



Perception of Workers About the Workplace Health and Safety System in a Level III Hospital, Bogotá-Colombia. 2014.

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ABSTRACT

Purpose: To evaluate the perception of workers about the workplace health and safety system among the nursing and administrative population in a Healthcare Level III Hospital, Bogotá-Colombia.

Materials and methods: Cross-sectional study of the nursing and administrative personnel. The validated "Nordic Occupational Safety Climate Questionnaire NOSACQ 50 Spanish" was administered. The sample was of a probabilistic stratified random type, on 308 workers (230 nursing and 78 administrative).

Results: The mean age was 39.5 ± 12 years, with a higher occurrence of the female gender (74.68%), of unmarried civil status (38.96%) and with a technical-level education (34.40%). The perception of workers about the workplace health and safety system was independent of their nursing or administrative work activity type ($p > 0.05$); the highest perception among both groups was the trust of workers in the efficacy of the safety system (2.71 and 2.77), and the lowest perceptions were for empowerment of management safety (2.35 and 2.46) and security as a priority of workers and risk rejection (2.35 and 2.40).

Conclusions: Workers at the Hospital have an adequate level of good perception about workplace health and safety matters; it was demonstrated that the trust of workers in the system's efficacy was the system's strength, whereas its weakness was the lack of empowerment and risk rejection.

KEYWORDS : Workers, administrative personnel, healthcare personnel, perception, safety, hospital.

INTRODUCTION

On the basis of the principle of worker's protection against workplace illnesses and accidents, work has been a decisive element of health processes for centuries – illnesses that affect workers, regardless of the type of activity that they perform. The World Labor Organization (WLO) estimates that every year 2.34 million people die from work-related accidents or illnesses, leading to significantly high industry, national and global workplace health and safety-related economic costs; therefore, proper workplace health and a healthy work environment are crucial to achieve higher productivity and improve worker's quality of life^{1,2,3}.

According to the World Health Organization (WHO), workers in the healthcare sector accounted for about 59 million people, which equal 16% of the global workforce⁴. While this is a relevant number, it has been left aside in occupational health and safety-related economic costs; in such a way that importance has not been given to implementing comprehensive management strategies (policies, regulations, communication channels, participation systems, among others) that promote workplace safety^{5,7}.

The research that has been conducted to this date shows that the safety perception on the part of workers is an important factor for organizations to work in a safer way^{8,9,10}. As of 1986, when the Chernobyl accident occurred, efforts started to be pooled to define, measure and improve the perception of safety within organizations¹¹. In the national work conditions survey administered by the National Workplace Health and Hygiene Institute, the case of Spain showed

that almost 50% of workplace accidents were due to overconfidence (distractions, carelessness, absent-mindedness, not paying enough attention) and even error. Consequently, the perception of risk and the behavior of individuals play a crucial role in implementing prevention policies.

In this context, it is important to clarify that the perception of safety is a veritable starting point in decision making and in improving the workplace health and safety system, which provides information the about hazardous conditions and conducts of risk that workers face in the performance of their work activities. There is a legislative framework in Colombia^{12,13,14} requiring industries to have a workplace health and security system that systematically provides for regulatory, technical, organizational and management aspects that are relevant to creating healthier and safer workplaces; nevertheless, the healthcare system sector has a low compliance rate regarding these systems¹⁵. Consequently, evaluating the perception of workers about the workplace health and safety system is important for evaluating the level of compliance with the components of the health and safety system that have been established in the institution, in addition to the ownership and responsibility of each worker towards their own safety^{16,17,18,19}.

This study was conducted with the purpose of evaluating the perception of nursing and administrative personnel about the workplace health and safety system at a public Level III Healthcare Hospital in the city of Bogotá D.C.

