



STRATEGIES FOR ADHERENCE TO HAND HYGIENE
ESTRATÉGIAS PARA A ADEÇÃO À HIGIENIZAÇÃO DAS MÃOS
ESTRATEGIAS PARA LA ADHERENCIA A LA HIGIENE DE LAS MANOS

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ABSTRACT

Objective: to identify the strategies employed by health organizations to promote adherence to hand hygiene among the multiprofessional team. **Method:** this is a bibliographic, descriptive study, integrative-review type, with searches for articles in the databases BDENF, LILACS, and PubMed, published in the years from 2011 to 2016. Its development occurred by means of an instrument for data collection, the design, the results and the strategies to hand hygiene are presented in the form of figures and analyzed in the light of the literature. **Results:** 15 articles were reviewed, and grouped by didactic similarity in the category of “strategic components and modifiable factors to the adherence to hand hygiene”. The use of multimodal resources stood out, with potential to improve compliance and reduce the missed opportunities for hand hygiene, being the approach “My Five Moments” of WHO the strategy employed at health organizations. **Conclusion:** this is a multicausal topic that requires the production of knowledge, from the daily care, for the recognition of potential barriers and potential facilitators for the adherence to hand hygiene. **Descriptors:** Patient Care Team; Hand Hygiene; Infection Control; Patient Safety; Health Organizations; Nursing.

RESUMO

Objetivo: identificar as estratégias empregadas pelas organizações de saúde para promover a adesão à higienização das mãos entre a equipe multiprofissional. **Método:** trata-se de um estudo bibliográfico, descritivo, tipo revisão integrativa, com buscas de artigos nas Bases de dados BDENF, LILACS e PubMed, publicados entre os anos de 2011 a 2016. Elaborou-se por meio de um instrumento para a coleta dos dados, o delineamento, os resultados e as estratégias à higienização das mãos, apresentam-se em forma de figuras e analisados à luz de literatura. **Resultados:** revisaram-se 15 artigos, e agrupados por semelhança didática na categoria “componentes estratégicos e fatores modificáveis à adesão da higienização das mãos”. Evidenciou-se o emprego de recursos multimodais, com potencial de melhorar a conformidade e reduzir as oportunidades perdidas à higienização das mãos, sendo a abordagem “Meus Cinco Momentos” da OMS a estratégia empregada nas organizações de saúde. **Conclusão:** entende-se que o tema é multicausal e exige a produção de conhecimento, a partir do cotidiano assistencial, para o reconhecimento das possíveis barreiras e potenciais facilitadores para a adesão de higienização das mãos. **Descritores:** Equipe de Assistência ao Paciente; Higiene das Mãos; Controle de Infecções; Segurança do Paciente; Organizações em Saúde; Enfermagem.

RESUMEN

Objetivo: identificar las estrategias empleadas por las organizaciones de salud para promover la adhesión a la higiene de las manos entre el equipo multiprofesional. **Método:** este es un estudio bibliográfico, descriptivo, del tipo revision integradora, con búsquedas de artículos en las bases de datos BDENF, LILACS y PubMed, publicados en los años de 2011 a 2016. Producido por medio de un instrumento de recopilación de datos, el diseño, los resultados y las estrategias para la higiene de las manos se presentan en forma de figuras y analizados a la luz de la literatura. **Resultados:** 15 artículos fueron revisados y agrupados por similitud didáctica en la categoría de “Componentes estratégicos y factores modificables para la adhesión de higiene de manos”. Se evidenció el uso de recursos multimodales, con potencial para mejorar el cumplimiento y reducir las oportunidades perdidas para la higiene de las manos, siendo el enfoque “Mis cinco momentos” de la OMS la estrategia empleada en las organizaciones de salud. **Conclusión:** se entiende que el tema tiene múltiples causas y requiere la producción de conocimiento, desde el cuidado diario, para el reconocimiento de posibles barreras y facilitadores para la posible adhesión de higiene de las manos. **Descriptor:** Equipo de asistencia al Paciente; Higiene de las Manos; Control de Infecciones; Seguridad del Pacientes; Organizaciones en Salud; Enfermería.

