes de atención al paciente. Se utilizaron análisis factoriales exploratorios y confirmatorios para examinar la validez de constructo. La consistencia interna de los componentes detectados se estimó mediante el alfa de Cronbach. Las dimensiones se utilizaron para comparar las puntuaciones de las cuatro clínicas.

Resultados: La escala es suficientemente sólida desde el punto de vista psicométrico para evaluar el clima laboral en clínicas comunitarias de primer nivel. Se identificaron cinco dimensiones del clima laboral: trabajo colaborativo y orientado a objetivos, organización clínica, satisfacción laboral, relaciones con los superiores y equilibrio entre trabajo y hogar. A pesar de que en general las valoraciones del clima laboral fueron positivas, los análisis no paramétricos de la varianza mostraron diferencias significativas entre las clínicas.

Palabras clave: clima organizacional, atención a la salud, satisfacción laboral.

Introduction

Patient care outcomes, including mortality and patient satisfaction, are linked to the structural and organizational aspects of the clinical and hospital work climate. (Flarey, 1993; Kutney-Lee et al., 2009; Aiken et al., 2012; Sanduvete-Chaves, 2018). Also, the work environment reflects an organization's features, which impact its members behavior (Ekvall, 1986; Arnaez, Aguayo and Ludeña, 1994).

The organizational climate is defined as employees' impressions and interpretations of workplace regulations, practices, processes, and attitudes. It is the result of the interaction between the individual and the organizational environment and influences organizational and psychological processes such as communication, decision-making, problem-solving, conflict resolution, learning, and motivation. As a result, it has an impact on the organization's efficiency and productivity, including its capacity for innovation, job satisfaction, and member well-being. (Ekvall, 1986; Schneider, Ehrhart and Macey, 2013; Bronkhorst, 2015)

Understanding the work climate is essential in all organizations, particularly in the healthcare sector, to identify factors that may affect the organization's performance and to provide timely and optimal care. (Benzer *et al.*, 2011; Hernández and Zárate, 2011)

It has been described that an appropriate organizational climate has an impact on patient happiness and health, with improved prevention activities and shorter waiting times for care, especially for those with comorbidities, at the primary level of care. (Benzer *et al.*, 2011; Roblin *et al.*, 2011; Nembhard *et al.*, 2015)

To improve, achieve, and fulfill the objectives of the services, it is crucial to measure the level of satisfaction of the professionals and their perceptions of the work climate. This measure will enable organizations to identify the factors that influence the work climate and job satisfaction. (García-Pozo, Moro-Tejedor and Medina-Torres, 2010; Kumra, T et al., 2020

The dimensions most frequently identified as components of organizational climate are working conditions, training, promotion, and professional development, recognition, compensation, hierarchical relationships, participation, organization and management of change, relationships with colleagues, internal communication, knowledge and objective identification, and management perception (Robles-García *et al.*, 2005).

The instruments used to assess organizational climate differ depending on how they are applied in specific settings, such as hospitals, primary care settings, medical or paramedical groups, and the relationship between these (Poghosyan, Nannini and Clarke, 2013). In a systematic review of measures of organizational climate in primary care, Using et al. (2021) identified eleven instruments for organizational climate. Conceptually and in terms of psychometric quality, there was great variation between the measures. Many studies were reported having limited or no psychometric data.

The objective of this study was to validate a scale for measuring the organizational climate of California's first-level care community clinics. A second objective was to obtain a baseline measurement to determine, through subsequent measurements, the impact of the professional integration of Mexican physicians on the work climate of these clinics. The measure is an adaptation of a scale previously developed to measure this construct in hemodialysis units in Mexico (Rojas Russell *et al.*, 2011).

Methods

An instrumental study was conducted with health and administrative personnel from four community

clinics in central California. Participants had to have worked for at least six months in the clinic.

Instruments

The scale is based on a Mexican validated measure for assessing the work climate in hemodialysis units (Rojas Russell *et al.*, 2011). Items were taken from six of the fifteen dimensions in the original version of the instrument: relationships with superiors, workplace environment, job satisfaction, efficiency, communication and support, and flexibility. The version utilized in this study consisted of forty-two items, divided into two parts. The first contained nine statements with eleven response options on an ordinal scale ranging from 0 to 10, with zero meaning "completely disagree" and ten meaning "completely agree." The questions examine people's impressions of the clinic's organization and collaboration opportunities. The second section consisted of thirty-one questions about job satisfaction and communication with coworkers and superiors. The response structure is Liker-type, with four response options ranging from 1 to 4, with one indicating "completely disagree" and four indicating "absolutely agree."