MATERIALS AND METHODS

A cross-sectional study was conducted, comprising a total of 1551 workers selected by random probabilistic sampling, with a proportional allocation of 308 workers classified into two groups: 230 nursing and 78 administrative. The inclusion criteria were: workers and/or officials over 18 years of age that voluntarily accepted to take part in the study, engaged by administrative career appointment, freely appointed and removed, provisional or under a provision of services contract. Workers on assignment were excluded, in addition to outsourced personnel and personnel studying abroad.

Social and demographic variables including age, place of birth, gender, marital status, time working for the entity and level of study were included. In order to evaluate the perception of workplace health and safety, the Nordic Occupational Safety Climate Questionnaire NOSACQ 50 Spanish[®] was used; it has been validated in 5 Nordic countries / Norway, Sweden, Finland, Iceland and Denmark) among others. Said questionnaire was applied to each worker in a customized way by a group of interviewers that had prior training in achieving data uniformity, and was filled out online through Google Drive.

The questionnaire is divided into 7 dimensions: 1. Safety management priority, commitment and competency. 2. Safety management empowerment. 3. Safety Management justice, as well as shared perceptions. 4. Worker’s commitment to safety. 5. Security as a priority for employees and risk rejection. 6. Communication of safety among peers, learning and trust in the suitability of safety. 7. Trust of workers in the efficacy of safety systems.

A pilot test was carried out before collecting the data in order to evaluate the understanding of the questions, and to arrange logistics and procedures to administer the questionnaire. The quality of the registered data was assured by having trained and qualified personnel answer the questions on the questionnaire. The data was then processed by exporting the database to the IBM SPSS Statistics 22, 2014 software.

This research was endorsed by the Universidad del Rosario Ethics Committee and by the Hospital where the research took place. Pursuant to Resolution 8430 of October 4, 1993, it was classified as minimum risk.

STATISTICAL ANALYSIS

Statistical descriptions and absolute and percentage frequency measurements were used for social and demographic variables (gender, level of study, marital status, main activity). Central trend (mean and median) measurements were used for quantitative variables. As for measuring the safety perception among participants, a calculation of the mean value and standard deviation of the answers provided for each dimension was used, then these answers were weighed according to the values set forth in the Nordic questionnaire application manual in such a way that when the weighted value was greater than or equal to 2.5, it was considered a good perception, and anything below said value a bad perception.

The normality of scale dimensions were assessed using the Kolmogorov-Smirnov and Shapiro Wilk tests and the homogeneity of variances was assessed using the Levene test. The difference between distributions was established using the Mann Whitney non-parametric test. Statistical tests were evaluated at a 5% (p<0.05) significance level.

RESULTS

Social and demographic variables showed the average age to be 39.5±12 (ranging between the ages of 18 – 70), and the female gender, single marital status and technical education level were predominant. The average time working for the institution was 9.1±10.26 years (ranging between 0.08 – 32 years). (Table 1).

Table 1. Frequency and percentage distributions of the social and demographic variables among the nursing and administrative personnel at the Bogotá hospital

Variable	Categories	Frequency	Percentage
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Gender	Female	230	74.68
	Male	78	25.32
	Overall Total	308	100
Marital Status	Married	115	37.34
	Divorced	26	8.44
	Single	120	38.96
	Domestic partnership	41	13.31
	Widowed	6	1.95
	Overall Total	308	100
Age Group	18-28	74	24.00
	29-39	83	26.90
	40-50	81	26.30
	51-61	65	21.10
	62 o Más	5	1.60
	Overall Total	308	100
Level of Education	Master’s Degree	6	1.90
	Graduate studies	50	16.20
	Full Primary School	1	0.30
	Incomplete Primary School	2	0.60
	Full Secondary School	18	5.80
	Incomplete Secondary School	3	1.00
	Technical	106	34.40
	Technological	21	6.80
	Full University	77	25.00
	Incomplete University	24	7.80
	Overall Total	308	100