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INTRODUCTION

Many factors contribute in the daily care of health organizations and result in the low adherence to hand hygiene (HH) by health professionals. One of these factors is, for example, the professional category. According to a study,¹ being a doctor or a nurse is associated with lower adherence to hand hygiene and other factors are reported by professionals to explain the non-adherence to hand hygiene, such as lack of professionals, overcrowding and even oblivion.¹⁻²

Among other key aspects on hand hygiene at health services, the World Health Organization (WHO) estimates that the degree of health professionals' perception and knowledge on the relationship between the safe handling and the prevention of infection is a factor that may weaken or strengthen the improvement and adherence to the practice of HH for reducing healthcare-associated infections (HCAI).^{1,3} The infrastructure available at health organizations for hand hygiene also influences the adherence and practice of professionals to the HH, in addition to interfering in the creation of an institutional environment conducive to minimize the missed opportunities for hand hygiene.³

In the last six years, based on the recommendations of the World Health Organization (WHO), strategies on the best practices of compliance and adherence to HH have been implemented in various countries as the gold standard in the prevention of HCAI.⁴ These strategies were initially proposed for the hospital environment, however, over the years, in the infection control area, there have been discussion the risk of transmission of microorganisms and infection in extra-hospital spaces, hence originating the interest in implementing the strategy for improving HH of the WHO for basic care and other scenarios beyond the hospital.

Furthermore, professionals' adherence to the practice of hand hygiene is insufficient and inadequate both in technique as in frequency. The number of opportunities for hand hygiene varies considerably according to the different hospitalization units, and the number of opportunities directly depends on the process of care provided to the patient,⁵ which is equivalent to saying that missing opportunities to HH regarding the procedures of direct and indirect contact with the patient represents increasing the risk of morbidity and mortality by infections.

The expression "Healthcare-Associated Infections" differs from the concept of

nosocomial infection from the moment the scientific literature expands with studies of identification, control and prevention of infections to other scenarios of health assistance beyond the hospital.⁶

Therefore, the interest in researching the HH theme from a literature review is justified, once the more the strategies employed in the action of hand hygiene are known, the higher the chances of provoking, in professionals, change and practical incorporation, for a culture of safe care in the patient care. The scientific knowledge produced by this study can contribute to expand the discussion about intervening factors that weaken the care and reduce the incidence of HCAI at health organizations.

OBJECTIVE

- To identify the strategies employed by health organizations to promote adherence to hand hygiene among the multiprofessional team.

METHOD

This is a bibliographic, descriptive, integrative-review type study, using a protocol with the six phases in the research process of LIR: 1) definition of the research question; 2) search in the literature; 3) data collection; 4) critical analysis of the included studies; 5) discussion of results and 6) presentation of the review.

In the first phase, the following research question was prepared: "What are the strategies employed by health organizations to promote adherence to hand hygiene among the multiprofessional team aiming at the prevention of healthcare-associated infection?".

In the second phase, a search strategy was built, using the descriptors in Portuguese *higiene das mãos*, *controle de infecção* and *organizações de saúde* and their corresponding in English from the Medical Subject Headings (MeSH): hand hygiene, infection control and health organizations. The consultation topic Health Sciences Descriptors (DeCS) of the Virtual Health Library (VHL) portal was accessed.⁷ The search was conducted in the databases Latin American and Caribbean Literature in Health Sciences (LILACS), Nursing Database (BEDENF) and US National Library of Medicine (PubMed), in the period from 1 to 30 November 2017. In the advanced configuration, the descriptors were combined in alternation with the Boolean operator "AND", which retrieves records containing both terms.

In the third phase, the research was refined by applying the inclusion criteria previously established in the search strategy: full text; available online in Portuguese, Spanish and English; original articles from diverse scientific productions, including experience reports and studies published within the temporal clipping from 2011 to 2016.

The chosen temporal clipping based on the first global challenge in the field of patient safety, launched by the WHO, entitled "Clean Care is Safer Care", which began in 2005 and achieved, in 2010, 129 countries committed to support and promote hand hygiene campaigns, and one of these is Brazil, being a signatory of the World Alliance for Patient Safety.⁸

In the fourth phase, the abstracts of the retrieved studies were critically read, excluding duplicates, LIR studies and those whose goal, results or conclusion did not mention the strategies employed for hand hygiene and possible effects of these strategies for professionals' adherence in infection control at health organizations, i.e., studies that did not answer the research question (NARQ).

In order to facilitate the assessment and analysis of the data, an instrument was prepared to provide detailed information of the studies. Identification variables were extracted, such as: journal; country and year of publication; author; title; area of knowledge of the first author; design; main results; strategy employed to HH as described by the authors. The instrument intended, in addition to forming a database, to map out relevant points, integrate data and characterize the sample reviewed.

