








SAFETY CLIMATE AND HAND HYGIENE PRACTICE: PERCEPTION OF WORKERS AND MANAGERS

CLIMA DE SEGURANÇA E A PRÁTICA DE HIGIENE DAS MÃOS: PERCEPÇÃO DE TRABALHADORES E GESTORES

PRÁCTICA DE SEGURIDAD CLIMÁTICA E HIGIENE DE MANOS: PERCEPCIÓN DE TRABAJADORES Y GESTORES

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ABSTRACT

Objective: to assess the safety climate among health workers in critical environments and the perception of managers about hand hygiene practices. **Method:** this is a cross-sectional and analytical study, carried out with health professionals (n = 142) and managers (n = 54) from a public hospital. The assistance team answered the Safety Attitudes Questionnaire (SAQ) and the managers answered the questionnaire recommended by WHO on hand hygiene. **Results:** it was observed that the perception of a security climate was compromised in all domains evaluated, with a worse evaluation for the Perception of management. For managers, there is little commitment by health professionals to the practice of hand hygiene and in addition, 37% of managers do not believe that patient participation is effective action in improving this practice. **Conclusion:** it was found that the deficient safety climate and the limited perception of hand hygiene is a duality that can compromise patient safety.

Descriptors: Patient safety; Hand Hygiene; Patient Assistance Team; Organization and Administration; Infection Control; Health Personnel.

RESUMO

Objetivo: avaliar o clima de segurança entre trabalhadores de saúde de ambientes críticos e a percepção de gestores sobre as práticas de higiene das mãos. **Método:** trata-se de um estudo transversal e analítico, realizado com profissionais de saúde (n=142) e gestores (n=54) de um hospital público. A equipe assistencial respondeu ao Safety Attitudes Questionnaire (SAQ) e os gestores ao questionário recomendado pela OMS sobre higiene das mãos. **Resultados:** observou-se que a percepção do clima de segurança esteve comprometida em todos os domínios avaliados, com pior avaliação para a Percepção da gerência. Para os gestores, há pouco comprometimento dos

profissionais de saúde com a prática de higiene das mãos e, além disso, 37% dos gestores não acreditam que a participação do paciente seja ação eficaz na melhoria dessa prática. **Conclusão:** constatou-se que o clima de segurança deficitário e a percepção limitada sobre higiene das mãos são uma dualidade que pode comprometer a segurança do paciente.


Descritores: Segurança do Paciente; Higiene das Mãos; Equipe de Assistência ao Paciente; Organização e Administração; Controle de Infecções; Pessoal de Saúde.


RESUMEN


Objetivo: evaluar el clima de seguridad entre los trabajadores de la salud en entornos críticos y la percepción de los gestores sobre las prácticas de higiene de manos. **Método:** se trata de un estudio transversal y analítico, realizado con profesionales de la salud (n = 142) y gestores (n = 54) de un hospital público. El equipo de asistencia respondió el Cuestionario de Actitudes de Seguridad (SAQ) y los gestores respondieron el cuestionario recomendado por la OMS sobre higiene de manos.


Resultados: se observó que la percepción de clima de seguridad se vio comprometida en todos los dominios evaluados, con una peor evaluación para la Percepción de gestión. Para los gestores hay poco compromiso por parte de los profesionales de la salud con la práctica de la higiene de manos y además, el 37% de los gestores no cree que la participación del paciente sea una acción efectiva para mejorar esta práctica. **Conclusión:** se encontró que el clima de seguridad deficiente y la percepción limitada de la higiene de manos es una dualidad que puede comprometer la seguridad del paciente.


Descriptorios: Seguridad del paciente; Higiene de manos; Equipo de asistencia al paciente; Organización y administración; Control de infección; Personal de Salud.


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INTRODUCTION

Patient safety is one of the six aspects of quality of care and has acquired great importance worldwide, in the legitimacy of qualified care¹.