Procedure

The scale was administered in group sessions at each of the participating clinics using an electronic tablet. The average time taken to respond was 15 minutes. A properly trained collaborator of the study answered the doubts of the respondents.

All participants agreed to participate voluntarily through informed consent. The study was approved by the Ethics and Research Committee of the Faculty of Medicine of the National Autonomous University of Mexico (official letter FM/DI/054/2019).

Data analysis

To identify potential bias in the responses, both sections of the instrument were subjected to a discrimination analysis, which compared each item based on the sum of all the items' global high and low scores. To classify the scores as high or low, the median of the totals was used as a criterion. Items that did not discriminate were removed. The participants' sample was randomly divided into two equal parts to conduct an exploratory factor analysis (EFA) with one and a confirmatory factor analysis (CFA) with the other. The Kaiser-Meyer-Olkin (KMO) sample adequacy measure and the Bartlett sphericity test were used to assess the suitability of each EFA. After identifying the underlying dimensions in each section of the questionnaire, an internal consistency analysis was performed using Cronbach's alpha coefficient. The dimensions of both sections were then correlated using Spearman's correlation analysis, and the scores of each clinic were compared using non-parametric analysis of variance, correcting for ties with post-hoc comparisons, and adjusting p-values. Stata v. 16 was used for all analyses. (College Station, 2019)

Table 2

Structure, content, and factor loads of the first section of the questionnaire

Item		Factor load
	Collaborative and goal-oriented work	
2	When there are situations that require problem solving and joint action from staff, is it easy for you to work collaboratively?	0.65
3	When staff collaboration is required in your clinic, are there clear and useful processes in the organization that make it easier for you to work that way?	0.87
4	Does the staff relate their work to the strategies, goals, and outcomes of the clinic, that is, does each of them understand how they contribute to its achievement?	0.86
5	In general, according to you, do the goals and strategies of the clinic respond to the expectations of the patients?	0.63
6	Do you feel that the rewards or recognition you receive for your work are consistent with the expectations that have been stated at the health clinic?	0.50
9	In general, are the clinic staff working to their full potential or could they do more?	0.71
	Clinic Organization	
7	The way the clinic is organized How much does it facilitate or prevent you from carrying out your work properly?	0.79
8	The way the clinic is organized How much does it facilitate or prevent the staff from solving problems, being creative or innovative?	0-84

Results

A total of 255 individuals were recruited. 244 fulfilled the inclusion criteria. Table 1 shows the distribution by position and seniority for each clinic. The average seniority was six years. Most participants were medical assistants and, to a lesser extent, administrative staff, and patient service representatives, although 94% were concentrated in two of the clinics. Only one of the clinics housed 93 percent of the nursing staff. Sixteen people did not indicate their job position. Table1

Table 1

Seniority and job position by *clinic*

Variable	Clinic 1	2	3	4	Total
N (%)	54 (22)	20 (8)	71 (29)	99 (41)	244 (100)
Seniority [y] x̄ (SD)	5.9 (8.1)	7.3 (9.6)	6.5 (6.6)	5.5 (4.6)	5.9 (6.5)
Position n (%)					
Medical Assistant	36 (39)	1 (1)	21 (22)	35 (38)	93 (41)
PSR	1 (3)	1 (3)	20 (55)	14 (39)	36 (16)
Nursing	0 (0)	0 (0)	1 (7)	14 (93)	15 (7)
Doctor or dentist	6 (26)	4 (17)	4 (17)	9 (39)	23 (10)
Administrative staff	8 (20)	7 (18)	5 (12)	20 (50)	40 (17)
Other	0 (0)	2 (10)	15 (71)	4 (19)	21 (9)
Total	**51 (22)**	**15 (7)**	**66 (29)**	**96 (42)**	**228 (100)**

Note. PSR: Patient Service Representative

All the items in the first part of the scale (clinic organization and collaboration) discriminated significantly. Also, the sample adequacy measure (KMO = 0.862) and the sphericity test (chi-square = 557.19; p <.00) indicated the suitability of the EFA for this section. EFA identified two factors that accounted for 100% of the variance in the scale. The first factor included six items, whereas the second had two. The factor loadings for each item are shown in Table 2. Item number one did not load on any of the factors; thus, it was eliminated. The collaborative and goal-oriented work dimension had an internal consistency coefficient of 0.90, while the coefficient for the clinical organization dimension was 0.87. Table 2

The CFA replicated exactly the two-factor structure found in the AFE. The goodness-of-fit indices of the model were adequate: chi-square = 23.85 (p = 0.124); Root mean squared error of approximation (RMSEA) = 0.059; Comparative fit index (CFI) = 0.985; Tucker-Lewis Index (TLI) = 0.976; Standardized root mean squared residual (SRMSR) = 0.057. The internal consistency coefficients in this half of the sample were 0.89 and 0.86 for the scale of collaborative work and by objectives, and organization of the clinic, respectively.

