Research Article

Determinants of organizational learning in institutions of health of Mexico

Abstract

Objective: The purpose of the study was to determine the elements of human, structural and capital That Contribute to organizational learning in health Institutions.

Method: An explanatory descriptive study. The sample was 1074 nurses from seven hospitals in the State of Nuevo Leon, Mexico. An identification data and the questionnaire of human, structural and social capital, designed for the present study, were applied. It was approved by the Committees of Ethics and Research of health institutions and it was requested the authorization through the signing of informed consent. A descriptive and inferential analysis was performed through the multiple linear regression.

Results: The dimension was founded with lowest corresponds score to the capital (M=64.03, SD=19.90), followed by Human Capital (M=65.63, SD=13.51), and structural Capital (M=70.08, SD=25.80). Organizational learning reported a mean of 66 (SD=21.59) of a maximum score of 100. Organizational learning was determined by structural capital, by job satisfaction (the element of human capital) and by trust and shared vision, both elements of social capital. These variables explain 56% of the variance (p=.0001).

Conclusion: The satisfaction at work, resources structure (technology, information systems, care protocols), trust and shared vision are aspects That must be Strengthened health Within Institutions Because of Their impact on organizational learning.

Keywords: health manpower, job satisfaction, technology, social capital, learning, knowledge management

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Introduction

The current contexts where nursing practice is developed require knowledge management for greater efficiency in professional performance.[1] Since the 1980s, knowledge management has been promoted in the practice of nursing care.[2] Organizational learning is the main tool of knowledge management; Which involves the application of nursing staff knowledge (human capital) to the processes established in the health institution, considering the technology, information systems, internal communication and standardized processes (structural capital) that the institution has; as well as social interaction, trust and shared vision (social capital) of nurses.[3,4]

Fernández[2] states that organizational learning implies the ability to perform a process that transforms information into knowledge. Therefore, it is required that nursing administrators implement strategies to ensure organizational learning in their staff, both individually and as a group, to ensure quality care. Promoting organizational learning is not an easy task, there are factors of the individual and of the organizational context that affect or favor it. On the one hand, knowledge has three fundamental characteristics:

i. It is personal, because it originates and resides in people, who assimilate it as a result of their own experience.

ii. Its use can be repeated without knowledge being "consumed" as it happens with other physical goods.

iii. It serves as a guide for the action of the people, in the sense of deciding what to do at any moment, on the other hand, the Staff decides whether to apply their knowledge.[3–5]

It is reported that in order to strengthen human capital, involvement in research, organizational commitment, job satisfaction and shared knowledge are elementary. In addition, it influences the context as the structural capital that corresponds to the use of technology, information systems, internal communication and the standardized processes in the attention; As well as social capital integrated by social interaction, trust and shared vision.[6–9]

In health institutions, organizational learning is the result of adequate knowledge management. It is a priority to show that staff apply, share and create knowledge in a collective and systematic way, providing a value for the organization, for people and for society. This will allow an explicit knowledge to be available, making it more accessible from a functional, physical and intellectual point of view.[5] It is intended that the staff apply the knowledge generated to their daily practice converting it into a capacity for action and improving their professional performance.[8] As can be observed, organizational learning as a result of knowledge management determines the success of hospital organizations for the professional performance of their human capital.

The purpose of the study was to determine the elements of human, structural and social capital that contribute to the organizational learning of public and private sector health institutions. The results will provide information that contributes to the development of

effective interventions for the management of knowledge in health institutions.

Methods

Explanatory descriptive study

The population was nurses from seven public and private health institutions in the State of Nuevo León, Mexico. It included personnel with a level of general nursing training to postgraduate assigned to the area of care, teaching and management. Staff that during the data collection period were found on vacation or disabled was excluded. The sampling was non-probabilistic, the participating institutions were visited and the census of the nursing staff working in the different shifts, by areas/services was requested and accordingly, staff were contacted and invited to participate; It should be noted that all those who accepted were included. The final sample was composed of 1074 nurses proportionally distributed among the seven institutions.

To profile the characteristics of the study population, a data card was applied, which includes information related to gender, age, marital status, educational level, shift, seniority, working conditions, among others. To measure the elements of human, structural and social capital that contribute to organizational learning, the human, structural and social nursing questionnaire was used. This instrument was designed for the present study because it was not found a specific instrument to measure the variables. It is important to note that an exhaustive literature search was conducted to identify the instruments with which the study variables and their validity tests were measured; After this, an instrument was developed according to the study objective, this process was carried out through eight phases: Literature review, Selection of reagents that contribute significantly to the study variables, Revision of the reagents by experts (six experts participated in The scope of health management), Scale integration (50 reagents were selected according to the weighting of the experts), Process of translation and retranslation of the instrument (two translations from English to Spanish, a Spanish version was defined with Support of translators and that version was translated into English and compared with the original version, taking care that it did not lose its essence), Pilot test (pilot test was conducted with 50 participants), Adjustments to the instrument according to the results of the pilot test (Only words that were not clear for the participants were modified) and Final design of a self-applying instrument integrated by 50 reagents divided into four subscales.

