

## FACTORS RELATED TO POOR ADHERENCE TO HAND HYGIENE IN HEALTHCARE DELIVERY: A REFLECTION

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### ABSTRACT

Hand hygiene (HH) is a pioneering step for the control of health care associated infections, being recognized as an effective and cost-effective measure. However, poor adherence to this practice has been described worldwide by health professionals. Thus, there was a discussion on the possible reasons that influence non-adherence to HH, highlighting the following aspects: **materials**, related to lack of supplies and use of solutions that cause skin irritation; **behavioral**, related to cultural aspects and the role played by religions; and **institutional**, referring to the safety culture of the institution, training, personal motivation, co-accountability for infection control and other incentives. In this context it is necessary to consider the habits and customs of each population, encouraging the practice of HH, monitoring this process with feedback to professionals involved in the care process aiming patient safety and quality of care provided.

**Keywords:** Handwashing. Infection control. Health personnel.

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### INTRODUCTION

One of the main public health problems that worry the society, both the Brazilian and the international one, is the Healthcare-associated infections (HAI). The World Health Organization (WHO) estimates that about two million HAI happen annually in the USA, leading to between 60 and 90 thousand deaths<sup>(1)</sup>. In Brazil, there is no systematized data about the occurrence of the HAI or about its cost. Although most of the hospitals have an Infection Control Committee and conduct some type of surveillance, there is no standardization for the method of data collection, and most of the institutions do not have reliable indicators<sup>(2)</sup>.

The fact that the HAI extend the hospitalization period is recognized worldwide, causing economical, social, professional and personal damages to the patients, their family and the hospital institution. When it is about resistant microorganisms, the costs related to the treatment and the mortality rates are even more elevated<sup>(1)</sup>.

The struggle against the bacterial resistance started being overcome with the introduction of penicillin (an antibiotic therapy discovery), around 1928, a fact that caused great excitement

among the researchers due to the possibility of fighting the infections. From then on, the indiscriminate use of antibiotics, in the 1950s, led to the alarming recrudescence of the bacterial resistance, reaching all of the continents<sup>(3)</sup>.

The bacterial resistance can be defined as the non-susceptibility of some microorganisms (mostly the bacteria) to one or more antimicrobials agents. It has a straight relation both about the inadequate use of antimicrobials and the non adherence of the healthcare professionals to the measures of pattern-precaution, specially the hand hygiene<sup>(1)</sup>.

This fact is evident with the finding of resistant pathogens dissemination through the hands of the healthcare workers, something which corroborates the preoccupation with the practice of hand hygiene, a subject which has become the focus of the discussions among its researchers, as an attempt to search for strategies that aim to minimize such problem, counting on the participation of all the people involved in the assistance process, in such a way it becomes a priority in the control of the microorganisms transmission<sup>(1)</sup>.

The hand hygiene is a simple measure, but it is really efficient in order to fight the infections due to its practicality, low cost and above all, high cost-benefit for the prevention and the

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control of HAI<sup>(1)</sup>.

In the last years it has been recorded the occurrence of frequent epidemics, which have directly involved the transmission person-person, demanding the discussion of hygiene habits again, among them, the hand hygiene as a priority, taking into consideration the impact of the SARS (Severe Acute Respiratory Syndrome) and the influenza H1N1.

Considering the fact that such epidemics are respiratory infections, we emphasize that according to the Centers for Disease Control and Prevention (CDC) and the WHO, besides the precautions with the diseases transmitted by the air and/or droplets, the frequent effort in order to improve the adherence to the practices of HH in the control of transmission calls attention<sup>(4,5)</sup>.

The World Health Organization has been promoting campaigns to propose strategies which aim to improve the adherence to the hand hygiene among the healthcare professionals. The *Clean Care is Safer Care - The First Global Patient Safety Challenge*, that emerged in 2005, has been trying to assure that the hand hygiene is a priority all over the world when it is about the care towards the patient, guaranteeing then, the reduction of the diseases transmission<sup>(1)</sup>.

According to the WHO, the hand hygiene must happen essentially before the contact with the patient, before performing invasive procedures, after the contact with body fluids and inanimate surfaces near the patient, after taking off gloves, when the hands are visibly dirty, after exposition to spore forming microorganisms and when there is a change of the same patient from a contaminated to a clean place<sup>(1)</sup>.

The WHO even recommends together with the CDC that the healthcare professionals must clean their hands with water and soap all the time they are dirty, and the alcoholic solutions are indicated for all the other situations of hand hygiene during the assistance to the patient<sup>(1,5)</sup>.

Although there are no doubts concerning the efficiency of hand hygiene and its simplicity, some studies reveal a low adherence to this practice<sup>(6-8)</sup>. Furthermore, there are some records of the domain, by a great part of the professionals, of the knowledge about the moment when they must perform the HH.

However, the adherence rate is still fall short of what was expected<sup>(9,10)</sup>.

Based on the above information, this study intended to conduct a reflection about the possible factors, documented in several regions of the world, related to the low adherence to the hand hygiene in healthcare.