Table *3*

Structure, content, and factor loads of the second section of the questionnaire

Item		Factor load
	Job satisfaction	
1	I am satisfied with the physical conditions of my work	0.60
2	I like the work I do	0.79
4	I agree with the tasks assigned to me	0.63
5	The resources at my disposal to do my job are good quality	0.62
6	I have on time the material I need to do my job	0.54
8	I am happy with the training opportunities offered to me	0.54
11	My job promotes more efficient ways of working	0.50
12	I have good health and safety conditions to do my job	0.75
14	I receive adequate information of the occupational hazards I am exposed to	0.73
15	I am aware of my rights as a worker	0.71
16	My job is stable	0.75
17	I am satisfied with my work Schedule and/or shift	0.64
18	I am satisfied with my vacation and days off	0.62
19	The training I receive allows me to grow up as a professional	0.54
20	I have easy access to reference materials and current technical manuals when I need them	0.69
21	Outside my job, I enjoy quiet family moments	0.73
22	When I have a family emergency, I get support at work	0.61
27	I know what is expected of me at work	0.81
30	I feel good about the way I am treated by my supervisors	0.68
	Relationship with superiors and communication	
3	I am satisfied with the way I am treated by my supervisors	0.74
9	My supervisor provides me with guidance to improve my work	0.64
10	My supervisor pays attention to my suggestions and comments	0.73
13	As employees, we are kept informed about the issues that affect our work	0.62
26	In my job there is communication between the different levels	0.52
28	I have enough communication to do my job well	0.45
29	I feel good about the way I am treated by my supervisors	0.77
	Work-home balance	
23	My work activities allow me to participate in taking care of my family	0.62
24	My working schedule allows me to participate in domestic activities	0.77
25	My job allows me to do other activities outside my work schedule	0.74

Because only 179 participants completed the second section of the questionnaire completely, only the exploratory factor analysis was conducted. Except for item 7, all the items in this second section of the scale discriminated significantly, so it was omitted

from subsequent analyses. The sample adequacy measure (KMO = 0.97) and sphericity test (chi-

square = 7126.55; p 0.00) indicated that the EFA for this second section was adequate.

The rotated solution of the EFA found three components (Table 3). These three factors accounted for 86.7% of the variance in the responses. Since item 30 did not load on any of the factors, it was also removed from the scale. The first dimension included nineteen items related to job satisfaction; the second one included seven items relating to relationships and communication with superiors and in the workplace environment; and the third factor included three items relating to work-life balance. The three factors had an internal consistency of 0.98, 0.97, and 0.95, respectively.

Table 4 ddisplays the descriptive statistics and correlations of the five subscales. In general, the overall ratings indicate a tendency toward favorable work climate perceptions. Likewise, the correlation coefficients show the relative independence of the two sets of subscales and significant correlations between the dimensions of each of them. All correlations were in the predicted direction.

Nonparametric analyses of variance revealed significant differences in both sets of dimensions between clinics. Clinic number four had the highest scores in all five dimensions, with significant differences between it and clinics one and three in post-hoc analyses (Table 5). To better appreciate the differences between clinics and make all dimensions comparable, all scores were standardized to t-scores, and 95% confidence intervals were estimated (Figure 1). Homogeneity can be noticed in the perceptions of clinic number four in comparison to the other clinics, as well as a more favorable assessment of collaborative work and clinic organization in clinic number one. Table 5 and Figure 1

Discussion

The impact of the organizational environment on each employee, their behavior, and their feelings is crucial. The organization's members evaluate the situation, form their own conclusions, and act in line with their views. As a result, this environment might

Table 5

Non-parametric comparison of work climate dimensions by clinic

Dimension	Median	IQR	Mean Rank	H	df	p
Collaborative and goal-oriented work				15.8	3	0.001
Clinic 1	57	10	124.93†			
Clinic 2	55	23	93.41			
Clinic 3	51.5	20	91.89†,‡			
Clinic 4	59	11	129.26‡			
Clinic organization				9.2	3	0.026
Clinic 1	18	6	121.88†			
Clinic 2	12	4	73.33†			
Clinic 3	16	7	98.97			
Clinic 4	18	9	112.53			
Job satisfaction				20.4	3	0.000
Clinic 1	78	35	76.6‡			
Clinic 2	76	15	73.75			
Clinic 3	78	21	82.42†			
Clinic 4	87.5	16.5	115.34†,‡			
Relationship with superiors				26.7	3	0.000
Clinic 1	28	11	94.23†			
Clinic 2	28	6	119.9			
Clinic 3	27	10	81.94‡			
Clinic 4	31	6	131.08†,‡			
Work-home balance				27.3	3	0.000
Clinic 1	12	4	97.22†			
Clinic 2	12	0	107.1			
Clinic 3	12	3	90.92‡			
Clinic 4	14	3	139.74†,‡			

Note. Mean ranks that share superscripts are significantly different from each other. IQR: Interquartile

Table 4.