The mean average for the weighted dimensions total was 2.61±0.23 where the highest was dimension 7 (Worker’s confidence in the efficacy of safety systems) and the lowest in the cutoff point being 2.5, dimension 5 (safety as a priority of employees and risk rejection). Through the analysis by activity type, it was established that the administrative group was evaluated as having the highest positive perception of the safety management system tools, and the lowest negative perception in the dimensions of safety management empowerment, safety as a priority among employees and risk rejection. As for the nursing group, the highest positive perception was in the dimension of efficacy of the safety management system tools and the lowest negative perception was for safety as a priority among employees and risk rejection. Despite the difference in mean values between the two groups surveyed, there were no statistically significant differences between the weighted average of all the dimensions surveyed (p>0.05). (Table 2)

Table 2. Descriptive items of the safety perception for each dimension among administrative and nursing personnel

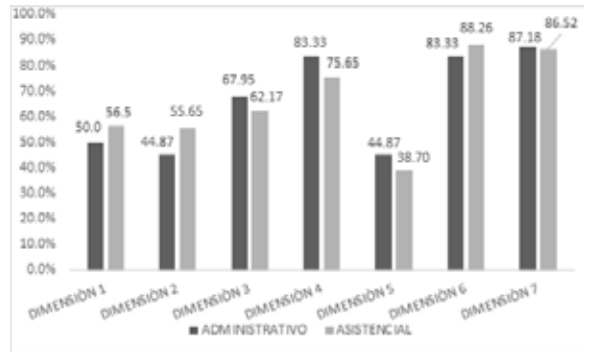
Dimensions	Average \bar{X}		Median X		Standard Deviation Σ		Weighted average per dimension	Difference between mean values p
	Administrative	Nursing	Administrative	Nursing	Administrative	Nursing		
1. Priority of safety management, commitment and competency	2.37	2.49	2.44	2.56	0.37	0.37	2.53	0.357
2. Empowerment of safety management	2.35	2.46	2.43	2.57	0.41	0.37	2.50	0.151
3. Management safety justice and shared perceptions	2.44	2.46	2.50	2.50	0.44	0.34	2.53	0.190
4. Employee's commitment with safety	2.55	2.60	2.67	2.67	0.41	0.36	2.67	0.348
5. Safety as a priority among employees and risk rejection	2.35	2.40	2.43	2.43	0.37	0.31	2.45	0.504
6. Safety communication among peers, learning and Trust in the suitability of safety	2.58	2.66	2.75	2.75	0.40	0.31	2.72	0.110
7. Worker's Trust in the efficacy of security systems	2.71	2.77	2.86	2.86	0.44	0.35	2.84	1.00

KEY: Mean = \bar{X} , Median = X, Standard Deviation = σ

Notes: Perception of the health and security system using the 1-2-3-4 scale, where 1 (bad) and 4 (high/rich). The mean of the scale is 2.5. Positive perception: mean \geq 2.5

There was a significant difference among the surveyed group in the female gender regarding the safety management dimension, as well as in shared perceptions ($P=0.025$, Mean = 2.60, Median = 2.59, Standard Deviation = 0.16); at the age of 39 in the dimension of safety management empowerment ($P= 0.0001$, Mean = 39.51, Median = 39, Standard Deviation = 12.01) and for a seniority of over 5 years in the dimension of employee's commitment to safety ($P= 0.005$, Mean = 9.13, Median = 4, Standard Deviation = 10.26).

An independent analysis of the positive perception results was carried out for all the dimensions that were evaluated in the study, wherein the percentage distribution of each dimension was used as a reference criterion. Thus, it was found that the in the nursing personnel had the highest percentages of positive perception in dimensions 6 (communication and interaction of work teams) and dimension 7 (trust of workers in the efficacy of safety systems). As for administrative personnel, the highest percentages of positive perception were found in dimension 7 (trust of workers in the efficacy of safety systems), dimension 4 (employee's commitment to safety) and dimension 6 (communication about safety among peers, learning and trust in the suitability of safety). Graph 1.