To strengthen the care security scenario, the World Health Organization (WHO) and the Joint Commission International (JCI) created international patient safety goals to promote specific improvements in some areas of care and provide safer care². Among these goals, there is the need for handwashing to prevent Health Care-Associated Infections (HAIs).

HAIs affect millions of people worldwide and represent a major risk to patient safety, due to high mortality rates, and the increased costs to institutions and health systems³.

It is a worldwide consensus that the main measure for the prevention of HAIs is Hand Hygiene (HH)³⁻⁴. Thus, the multimodal strategy for improving HH, released by the World Health Organization in 2009, is composed of five key components: (1) System change: aims to guarantee the necessary infrastructure for the practice of HH; (2) Training/education: proposes dynamic and periodic training to all team professionals; (3) Evaluation and feedback: monitoring HH practices and returning data to professionals; (4) Reminders in the workplace: posting posters about the importance of HH; and, (5) Institutional security climate: the creation of a favorable environment for patient safety issues, with active individual participation of professionals and feedback at the individual and organizational levels, in addition, to support from senior management and involvement of institutional leaders²⁻⁴.

Currently, ten years after the launch of the referred multimodal strategy, the rates of adherence to hand hygiene prevail deficient worldwide⁴, and studies show little involvement of management in the topic⁴⁻⁷.

In this context, we emphasized that managerial support is crucial for the effective implementation of the multimodal strategy for improving HH since this component is transversal to all the other elements of that strategy and contributes substantially to the culture of patient safety. Experimental studies have shown that the involvement of management in the referred HH multimodal strategy for building a favorable climate for patient safety is essential to obtain satisfacto-

ry adherence rates⁴.

The safety culture is defined as the product of values, attitudes, perceptions and competencies, group and individual, which determine a pattern of behavior and safety commitment of the institution, replacing guilt and punishment with the opportunity to learn from failures. The safety climate refers to the measurable components of the safety culture, reflecting the conception of professionals of the patient safety issues in the institution¹.

Therefore, the Safety Attitudes Questionnaire (SAQ) stands out as a valid instrument capable of providing information regarding the elements that need to be implemented in hospital institutions for patient safety, It measures the safety climate among health team professionals, through domains such as Teamwork climate, Safety climate, Job satisfaction, Stress perception, Management perception, and Working conditions⁸. Studies have shown a low perception of patient safety climate, both nationally⁶⁻⁸, and worldwide⁹.

We believe that investigating the perception of the safety climate in health institutions together with the managers' perception on the importance of MH can collaborate in the planning and effectiveness of priority actions for the prevention and control of HAIs. Thus, we elaborated the following research questions: what is the perception of the patient safety climate among health professionals who work in critical environments, and what is the perception of managers about the effectiveness of hand hygiene actions?

OBJECTIVE

To assess the safety climate among health workers in critical environments and the perception of managers about hand hygiene practices.

METHOD

This is a quantitative, cross-sectional, analytical study, carried out with all health professionals working in critical units of a university hospital in the Midwest of Brazil. The institution is medium-sized and provides services at the tertiary level.

The study population was composed of health professionals and managers. Health professionals (N = 180) represented by nurses, nursing technicians, doctors, resident doctors, and physiotherapists working in the Neonatal ICU, Adult ICU, and Medical Clinic (semi-intensive care wing), in the morning, afternoon, evening, and night, every day of the week. Professional managers (N = 61) were employees who held the position of administrator, head of a sector, or unit.

Exclusion criteria were defined as workers who were removed from the work sector or managerial function, due to vacation or sick leave during the period of data collection and those who had less than six months of experience at the institution. This period is justified by the time

necessary to measure the organizational security climate since the perception of workers concerns safety issues in their work environment⁸.

After agreeing to participate in the research by signing the Informed Consent Term (ICF), all participants received the questionnaires and their form of ICF in opaque envelopes, agreeing on a date for the researcher's return to pick them up.