## DEVELOPMENT

It is a reflexive study based on articles published in journals written in English, Spanish and Portuguese, through the portals of the Coordination for the Improvement of Higher Level Personnel (CAPES), Virtual Health Library (BVS) and the National Library of Medicine (PubMed). The used database was: Latin-American and Caribbean Health Sciences Literature Database (LILACS), Medical Literature Analysis and Retrieval System Online (MEDLINE®), Scientific Electronic Library Online (SciELO), Isi Web of Knowledge and SCOPUS. It was still used some manuscripts cited in the references of the found articles, such as guidelines of health agencies, as the WHO and CDC, for the discussion of the found data.

Several strategies have been implanted in order to elevate the adherence to hand hygiene recorded. However, some reasons for the non-adherence to hand washing among the healthcare workers have been the focus of various studies in different countries in all continents<sup>(1,11-13)</sup>.

Based on these studies, there are multiple reasons why the professionals do not adhere to the HH which can be divided in: materials; behavioral; or institutional (Picture 1).

Among the mentioned aspects, the skin irritation constitutes the main pointed reason by the WHO and the professionals as well, being divided in two groups: a) symptoms as dry skin, with irritation, cracks and even bleeding; and b) allergic reactions and dermatitis<sup>(1,14)</sup>.

Although there are not ideal products to be used for the HH, we must opt for the ones that, in addition to be efficient in the pathogens elimination, do not cause any damage to the professionals skin<sup>(1)</sup>.

**Picture 1.** Factors that influence the healthcare workers adherence to HH, according to the factor nature.

Material Factors		- Adequate supply for the hand hygiene (fast drying alcohol gel, sinks with automatic faucets, dispensers located near the patients, etc.)
		- Solutions that do not cause skin irritation
Social and Behavioral Factors	Intrapersonal	- Higher Education
		- Knowledge
		- Personality
		- Culture and religion
	Interpersonal	- Social identity
		- Preoccupation with the opinion of others (pressure to the society ideals)
- Society role		
Institutional factors		- Feedback
		- Workload
		- Rewards and approvals
		- Encouragement of active participation in programs of HH

Source: Adaptation World Health Organization. WHO guidelines on hand hygiene in health care- First Global Patient Safety Challenge Clean Care is Safer Care. Geneva: WHO; 2009. p. 72-77.

Other reasons, such as the inadequate supply arrangement for the HH, are also pointed by the WHO as possible ones for the poor HH adherence rate. Some studies reveal that automatic sinks and the better placement of the alcohol dispensers ease the HH adherence<sup>(1,14)</sup>.

Apart from the marked causes, some authors alert for the behavior differences presented by the professionals of the same institution, showing this way, the influence of the individual characteristics in their attitudes, such as the HH<sup>(8,13-15)</sup>.

Taking into consideration the individual characteristics, it is observed that both intrapersonal and interpersonal aspects influence the professionals attitudes<sup>(13,14)</sup>.

Among the intrapersonal factors the warning emerges regarding the different professional categories, level of knowledge, perception of pathogens transmission risk and benefit for the professional and/or patient and risk situations when intensive care is needed, in which the needs of the patient are taken as a priority. Yet, we must consider the different personalities and, finally, the divergent relations among professionals and patients<sup>(1,8,11-12)</sup>.

There are professionals who do not agree with the WHO recommended rules, who prefer to use gloves instead of performing the HH. This fact reveals the lack of knowledge or the

disregard of these professionals concerning the recommendations, as they describe that the use of gloves do not exclude the necessity of HH<sup>(1)</sup>.

Another example related to the level of the professionals' information concerns the lack of knowledge of the HH opportunities, something which is crucial, coming from the lack of familiarity with the hand hygiene guides and also, from the inadequate use of gloves<sup>(1,14,16,17)</sup>. It can be shown through the comparison between some self-reported and observed data. Even when the professionals believe they have adhered to the HH, according to what is recommended, some observations indicate that there was not 100% adherence<sup>(9)</sup>.

Lately, the aspects related to the different cultures and religions of the individuals have been emphasized. Researchers attempt to find the influence of these factors during the assistance delivered to the patient concerning the HH<sup>(1,13,15,18)</sup>.

One of the ethnicity influences on the HH habits and the consequences for the population health derive from the XIV century, when with the advent of the Black death, the Jewish presented lower mortality rates than the other people, probably due to the hand hygiene ritual, from the Jewish faith<sup>(10)</sup>. In some beliefs, the hand hygiene can happen because of hygienic reasons, during religious ceremonies, something

which can straightly influence the practices of the individuals<sup>(18)</sup>.

The necessity of the HH can be more clearly observed by people from certain religions, and some opportunities of HH can become problems for specific religious groups<sup>(15)</sup>.