Focused on the design of the studies and based on the sample characteristics,⁹ the articles were organized according to six levels of evidence: level I - evidence resulting from meta-analysis of multiple controlled and randomized clinical studies; level II - evidence obtained in individual studies with experimental design; level III - quasi-experimental studies; level IV - evidence from descriptive studies (non-experimental) or with a qualitative approach; level V - evidence from case or experience reports; level VI - evidence based on expert opinions.

In the fifth stage, variations in the results and their main characteristics were discussed based on previous readings and literature. The common themes that emerged were described from a grouping of information⁸, discussing

categories of similarity between the strategies employed for the adherence to HH.

In the sixth phase, the review achieved the conclusion level, describing the strategies identified in the promotion and improvement of the adherence to the hand hygiene action among the multiprofessional team at health organizations. Finally, this manuscript presented the synthesis of knowledge produced with the purpose to disseminate the main results highlighted in this research to the scientific and academic community.

Figure 1 shows the flowchart describing the results obtained from the search strategy.

The search in the literature returned 5,543 articles and, of these, 1,233 were in PubMed; 2,155, in LILACS and 2,155 in BDNF. After applying the inclusion filters, the number of occurrences reduced: in PubMed were recovered 59 (4.78%) studies; in LILACS, 61 (2.83%) and in BDNF, 18 (0.83%) studies. Therefore, 138 articles were submitted to the reading of abstracts and the application of the exclusion criteria, generating a rejection of 123 articles: five were duplicates; three were LIR and 115 did not respond to the research question. Thus, the reviewed sample consisted of 15 articles.