We collected data from July to September 2018. For this purpose, we used the Safety Attitudes Questionnaire (SAQ) Short Form 2006, adapted to validate the reality of Brazilian hospitals⁸. For data collection with managers, we used an instrument validated by the WHO: Questionnaire on the perception of Executive Managers/Directors/Administrators/Chiefs about infections related to health care and hand hygiene⁵. Both questionnaires are self-administered, with an average time of 20 minutes.

The SAQ has 41 items that aim to measure the safety climate through six domains: teamwork climate, safety climate, job satisfaction, stress perception, management perception (from the work sector and the hospital), and working conditions. It is a 5-point Likert-type ordinal scale: I disagree and I agree. The score ranges from 0 to 100 points and scores ≥ 75 are considered positive values. The validation study showed satisfactory internal consistency, with Cronbach's alpha of 0.89 and the factor analysis discriminated against the six aforementioned domains⁸.

The WHO questionnaire consists of 18 items, and questions 9 to 12 are organized in a 4-point Likert-type ordinal scale format: 1 - Very low to 4 - Very high, and they measure: the impact of HAI on the clinical evolution of the patient and hospital expenses; the effectiveness of HH in preventing HAIs and the importance of HH in management priorities. Questions 14 and 16 to 18 are organized in a 5-point Likert ordinal scale format. Question number 14: 1 - Not at all 5 - Very good; question 16: 1 - No effort at 5 - Great effort; question 17: 1 - Not at all at 5 - Very well; and number 18: 1 - Ineffective to 5 - Very effective, and they evaluate: nurses and doctors as good examples for the promotion of HH in the institution; the necessary effort of health workers for HH; perception of the request for an excellent HH by health workers; effectiveness of actions in permanently increasing adherence to HH practices in the institution⁵.

The data were tabulated using Microsoft Office Excel® software, with independent double entry. After the confirmation of fidelity, we analyzed the data using descriptive statistics to summarize the set of data obtained. Nominal categorical variables were described and presented in tables of absolute (n) and relative (%) frequency. Quantitative variables were expressed as mean and standard deviation. The normality of the data was tested using the Shapiro-Wilk test and since they were non-normal data, we compared the perception of the safety climate and the

worker categories with the Kruskal-Wallis test in the R software.

This study is part of a matrix project entitled: “Multimodal strategy for health workers to adhere to hand hygiene: a quasi-experimental study”, approved by the institution's Research Ethics Committee under opinion Number 2,441,333 with Certificate number of Presentation for Ethical Appraisal (CAAE) n°: 75169317.0.0000.5541 so that all ethical prerogatives of resolution n° 466/2012 of the National Health Council were fulfilled.

RESULTS

Of the total health professionals (N = 180), 11 (6.1%) were not found during the period of data collection, 10 (5.5%) refused to participate in the study, 8 (4.4 %) did not return the questionnaire after three attempts, 7 workers (3.8%) were on vacation and 2 (1.1%) on sick leave.

Of the total managers (N = 61), 3 (4.9%) were on vacation, 3 (4.9%) were not found exercising the mentioned function and 1 (1.6%) was on maternity leave. Thus, 196 professionals made up the final sample of the study, represented by 142 health care workers, 60 nursing technicians, 24 nurses, 29 doctors, 17 resident doctors, 12 physiotherapists, and 54 managers, with a response rate of 78.8 % and 88.5%, respectively.

Table 1 - Profile of study participants (n = 142). Midwest Region, Brazil, 2018.

Variables	f	%
Gender		
Male	45	31,70
Female	97	68,30
Age group - (years old)		
20 - 30	29	20,42
31 - 40	68	47,89
41 - 50	35	24,65
51 - 60	10	7,04
Professional category		
Nursing technicians	60	42,25
Nurses	24	16,90
Doctors	29	20,42
Resident physicians	17	12,97
Physiotherapists	12	8,45
Sector of activity		
Adult ICU	38	26,76

Neonatal ICU	50	35,21
Medical clinic (semi-intensive)	54	38,02

Regarding the perception of a safe climate, there was no statistically significant difference between the professional categories. We observed that among nursing workers and physiotherapists, the perception of the safety climate was lower (Table 2).