The first subscale corresponds to human capital, including reagent 1 to 30, covering aspects related to research involvement,[6] organizational commitment,[7] job satisfaction[10] and knowledge sharing[8] The second measures structural capital contains four reagents from 31 to 34, including aspects related to the use of new technologies, care protocols, information systems and internal media.[11,12] The third subscale measures social capital, includes reagent 35 to 44, addresses information on social interaction, trust and shared vision[8] and the last subscale includes the organizational learning reactants from 45 to 52.[12–14] The response options for all subscales are from 1 to 6 where one indicates absolute disagreement and six totally agree. Internal consistency was verified through Cronbach's Alpha, the subscale of human capital reported a value of 0.86, structural capital of 0.90, social capital of 0.87, and organizational learning of 0.84.

The data collection was supported by four nursing professionals who received previous training. Subsequently, a fieldwork plan was developed that had two options for data collection: This plan was presented to the managers of the participating institutions so that they chose the option that suited their needs. Some institutions chose to allocate an area for the survey to be applied at the exit of the workers or during the shift: In others we went directly to the areas in the different shifts and services for the application of the instruments. The study was carried out in accordance with the Helsinki Declaration.[9] It was approved by the Ethics and Research Committees of health institutions, authorization was requested from the participants through the signing of informed consent and at all times anonymity, confidentiality, privacy, and rights were respected at all times. The data were processed electronically in the statistical package SPSS version 20. For the analysis of the information we used descriptive statistics as measures of central tendency and variability, as well as frequencies and percentages. The dimensions of the instrument were grouped into indexes with values from 0 to 100, where the higher the score the greater the presence of the study variable. Multiple linear regression analysis was applied to determine the main variables that contribute significantly to organizational learning.

Results

The average age of nurses was 34.22 years (SD=10.74), females predominated with 81.8% compared to the marital status excels married 47%, followed by bachelor with 41.6%. In terms of the educational level and the category assigned in the institution, the general nurse stands out, followed by a Bachelor of Nursing. With respect to the area in which it is important to highlight the assistance, a small proportion indicated teaching, management and directives activities Table 1.

Regarding professional experience, the average stood at 12.94 years *(SD*=9.74). The years of work in the hospital stood at 8.90 years *(SD*=9.20), while years of work in the current service at 6.02 *(SD*=6.92). Respect to human capital in relation to involvement in research, nursing staff noted that requires training for research development (Mean=4.82, *SD*=1.52). As for the organizational commitment, the main strengths correspond to the perception of staff to work in the institution represents a pride (Mean=5.52, *SD*=1.04) and are willing to make an extra effort to keep the development of the hospital (average=5.02, *SD*=1.29).

As for job satisfaction, the main strengths correspond to perceive that the work is done is very important (average=5.61, *SD*=0.94), the staff will mutually support (Mean=4.74, *SD*=1.49) and considers that their work is recognized by the relatives of the patients (mean=4.65, *SD*=1.44). However, they perceived low satisfaction with the current salary (average=3.32, *SD*=1.83), with its involvement in decision-making (average=3.44, *SD*=1.69), require greater opportunities to participate in decision-making (average =3.51, *SD*=1.70) and more time caring for their patients (mean=4.55, *SD*=1.50). In relation to sharing knowledge, participants noted that voluntarily share their knowledge and experience with other staff (average=4.61, *SD*=1.36). Also, share ideas and opinions on the extent possible (Mean=4.48, *SD*=1.34).

The analysis of structural capital made it possible to identify that nurses qualify with values greater than four the aspects included within this element, indicating that the staff tends to agree that the organization in which they work constantly introduces new technologies And protocols that favor the healthcare processes. Likewise, they consider that information systems and the internal

media contribute to the quality of care. As for the elements of capital low social interaction (Mean=3.36, *SD*=1.65) was found. However, perceived trust in nurses (average=4.36, *SD*=1.48) and a shared vision (Mean=4.46, *SD*=1.52).