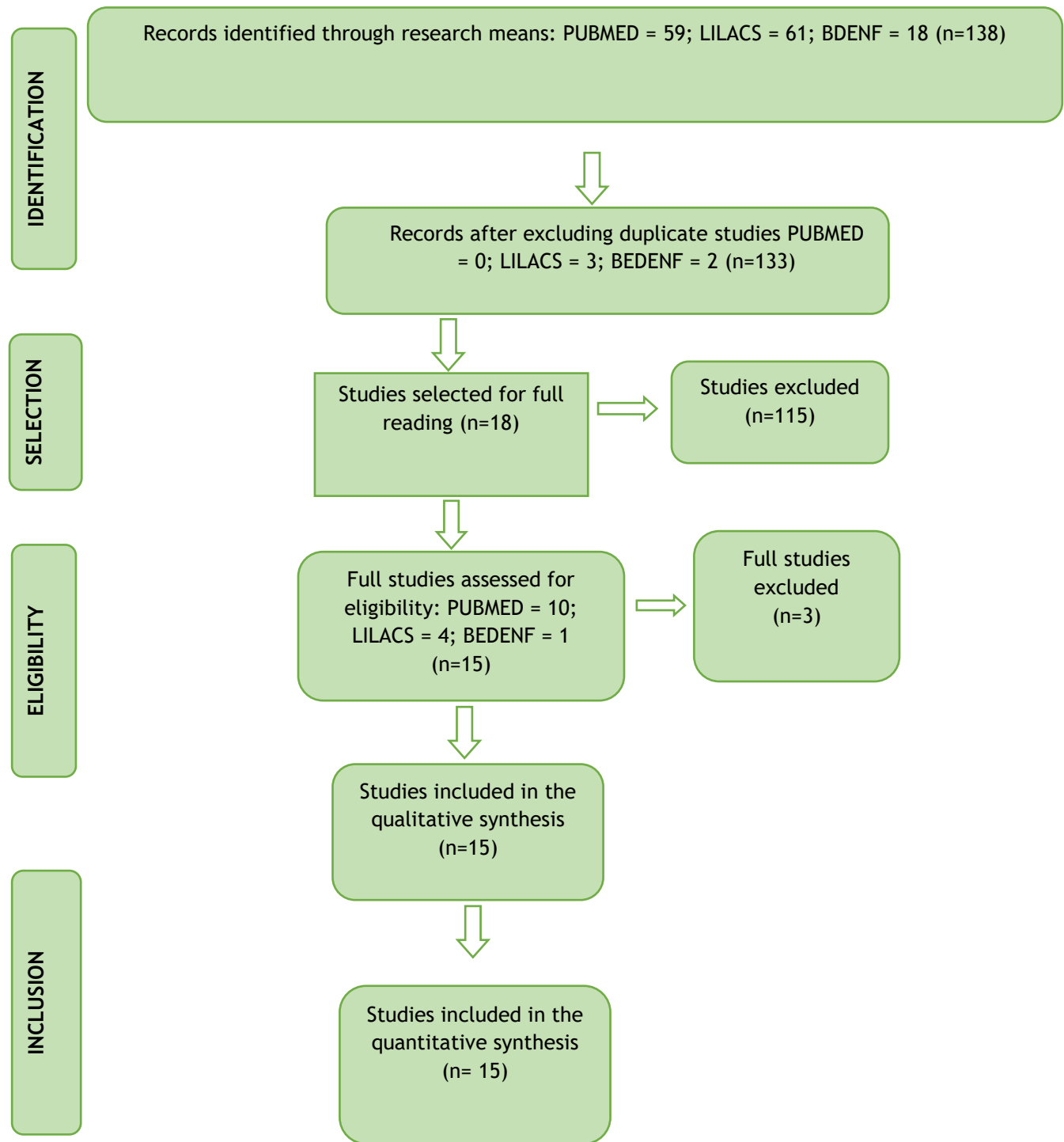


Figure 1. Flowchart of the studies selection. Niterói (RJ), Brazil, 2017.

Most studies are from European countries, 33.33%, and the English language prevails in 66.66% of the sample. Regarding the journal of publication, 60% of the publications belonged to journals directed to the field of Infectiology.

Considering the area of knowledge of the first author, most productions and publications on the HH theme within the search period (33.33%) were from Medicine, contrary to the scientific literature, which highlights the medical professional as the category most prone to circumvent the moments indicated to HH. Unfortunately, 26.66% of articles did not allow such identification, because, in some journals, the authorship is linked the author's institution, to the detriment of the area of knowledge to which they belong.

Regarding the design of researches, 40% of the articles corresponded to the level of evidence I. The level of evidence represents the confidence that can be deposited in the estimation of the effects achieved.

The careful reading of the articles shows expressive didactic similarity between the strategies identified to the HH, once 80% of the studies adopted the approach of the WHO for hand hygiene improvement. Most studies (60%) show relevant elements to describe the strategy employed for the adherence to HH associated to the increased amount of supplies of hygiene and quality of alcoholic products as a primary component of the strategy, while 53.33% associate the professionals' training as a factor that influences the change of practice to the HH. The findings showed the category focused on strategic components and modifiable factors

to the adherence to HH, leading to a reflection on the requirements necessary for a strategy to effectively produce effect on professionals and in the health organization for adherence to HH.

Figures 2 and 3 summarize the map with the main characteristics of the articles reviewed in relation to the strategies employed to hand hygiene at health organizations.