The perception domains of the unit and hospital management and working conditions were represented by the lowest scores in all observed professional categories. The perception of stress obtained a higher average among resident physicians.

Regarding the total score obtained, no category had a positive value, except for the job satisfaction domain, which obtained a satisfactory score only among resident physicians, according to Table 2.

Table 2 - Distribution of the domains of the Safety Attitudes Questionnaire (SAQ), by professional categories. Midwest Region, Brazil, 2018. (n=142)

SAQ domains	Nursing		Resident		Physiotherapists	p-value *
	technicians	Nurses	Doctors	physicians		
	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)	
Teamwork climate	64,30 (14,15)	63,19 (13,49)	72,41 (15,16)	70,09 (13,83)	67,01 (12,36)	0,07
Safety climate	54,64 (15,15)	52,08 (12,09)	57,38 (15,15)	59,24 (12,37)	50,89 (16,05)	0,44
Job satisfaction	69,75 (15,71)	67,70 (13,82)	72,75 (14,11)	75,00 (18,87)	74,58 (16,01)	0,42
Perception of stress	68,85 (16,37)	71,09 (17,94)	71,76 (18,94)	80,51 (18,47)	60,41 (19,27)	0,15
Perception of unit management	46,18 (15,13)	46,35 (16,95)	51,14 (15,70)	56,37 (13,43)	42,36 (19,18)	0,14
Perception of hospital management	45,97 (12,95)	46,18 (13,28)	47,55 (14,49)	50,98 (16,23)	45,13 (19,12)	0,82
Work conditions	48,19 (22,55)	47,91 (20,74)	52,87 (18,67)	53,43 (20,63)	43,75 (19,50)	0,73
Total SAQ	58,79 (11,60)	58,02 (10,37)	63,43 (11,36)	65,53 (9,54)	57,62 (13,89)	0,17

* p-value obtained by the Kruskal-Wallis statistical test.

Most managers were female (72.2%), heads of units and sectors (85.2%), with an institutional bond longer than 36 months (74.1%), time in the current occupation less than 25 months (77.8%) and reported experience in HH campaigns (72.2%).

Regarding the managers' perception of the impacts of HAIs on the patient's clinical evolution and hospital expenses, a total of 91.7% reported that there is a high impact on both, although 5.5% of the managers believed that the practice of HH in the prevention of HAIs has low efficacy and 9.3% perceived this measure as low important in the priorities of institutional management (Table 3).

Table 3 - Distribution of the frequency (f) of managers in the impact of HAIs, effectiveness, and importance of Hand Hygiene in the prevention of Health Care-Associated Infections. Midwest Region, Brazil, 2018. (n = 54)

Variables	f	%
Impact of an HAI* on the patient's clinical evolution		
Very low	0	0
Low	3	5,6
High	26	48,1
Very high	25	46,3
Impact of IRAS on hospital expenses		
Very low	0	0
Low	6	11,1
High	26	48,2
Very high	22	40,7
Effectiveness of HH † in preventing HAI		
Very low	1	1,9
Low	2	3,7
High	14	25,9
Very high	37	68,5

Importance of HM † in the institution's management priorities

Very low	0	0
Low	5	9,3
High	28	51,8
Very high	21	38,9

* HAIs - Health Care-Associated Infections

† HH - Hand Hygiene

When asked about the rate of HAIs, 13% of participants stated that there was no index of such infections in the institution and 50% of managers reported an index higher than 15%.

Regarding the perception of the percentage of health professionals who perform HH, 33% of managers thought that only 50% of the total of professionals perform this practice according to the recommended times. Also, a total of 50% estimated that health workers do not try hard enough to perform HH and neither do they receive a positive request to perform it (54%).

Regarding the effectiveness of educational strategies to permanently increase adherence to HH practices, we observed that some actions were less perceived as effective by managers to the detriment of others, such as feedback on the professional's performance regarding adherence to HH and participation of the patient as a strategy for adherence to this practice (Table 4).