Table 1 Employee characteristics of nurses

Characteristics	F	%
Maximum educational level		
Nurse (o) General	440	41
Post basic specialty	140	13
Bachelor's degree in nursing	321	29.9
Bachelor of science in nursing with specialty	132	12.3
Postgraduate (Master)	41	3.8
Category		
Nursing technician	51	4.7
General nurse	643	59.9
Nurse specialist	119	11.1
Bachelor's degree in nursing	139	12.9
Floor manager	64	6
Supervisor	3. 4	3.2
Head of teaching	6	0.6
Coordinator	eleven	1
Director (a) or nursing manager	6	0.6
I do not answer	1	0.1
Scope in which it performs		
Home	933	86.9
Teaching	10	0.9
Management - Management	115	10.7
Assistance and teaching	4	0.4
Assistance and management - Address	10	0.9
Teaching and management - Address	2	0.2

Source: Certificate of personal data *n*=1074

The analysis of organizational learning made it possible to identify that nurses qualify with values greater than four the aspects considered within this element, indicating that the staff tends to agree that there is an organizational learning, they consider that it is available indicators that provide information necessary (Mean=4.56, *SD*=1.42) when work practices are discovered, discussed possible implementation (Mean=4.55, *SD*=1.46) and have effective indicators and reporting results that support decision decisions (Mean=4.53, *SD*=1.49).

Table 2 presents the indexes of human, structural, social and organizational learning (values from 0 to 100). The highest means are structural capital, followed by organizational learning, human capital and social capital. In human capital the highest means correspond to organizational commitment, followed by shared knowledge and in terms of social capital predominate with similar means shared vision and trust.

Table 2 Index of human, structural, social and organizational learning

Indexes	M	Mdn	From	95% CI	
				Lower limit	Upper limit
Human capital	65.63	66.20	13.51	64.83	66.44
Involvement in research or n	59. 40	60	18.07	58.32	60.48
Organizational commitment	76.12	81.66	22.60	74.77	77.48
Satisfaction at work or n	62.47	62.85	14.63	61.60	63.35
Share knowledge	71.87	73.33	23.85	70.44	73.30
Structural capital	70.08	75	25.80	68.53	71.62
Social capital	64.03	66	19.90	62.83	65.22
Social interaction or n	47.71	50	27.35	46.08	49.35
Trust	68.04	70	24.76	66.56	69.53
Vision or shared n	68.17	70	25.87	66.62	69.71
Organizational Learning	66.10	68.57	21.59	64.81	67.40

Source: Questionnaire human capital, structural and social *n*=1074

Table 3 shows that organizational learning is determined by structural capital, by job satisfaction (the element of human capital) and by trust and shared vision, both elements of social capital. These variables explain 56% of the variance (p=.0001).

Table 3 Determinants of organizational learning

Determinants	B	Beta standardized	T	P
Constant	11.07	-	5.29	.001
Job satisfaction	.17	.11	4.46	.001
Structural capital	.37	.44	18.18	.001
Trust	.08	.10	3.24	.001
Shared Vision	.18	.21	6.54	.001

R^2=0.56 Standard error=14.36 *n*=1074

F=223.29 p=.001

Discussion

The results of the study allowed identifying the elements of human, structural and social capital that contribute to organizational learning. It was found that the dimension with the lowest score corresponds to social capital, followed by human and structural capital. The finding of lower score in social capital is an area of opportunity identified in the health institutions where the study was conducted. This aspect is fundamental for organizational learning. Nonaka et al.[5] affirm that the socialization of knowledge is elementary, requiring all staff to share knowledge for better professional performance. In relation to human and structural capital, it is recommended that nurses implement strategies to maintain or improve these elementary aspects for the goals proposed by the organization; It is required that the professional

performance of human capital is based on knowledge that allows a better decision-making to provide quality care to their patients,[3] it is also imperative that the organization facilitate the processes and means required to support compliance with human capital activities.[6]

The analysis of each of the elements of human, structural and social capital showed that the main areas of opportunity correspond to human capital, specifically to research involvement and job satisfaction. The finding of involvement in the research is similar to that reported in another study[15] which has as its main priority increased competence of staff in health research. Therefore, it is recommended that nursing administrators implement training programs to strengthen this aspect.

Regarding job satisfaction, the literature reports that it is an elementary aspect and recommends that nursing administrators conduct a management aimed at increasing work satisfaction through different strategies such as valuing the nursing team through dialogue, recognition, respect, Incentives, economic stimulus, continuing education programs with a focus on personal, professional development, among others.[16] It is important to review the nurse-patient indicator because the staff stated that it requires more time for the direct care of their patients; It is also important to favor the participation of nursing staff in decision making, which facilitates greater autonomy in the daily work of the staff; Finally, it is recommended to revise the salary tabulators to propose increases for the nursing staff in order to increase their satisfaction with the work.