Graph 1. Percentage distribution of positive perceptions by dimension and activity type

Group stratification shows that the nursing group has a good perception level of 75.65% among workers, compared to 80.77% in the administrative group. This shows that the general perception about the workplace health and safety system among the population that participated in the study had an adequate level of good perception. According to the dimensions there is a commitment toward safety as a priority and competency at the management level, based on a management system, wherein commitment to safety is a priority, and there is a freedom-based data communication and dissemination where abnormal situations and/or events can be identified and reported, which supports the development of trust and increases worker's participation.

DISCUSSION

There is an increasing amount of evidence-based literature about the perceptions of worker's on workplace health and safety systems, which shows a need to carry out further research using standardized measures that enable analyzing the different organizational and context factors as a baseline for safety performance in different sectors and countries^{20,21,22}.

This study found that the highest concentration of the population is female, unmarried and with technical-level education, which is coherent with the general behavior of the healthcare sector in Colombia^{23,24}, because it is mostly women that provide technical support services for patient healthcare and mobilization.

Workers show an adequate level of good perception towards workplace health and safety, regardless of their activity type, due to the fact that the average of all dimensions was above 2.5, which allows us to consider that information communication and dissemination is based on trust. This value can predict safety performance as the basis for a more proactive approach to the system^{25,26,27}.

No statistically significant differences were found in analyzing the differences in mean values (p) in of the each dimensions between the groups (administrative and nursing), showing a dissimilar behavior to the studies carried out in Latin America, where the assessment of the nursing personnel about the health and safety system rated it as being average, identifying the system's weaknesses and strengths in command methods, planning processes, social relationships and control processes²⁸.

The highest perception among the administrative personnel group was seen in dimension 7 (worker's trust in the efficacy of the safety system). This can be related to the fact that this group is responsible for creating strategic and operative plans for institutions, which provides a deeper knowledge that provides more trust. The lowest perception was in dimensions 2 (safety management empowerment) and 5 (safety as a priority of employees and risk rejection), due to the fact that the personnel working in this group has a minimal occupational risk and does not witness it or take ownership of its management.

The best perception among the nursing personnel was worker's trust in the efficacy of safety systems, and the lowest perception was for safety as a priority among workers and risk rejection; this is due to the fact that workers superimpose patient care to their own safety.

Statistically significant differences in the positive perception analysis were found in the gender, age and level of seniority variables: Here, the female gender sees an environment of trust in the dimension of safety management justice and in shared perceptions, while admitting that admitting that there are behaviors that go against health and safety. Workers within the age range of 18 to 39 have a perception about improving and changing unsafe work conditions in the safety management empowerment dimension. Regarding the commitment of workers to safety, work seniority of over 5 years shows that workers who have been engaged for a longer period of time are confident in their actions and tend to partake in more unsafe actions^{29,30,31}.

To control the selection bias of individuals who participated in the study, a random selection probability sampling was carried out, thus making a loss adjustment; the use of the validated questionnaire enabled reducing the information bias thanks to the capacity of the instrument^{32,33,34}.

CONCLUSIONS

Hospital workers have an adequate level of good perception about workplace health and security aspects, showing that the main strength is in the trust that workers have about the efficacy of the system and the main weakness in the system is the lack of empowerment and risk rejection; the perception of workers about the workplace health and safety system was independent of their administrative or nursing work activity.

Gender, age and seniority variables: the female gender perceives an environment of trust in the dimension of safety management and shared perceptions, while admitting that there are behaviors that go against health safety. Workers among the ages of 18 to 39 perceive a need to improve and change work unsafe conditions in the safety management empowerment dimension. In the commitment of workers to safety dimension, work seniority of over 5 years shows that workers who have been engaged for a longer period of time are confident in their actions and tend to partake in more unsafe actions.

Hospital workers are mostly single adults, where the female gender and technical level of studies is predominant, wherein trust in the safety systems among the surveyed groups (administrative and nursing) is underscored.

RECOMMENDATIONS

In order to improve and reinforce a positive perception about workplace health and safety, continuous improvement programs need to be carried out in the following dimensions: (2) safety management empowerment, (5) safety as a priority among employees and risk rejection.

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