Table 4 - Distribution of the frequency (f) of the managers in the effectiveness of the actions to carry out the HH. Central-West Region, Brazil, 2018. (n = 54)

Variables	f	+%
Leaders and executive managers who openly support and promote HH*		
Ineffective	0	0
Not very effective	4	7,4
Neither effective nor ineffective	8	14,8
Effective	22	40,7
Very effective	20	37,0
Alcoholic preparations available for HH		
Ineffective	0	0
Not very effective	5	9,3
Neither effective nor ineffective	4	7,4
Effective	20	37,0
Very effective	25	46,3
Posters on how to perform MHH displayed at the assistance points as reminders		

Ineffective	1	1,8
Not very effective	3	5,5
Neither effective nor ineffective	13	24,0
Effective	24	44,4
Very effective	13	24,0
Ineffective	1	1,8
Not very effective	3	5,5
Neither effective nor ineffective	13	24,0
Health professional training in how to perform HH		
Ineffective	1	1,8
Not very effective	2	3,7
Neither effective nor ineffective	11	20,4
Effective	23	46,6
Very effective	17	31,5
Clear and simple instructions visible on HH		
Ineffective	1	1,8
Not very effective	2	3,7
Neither effective nor ineffective	14	26,0
Effective	22	40,7
Very effective	15	27,8
Feedback to healthcare professionals on HH performance		
Ineffective	10	18,5
Not very effective	11	20,4
Neither effective nor ineffective	13	24,07
Effective	11	20,4
Very effective	9	17,0
Patients are encouraged to remind health professionals to perform HH		
Ineffective	13	24,0
Not very effective	11	20,4
Neither effective nor ineffective	12	22,2
Effective	12	22,2
Very effective	6	11,1

DISCUSSION

The sample of this study was composed mainly of female participants (n = 97; 68.30%), with an average of 31 to 40 years old. Most workers made up the nursing team (n = 84; 59.15%) and the medical clinic sector (semi-intensive) had the largest number of participants (n = 54; 38.02%).

The results of this investigation showed the weakness in aspects related to the patient's safety climate since the domain scores were negative, that is, less than 75 points. These findings are in line with studies carried out in other Brazilian states⁶⁻⁸.

We should mention the evaluation of the perception of the unit and hospital management, which reflect the perception of healthcare professionals about the recognition and approval of management actions for patient safety in the institution. They were the domains that had lower scores than others, corroborating with national⁶⁻⁸ and international⁹⁻¹⁰ studies.

The results of this study showed the distance between management and issues related to patient safety, perceived by healthcare professionals in critical units, places where the HAI indexes are alarming worldwide¹¹. On the other hand, managers perceived low commitment from health workers to HH. In other words, this duality can have repercussions on unsafe practices, especially in the prevention of HAIs and, therefore, safe health care practices.

Low and limited perceptions of the security climate and the importance of the practice of HH to prevent HAIs are inconsistent with safe and quality care, and such results suggest that there is a need to strengthen the leadership roles of managers, integrating the health team¹²⁻¹³. This is crucial since health work is known to be carried out by multiple agents, and the valorization of the middle and upper management regarding safety actions is, possibly, a critical element for the concreteness of safe care¹³.

Regarding the working conditions domain, the low scores shown in this study may also be influenced by factors such as long working hours, inadequate staffing, the deficit in the infrastructure of the place, among other factors that contribute to professional wear and favor the occurrence of errors during care.¹⁴⁻¹⁵ Future studies should be conducted given this diagnosis found.

Regarding the stress perception domain, the results showed that there was recognition of the stressors that can influence the performance of the work of the nursing team, doctors, and resident doctors.

It is important to highlight that nursing professionals generally have a double employment relationship and still conciliate their journey with domestic chores and search for a better professional qualification, which results in a daily routine of intense activities. Thus, their rest is compromised, which can reflect on the development of stress, depression, and Burnout Syndrome in these workers¹⁵.