Journal	Author/Year	Title	Strategies identified for adherence to HH
Jt Comm J Qual Patient Saf	Conway, Riley, Saiman, Cohen, Alper, Larson. 2014	Implementation and impact of an automated group monitoring and feedback system to promote hand hygiene among health care personnel ¹⁰	Electronic HH monitoring system.
PLoS One	Stewardson, Iten, Camus, Gayet-Ageron, Caulfield, Lacey, et al. 2014	Efficacy of a new educational tool to improve Handrubbing technique amongst healthcare workers: a controlled, before-after study ¹¹	Electronic HH monitoring device.
Braz J Infect Dis	Uneke, Ndukwe, Oyibo, Nwakpu, Nnabu, Prasopa-Plaizier. 2014	Promotion of hand hygiene strengthening initiative in a Nigerian teaching hospital: implication for improved patient safety in low-income health facilities ¹²	WHO multimodal strategy.
Lancet Infect Dis	Allegranzi, Gayet-Ageron, Damani, Bengaly, McLaws, Moro, et al. 2013	Global implementation of WHO's multimodal strategy for improvement of hand hygiene: a quasi-experimental study ¹³	Gradual approach in four steps and WHO multimodal strategy.
Braz J Infect Dis	Yawson, Hesse. 2013	Hand Hygiene practices and resources in a teaching hospital in Gana ¹⁴	Observation and WHO multimodal strategy. ¹⁵
PLoS One	Mestre, Berbel, Tortajada, Alarcia, Coca, Gallemi, et al. 2012	"The 3/3 strategy": a successful multifaceted hospital wide hand hygiene intervention based on WHO and continuous quality improvement methodology ¹⁵	Continuous quality audit and WHO multimodal strategy.
Biomed Res Int	Farhoudi, Sanaei Dashti, Davani, Ghalebi, Sajadi, Taghizadeh, et al. 2016.	Impact of WHO Hand Hygiene Improvement Program Implementation: A Quase-Experimental Trial ¹⁶	WHO multimodal strategy.
Lancet Infect Dis	Stewardson, Sax, Gayet-Ageron, Touveneau, Longtin, Zingg, et al. 2016	Enhanced performance feedback and patient participation to improve hand hygiene compliance of health-care workers in the setting of established multimodal promotion: a single-centre, cluster randomised controlled trial ¹⁷	WHO multimodal strategy.
Infect Control Hosp Epidemiolog	Ho, Seto, Wong, Wong. 2012	Effectiveness of multifaceted hand hygiene interventions in long-term care facilities in Hong Kong: a cluster-randomized controlled trial ¹⁸	WHO multimodal strategy.
Infect Control Hosp Epidemiol	McInnes, Phillips, Middleton, Gould, et al. 2014	A qualitative study of senior hospital managers' views on current and innovative strategies to improve hand hygiene ¹⁹	WHO multimodal strategy.
Rev RENE	Giordani, Sonobe, Ezaia, Valério, Andrade. 2014	The nursing team's compliance with hand hygiene: motivational factors ²⁰	Motivational factors to HH, EPS, WHO multimodal strategy.
Rev Gaúcha Enferm	Bathke, Cunico, Maziero, Cauduro, Sarquis, Cruz EDA. 2013	Infrastructure and adherence to hand hygiene: challenges to patient safety ²¹	WHO multimodal strategy.
Rev Chil Infectol	Restrepo, Valderrama, Correa, Mazo, González,	Implementation of the strategy "Clean Care is Safer Care" in a third level hospital in Medellín, Colombia ²²	WHO multimodal strategy.

Ciênc Saúde	Cuid	Jaimes, et al. 2014	<i>Adesão à higienização das mãos e ao uso de equipamentos de proteção pessoal por profissionais de enfermagem na atenção básica em saúde</i> ²³ (Adherence to hand hygiene and personal protective equipment by nursing professionals in basic health care)	Direct HH observation and use of PPE.
		Rezende KCAD, Tipple, Siqueira, Alves, Salgado, Pereira. 2012		
Rev Infectol	Chil	Herrera-Usagre, Pérez-Pérez, Vázquez-Vázquez, Santana-López. 2014	Health professionals facing hand hygiene improvement: state-of-the-art strategies versus extended strategies ²⁴	WHO multimodal strategy.

Figure 2. Identification of articles reviewed in relation to the resrach question. Niterói (RJ), 2017.

Main characteristics of the review			N
Country of publication/Continent	of	Europe (Switzerland, Spain) ^{11,13,15,17,24}	5
		North America (USA) ¹⁰	1
		Africa (Nigeria, Ghana) ¹²⁻⁴	2
		Asia (Iran, China) ¹⁶⁻⁸	2
		Oceania (Australia) ¹⁹	1
		South America (Brazil, Colombia) ²⁰⁻³	4
Year of publication		2012 ^{15,18,23}	3
		2013 ^{13-4,21}	3
		2014 ^{10-2,19-20,22,24}	7
		2016 ¹⁶⁻⁷	2
First author's area of knowledge		Medicine ^{10-2,16-7}	5
		Nursing ^{19-21,23}	4
		Epidemiology ¹⁴	1
		Sociology ²⁴	1
Source language of publication		Not identified ^{13,15,18,22}	4
		English ⁹⁻¹⁸	10
		Portuguese ^{19-20,22}	3
Design		Spanish ^{22,24}	2
		Descriptive cross-sectional, randomized clinical trial, cluster RCTs ^{10,12,14,17-18,21,23}	7
		Before and after controlled ¹¹	1
		Quasi-experimental ^{13,16,22,24}	4
		Comparative ¹⁵	1
		Experimental ²⁰	1
Main results		Increased compliance and frequency of HH action ^{12-3,15-18,22,24}	8
		Structural change of the system ^{14,19,21,23}	4
		No improvement in HH, integration of Permanent Education as a strategy for future interventions ²⁰	1
		No impact or transient outcome ¹⁻²	2
Levels of evidence		I - Evidence from the meta-analysis of multiple randomized controlled clinical studies ^{10,12,14,17,21,23}	6
		II - Evidence from individual studies with experimental design ²⁰	1
		III - Evidence from quasi-experimental studies ^{13,16,22,24}	4
		IV - Evidence from descriptive (non-experimental) studies or qualitative approach ^{11,15,19}	3

Figure 3. Map of the main characteristics of the reviewed articles. Niterói (RJ), 2017.