Regarding the organizational learning was a low result, this finding contradicts what was reported in another study.[17] where it was found as a strength of the institution. Organizational learning is determined by human capital (job satisfaction), structural capital (use of technology, information systems, internal communication and standardized processes in care) and social capital (trust, shared vision). These findings reveal that it is elementary to strengthen job satisfaction; Likewise, it is necessary that the institution has a pleasant work environment and favors teamwork so that there is a better integration and trust in the staff that allows them to share their knowledge and institutional vision, which will favor knowledge management and Therefore, organizational learning.[18,19]

Conclusion

The evidence reveals the need to strengthen knowledge management in health institutions where the elements of human, structural and social capital are included because of their multiple organizational benefits, as well as their relation to the results of care. It is important to pay special attention to human capital and organizational learning and its determinants, especially as human capital is the generator of knowledge and learning, the result of the generation and development of knowledge within organizations, for What its proper management gives a competitive advantage to the organization and a value added to the attention that is provided to the users.

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Conflict of interest

The author declares no conflict of interest.

References

1. Brito E, Nagliate P, Bis C, et al. Knowledge management in health: a systematic review of the literature. *Rev Latino-Am Nursing*. 2012;20(2):392–400.

2. Fernández C. The generation of nursing knowledge and its management in the divisions of Nursing. *A strategic proposal Educare*. 2017;21(37).

3. Covell C. The middle-range theory of nursing intellectual capital. *J Adv Nurs*. 2008;63(1):94–103.

4. J Hoffman, Hoelscher M, Sherif K. Social Capital, knowledge management, and sustained superior performance. *J Knowl Manag*. 2005;9(3):93–100.

5. Nonaka I, Krogh V. Perspective-Tacit knowledge conversion: Controversy and advancement in organizational knowledge creation theory. *Organization Science*. 2009;20(3):635–652.

6. Kuuppelom Ki M, Tuomi J. Finnish nurses' views on their research activities. *Journal of Clinical Nursing*. 2003;12(4):589–600.

7. RH Weng, Huang CY, Tsai WC, et al. Exploring the impact of mentoring functions on job satisfaction and organizational commitment of new staff nurses. *BM C Health Services Research*. 2010;10:240.

8. CW Chang, HC Huang, Chiang CY, et al. Social capital and knowledge sharing: effects on patient safety. *J Adv Nurs*. 2003;68(8):1793–1803.

9. Asociación Médica Mundial. Declaración de Helsinki de la AMM. Principios éticos para las investigaciones médicas en seres humanos; 2013.

10. RL Taunton, Bott MJ, ML Koehn, et al. The NDNQI-Adapted Index of work satisfaction. *Journal of nursing measurement*. 2004;12(2):101–122.

11. Jansen JJP, Tempelaar MP, Bosch FAJ, et al. Structural differentiation and ambidexterity: the mediating role of integration mechanisms. *Organ Sci*. 2009;20(4):797–811.

12. Lubatkin MH, Simsek Z, Ling Y, et al. Ambidexterity and performance in small-to medium-sized firms: the pivotal role of top management team behavioral integration. *J Manag*. 2006;32(5):646–672.

13. Atuaene-Gima KA. Resolving the capability-rigidity paradox in new product innovation. *J Mark*. 2005;69(4):61–83.

14. Kang SC, Snell SA. Intellectual capital architectures and ambidextrous learning: the framework for human resource management. *J Manag Stud*. 2009;46(1):65–92.

15. Gonz lez MA, Mercado J, H Ochoa. et al. Utilization of research or n or n by health managers in Mexico: Diagnostic or capacity and strengthening proposal. *Health P ú Republic of Mexico*. 2008;50(6):498–507.

16. Borges M, M Alves, Regina S. N or satisfaction at work enfermer team í to: reviewed September or n inclusive. *Rev Latino-Am Enfermagen*. 2011;19(4):1047–1055.

17. Casta ñ eda Hidalgo H. Perception or n of the culture of patient safety by staff enfermer y. *Cienc Nurse Concepci ion*. 2013;19(2):77–88.

18. Meltzer D, Chung J, Khalili P, et al. Exploring the use of social network methods me in designing healthcare quality improvement teams. *Soc Med Sci*. 2010;71(6):1119–1130.

19. P Manning. Explaining and developing social capital for knowledge management purposes. *J Knowl Manag*. 2010;14(1):83–99.