Regarding the perception of stress evidenced by resident doctors, studies show that residency is one of the most critical periods of education for medical qualification due to the need for persistent study, excessive responsibility, high demands for care, long working hours and lack of time to rest are elements that lead to exhaustion, depression and occupational stress¹⁶⁻¹⁷.

Another important gap evidenced in this investigation is the lack of knowledge by some managers of the key elements of the multimodal strategy, such as feedback on the practice, posters in the workplace, and patient involvement. Studies have shown that when managers support this strategy and feel co-responsible for the implementation of all its integrating components, higher rates of HH adherence are obtained, and only then they can be sustained over time⁴.

In this study, although managers perceived the effectiveness of hand hygiene in controlling HAIs, less than 70% of managers recognized reminders in the workplace and feedback on the performance of HH as effective and impacting actions to stimulate adherence to this practice in the investigated institution. However, WHO recognizes and disseminates these strategies as key components of the multimodal strategy to achieve positive health outcomes⁵.

A recent integrative review study showed that interventions using all elements of the multimodal strategy in an articulated and interdependent manner increased HH adherence, highlighting that some components were essential to maintain sustainability over time, such as management participation and involvement with safety measures and feedback to health workers about their performance in HH⁴.

Regarding the inclusion of the patient in the implementation of safe practices, the National Patient Safety Program, created in 2013¹, emphasizes the importance of the participation of the patient, family, and caregivers in the care process and the adoption of strategies for adherence to HH. This axis refers to the citizen's involvement in their safety for the prevention of errors and AE in health, as well as in the achievement of international patient safety goals, such as the reduction of HAIs in health services^{2,18}.

In this study, for managers (66.6%), the patient's help to remind health workers of HH was not considered effective. However, a study carried out in Geneva, highlighted that the patient's participation and involvement in the implementation of the multimodal strategy for HH were considered an existent component since the adherence rates showed substantial improvement¹⁸.

Also, in this context, research that investigated the health professional's perception of the importance of patient involvement for greater adherence to HH practices showed agreement in this involvement, with approval rates represented by around 93.3% and 62.8%, respectively¹⁹⁻²⁰. On the other hand, the main reasons expressed by health workers for not involving the patient referred to the duty of the health professional with this practice and the negative effects on their bond with

the patient²⁰.

We highlight as limitations of the study to research a single hospital, in critical sectors, with a population and consequently reduced sample for some professional categories, which compromises the generalization of the results found. Also, other factors should be investigated as contributing to the reduced perception of the patient's institutional security climate and future research should be carried out to analyze possible associated factors.

CONCLUSION

We conclude that health workers had a low perception of a safety climate in the investigated institution, with scores lower than the recommended in all domains evaluated, just as managers had a limited perception of hand hygiene and infections related to health care. This is an issue that can have repercussions on unsafe practices, reinforced by the fact that the perception of management was the domain of the safety climate with lower values in all the professional categories evaluated, which reflects the distance between the assistance and management team regarding issues related to patient safety.

We should show that investments in HH without the commitment of management should be questioned when it is intended to achieve better adherence rates, as the culture of effective safety is a transversal component to any multimodal strategy. Likewise, there can be no substantial and concrete involvement of management without the awareness of these leaders about the interdependence and complementarity of important components that permeate the multimodal strategy, little known to them, such as feedback on HH practices, patient participation, among others.

The study contributes to reinforcing the patient safety climate as a scope that can be measured by the health team, especially the nursing team workers, which is undoubtedly relevant to the development of feasible strategies for safe care. In addition, the duality in the perception of the patient's safety climate among workers with the perception of the effectiveness of hand hygiene among managers is a contribution that shows that patient safety is a complete and multidimensional asset in the dynamics of the organization.

CONTRIBUTIONS

We inform that all authors contributed equally in the design of the research project, collection, analysis, and discussion of the data, and also in the writing and critical review of the content with intellectual contribution and in the approval of the final version of the study.

CONFLICT OF INTERESTS

Nothing to declare.

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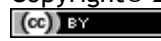
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