DISCUSSION

The main point of this discussion relates to the category emerged from the results: Strategic components and modifiable factors to the adherence to HH.

Facing the HCAI issue with hand hygiene for prevention of the transmission of microorganisms means deciding to develop a HH program that applies strategies to improve practice among health professionals. Moreover, evidence demonstrates that strategies with varied and peculiar characteristics in multiple modes of approach

have produced positive effects, with substantial increased adherence to the practice after completing the HH improvement program.^{12,22,24}

Strategic components and modifiable factors to the adherence to hand hygiene

Among the strategies identified, 100% of them describe, at least, a strategic component belonging to the WHO guidelines for HH at health services^{12-21,24} and, even in studies^{10-1,23} that did not discuss WHO multimodal approach, these components emerge leading to outcomes, proving that factors mentioned as a barrier to the non-

adherence to HH are modifiable. The WHO proposes five key components to care practice in order to provoke and sustain the improvement of HH: change of system; training and education; evaluation and feedback; reminders in the workplace and institutional safety atmosphere.²⁵

Although modifying some factors/barriers is impracticable, studies^{10-1,14,16,20-1,23-4} invest in identifying those possible modifiable targets, in favor of eliminating professionals' difficulties to HH products and equipment, and ensuring adequate quantity and quality of supply for HH was the concern in the studies.^{13,18,22} New sinks in the corridors and wards were installed, as well as dispensers with alcoholic formulations placed on each bed and frequent replacement of paper towel.¹⁶⁻¹⁷ The investment in the component change of system resulted in significant improvement in the adherence to HH.¹⁵

This study was associated with the strategic component "continuous philosophy of quality improvement".¹⁵ After completing the improvement program, the adherence rates increased from 29.6% to 72.7%,¹⁶ and it is interesting to observe that the exchange of the alcohol gel brand, previously used, had an important impact. A new formulation of another supplier showed high acceptance by the team, improving the rate of consumption and frequency.²²

There was a positive effect, by means of measures of change in infrastructure with the continuous supply of materials, among other necessary resources for HH, especially in the adherence to HH among professionals, at all locations where the strategy was applied.¹³ The adherence to HH increased from 27% to 60% in the first group observed and 22.2% to 48% in the second group with the modernization of equipment that dispenses alcohol 70%.¹⁸

The attempt to change the system as a single strategic component resulted in outcomes below the expectation in the study,¹⁰ since there was the hypothesis that the frequency of hand hygiene would increase when using an automated system for monitoring and feedback of hand hygiene. Dispensers that generate inaudible electronic signals each time a lever is pushed to release the HH product replaced all existing dispensers for HH products.

Despite the engineering and technology available for this device, the results, according to the authors: "After beginning the trainings, the HH increased an average of 0.17 events/hour of patient in inpatient units. In

outpatient units, the HH performance did not change significantly".¹⁰

They are compelling evidence that some factors influencing adherence to HH are modifiable when subjected to these strategies. Providing all health organization professionals a regular training on the importance of hand hygiene becomes a focus of education and training component.²⁵ A study¹¹ adopted as strategy a device that uses video technology to teach the technique of HH to professionals. This device is called "SureWash", an interactive equipment, which reproduces the technique of HH on a computer screen and the professional, in front of the screen, repeats the steps following the guidelines of the video and, meanwhile, the device shoots the professional's poses and sends the image in real time to the infection control staff that monitors the professional's performance.

A study¹⁶ that included all the hospital services highlights the integration between teams and, for the first time, medicine students participate in educational sessions for prevention and control of infection before their clinical training.