Measn, standard deviations and correlations of the dimensions identified

Dimensions	M	SD	Min/max	1	2	3	4	5
1. Collaborative and goal-oriented work	54.09	11.94	6/66	--				
2. Clinic organization	16.22	5.52	2/22	0.57*	--			
3. Job satisfaction	77.65	17.07	38/95	0.38*	0.21	--		
4. Relationship with superiors	27.88	6.40	14/35	0.37*	0.21	0.91*	--	
5. Work-home balance	11.86	2.78	6/15	0.31*	0.17	0.86*	0.84*	--

Note: *p < .01

influence attitudes. (Arnaez, Aguayo and Ludeña, 1994; García-Pozo, Moro-Tejedor and Medina-Torres, 2010; Juárez-Adauta, 2012)

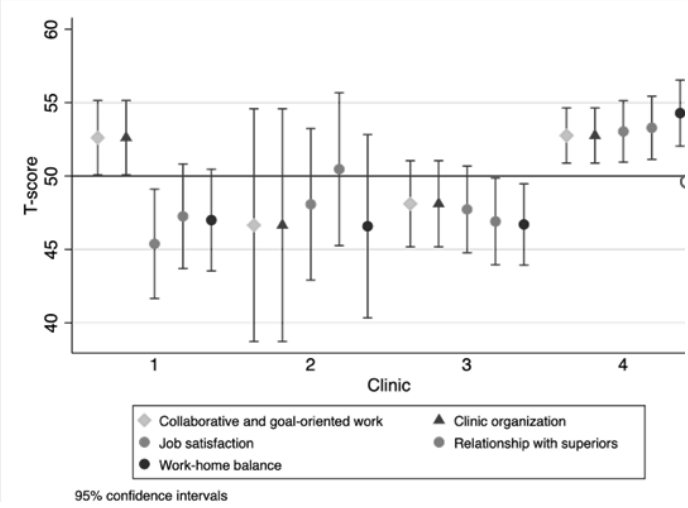
Knowledge about an organization's work environment as viewed by its employees is a helpful tool for those responsible for fostering employee motivation and satisfaction. (Arnaez, Aguayo and

Ludeña, 1994; Juárez-Adauta, 2012; HO, L.-H, 2021) Better work performance and higher commitment to the organization are linked to this perception of the organization and its leadership.(Lazcano *et al.*, no date) In the field of health care, a favorable organizational climate enhances worker satisfaction and, as a result, user satisfaction. (Bullich-Marín *et al.*, no date; Muñoz-Seco *et al.*, no date)

The scale employed in this study was adapted to identify five aspects of the organizational environment at first-level community health clinics in California's central valley. These dimensions, in general, match to those described in the instrument's original form Rojas Russell et al., 2011, with good reliability coefficients and significant relationships in the theoretically expected directions, showing that the instrument possesses adequate construct validity. Additionally, it may detect substantial changes in the dimensions' ratings between assessed clinics, enhancing their validity. These factors enable a broad view of the clinics' perceived work environment. As such, it is a good instrument to measure the quality of the work environment at this type of organization.

Figure 1

T-scores of work climate dimensions by clinic.



It is necessary to note, however, that owing to an error in the programming of the capture tablets, data such as the participants' age and gender could not be identified. Similarly, the disparity in participant and position numbers between clinics precluded a more exact comparison of these variables. Another limitation was the low response rate for the second section of the instrument, which made it difficult to validate the factorial structure discovered in the EFA. Because this is a baseline assessment of the work environment at these clinics, these inadequacies will be corrected in subsequent testing.

In conclusion, the adapted scale has appropriate psychometric qualities for use in first-level community clinics as a reliable assessment of the organizational environment. This measurement was utilized as a baseline to conduct follow-up research. It will demonstrate how the organizational climate evolved with the inclusion of Mexican physicians to clinical treatment for migrants in the areas served by these community clinics.

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Declaración de conflicto de intereses

Los autores de este artículo expresan que no tuvieron ningún conflicto de intereses durante la preparación de este documento ni para su publicación.