As an example of the study,¹⁸ posters and reminders of HH throughout sectors and groups of conversations about health, using video clips with WHO guidelines, were used to remind professionals of the HH activities. Other aspects relating to the training/education component were listed, which were the interventions with training using WHO direct observation technique, with results pointing to 550 complied HH actions in 815 observed opportunities.¹²

A study²² evaluated, through observation, the perception and knowledge of the managers and hospital workers on the importance and impact of hand hygiene. The observers were through videos reproducing real care situations, including the awareness about the importance of hand hygiene, the use of audiovisual aids and the delivery of instructions on how, when and why they performing hand hygiene.²² "My Five Moments" posters were settled, with instructions on how to make the friction in the HH technique, in all rooms and in dispensers and sinks, performing a contest to encourage HH compliance at all indicated moments.²²

There were incentive and encouragement to professionals in the study¹⁹ that raised the qualification based on the five moments of hand hygiene, inviting professionals to advise whether the non-conformity of hand hygiene could be a type of healthcare mistake,

considering their opinions on the change of systems for personal responsibility for improving compliance.¹⁹ A study¹⁰ highlighted as a valuable tip the recognition that continuous education, incorporated into the daily routine of services, is an allied strategy to cope with HCAI and the main way to achieve better results in the development of individual and collective work.

Studies,^{13,15-6,22} highlight the component, the evaluation and feedback providing sustainable effects in improving the HH. The compliance was expressed by the proportion of opportunities for HH actions, assessing the sustainability of activities centered on WHO¹⁴ strategy in the long term. The feedback was evaluated with statistical control charts, presented bimonthly to teams and, along with the teams, a process for proactive corrective actions was implemented.¹⁵ Human and financial resources were sought, identifying a leader to lead the program and the project became one of the hospital priorities.¹⁶ The observation feedback was announced through sessions of hospital quality improvement,¹⁵⁻⁶ and the primary result was the professional's hand hygiene compliance¹⁶ and, still according to the authors, "The participants were invited to give their suggestions for new strategies to improve compliance with the hand hygiene or ideas about the strengthening of existing strategies".¹⁹ A continuous action plan was prepared to implement the strategy in other areas of the hospital.²²

Another study¹⁴ assessed the HH conformity between doctors and nurses, using WHO conformity form. According to the authors: "The HH conformity related to the care of doctors and nurses was limited and the basic HH resources were deficient in all services". The HH conformity between doctors varied from 9.2% to 57% and from 9.6% to 54% between nurses.

Besides monitoring HH practices and the infrastructure, along with perceptions and knowledge, providing the professionals a feedback about their performance and results is of extreme importance.²⁵ They reminders in the workplace became essential in the studies,^{16,19} once HH colorful posters were distributed in different sizes that showed the five moments for HH and the right techniques. Five posters were placed in the infection prevention and control unit, in strategic areas within the hospital.^{16,21} The objective of these components is to alert and remind professionals of the importance of HH, indications and appropriate procedures to accomplish it.²⁵

The guarantee of the institutional safety atmosphere appears in the most relevant statements from a study,¹⁰ because "the interest in the work, the flexibility to prioritize care actions, autonomy in the nursing care implementation and considering workers' opinion in the process of acquiring supplies for hand hygiene represent influential reasons to adherence".

Therefore, whatever the plan of action, this should involve professionals at all stages of the construction process of a HH program. The HH practice must have a moral sense and the professional action should be guided by their responsible essence and not by imposed standards.²⁶

CONCLUSION

The HH theme is complex, multicausal and requires coordination between the policies of management and scientific knowledge in the construction of a HH program for a safe care at health organizations. The findings of this study are available for the scientific community, managers and infection control committee, since they evidence the components that make up a multi-faceted strategy in multimodes for improving the HH.

In this review, the WHO multimodal strategy was the chosen method employed in the implementation of the HH improvement program.

Therefore: (a) "My five moments" approach for improving HH is a reliable and successful method in interventions implemented focused on HCAI surveillance and prevention; b) the combination of different strategies, such as written reminders, movie messages, playful activity, continuing education, participation of patients and relatives, among other things, produces resonance effects, which last longer on the adherence; c) the choice of strategy to be implemented by the health organization must be guided by the investigation of potential barriers to the lack of adherence and potential facilitators in compliance behavior in relation to the HH practice; d) it is important to research and invest in new technologies in order to integrate them in the HH program. The adherence to the HH practice increases by means of automated systems of last generation for the dispensation of alcoholic formulations; however, if adopted as the only intervention, the levels of performance may be transient.

Despite recognizing the importance of multimodal strategy, the health field still needs to expand investment and researches on practical tools for assessing the impact of

strategies for the promotion of hand hygiene at health organizations.

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