An example of a possible interference of some religions (Buddhism, Hinduism and Islamism) in the practices of HH of the professionals is the prohibition of alcohol use<sup>(15,18)</sup>. This fact becomes more alarming with the growing recommendations that alcoholic solutions, in some situations, are more efficient than only water and soap or other antiseptic solutions<sup>(1,15)</sup>.

In a conference held in Saudi Arabia, in 2002, Islamite people allowed the use of alcohol in medicinal products, once there are not similar ones<sup>(12)</sup>. Even then, some professionals refuse to use alcoholic solutions<sup>(15)</sup>. This fact is due to the little evidence of the consequences that the alcohol can bring after the skin absorption or inhalation, although some studies demonstrate that the absorbed quantity of alcohol is low and does not reach the minimum levels of toxicity in human beings<sup>(18)</sup>.

Still, about the impediments to the use of alcoholic solutions, we warn about the fact that in more humid countries and in the hottest ones there can be a greater sensation of dirty skin and adherence to the hand washing with water and soap, in contrast to the use of alcoholic solutions<sup>(18)</sup>.

Culture also influences the hand hygiene habits. Some African regions, for instance, have the habit of keeping bowls at the houses doors so that the visitors wash their faces and hands before coming into the houses<sup>(18)</sup>.

There is no evidence in the literature about the fact that religion or culture can actively interfere in the practices of hand hygiene of the healthcare workers, confirming this way, the necessity of performing more studies about this subject.

The most commonly reported interpersonal aspect refers to the influence of more experienced professionals who do not adhere to the recommendations of infections control as something determinative to decrease the adherence among the younger professionals. Medicine students report that they not feel

motivated to adhere to the HH when the preceptor or the rest of the group do not adhere to it as well<sup>(12)</sup>. This reveals the important role represented by the society and the influence of the opinion leader on a group.

Based on the institutional factors, there are reports in the literature that the professionals consider the lack of feedback, with the return of the service rates and the researches results, as a barrier for the adherence to the HH, because they generate the lack of information regarding the real impacts of the hand hygiene in the HAI rates<sup>(12)</sup>.

Some studies point the fact that the use of feedback together with other measures can ease the growing of adherence to the HH rates<sup>(19,20)</sup>.

Another frequently cited characteristic related to institutional aspects is the security culture appreciation adopted by the institution, something that can be expressed through the workload which is caused, mainly, by the reduced number of professionals. As a consequence, some studies point a relation between the weekdays and the adherence to the HH practice, suggesting that the tiredness and the fatigue, mostly present at weekends, contribute towards a poorer adherence<sup>(1,11,12)</sup>.

The institution plays an important role in motivating the professionals to develop the HH practices. It is the function of the Infection Control Committee professionals in charge of assisting health to establish some strategies to improve the adherence rates.

Among the found strategies, the initiative of an American hospital of involving the patients in the process of improving the HH rates deserves to be highlighted, as it encourages them to remind the healthcare workers of performing the HH before and after assisting them<sup>(10)</sup>.

## FINAL CONSIDERATIONS

The low adherence rates to HH are one of the greater preoccupations of the healthcare centers all over the world. Some studies prove that interventions must be done in order to reverse this situation immediately and continuously.

Due to the reasons diversity (materials, behavioral and institutional) that lead the professionals to not adhere to the HH practices, the healthcare institutions must make an effort not only

to improve the work conditions, acting on material and institutional factors, but also to rethink their professionals' profile. It is necessary to verify the habits of each specific population so that, this way, it is possible to conduct more efficient interventions and then, make an attempt to decrease the possible barriers that influence the adherence to the hand washing practices.

It is highly important to promote updates among the professionals, with the provision of the most recent guidelines about HH, besides

providing them a feedback about the conducted collection in each institution that prove the importance and influence of the HH for the control of HAI.

The encouragement of a greater adherence to the HH must start since the children's education, and the participation of universities is fundamental. They must give more emphasis to the HH, especially during the healthcare workers training, as part of the opinion leaders' professionals influence.

## FATORES RELACIONADOS À BAIXA ADEÇÃO À HIGIENIZAÇÃO DAS MÃOS NA ÁREA DA SAÚDE: UMA REFLEXÃO

### RESUMO

A higienização das mãos (HM) é uma medida pioneira para o controle das infecções relacionadas ao cuidar em saúde, de reconhecida eficácia e alto custo-benefício. Ainda assim, tem sido descrita em todo o mundo a baixa adesão a esta prática por profissionais da saúde. Diante disso, realizou-se uma reflexão sobre as possíveis razões que influenciam a não adesão à HM, destacando-se os seguintes aspectos: materiais, relacionados à falta de suprimentos e ao uso de soluções que causam irritações na pele; comportamentais, voltados para fatores culturais e o papel desempenhado pelas religiões; e institucionais, referindo-se à cultura de segurança da instituição e a treinamentos, motivação pessoal, corresponsabilização pelo controle das infecções e outros incentivos. Neste contexto, é preciso considerar os hábitos e os costumes de cada população ao encorajar as práticas de HM, monitorando este processo com feedback aos profissionais envolvidos no processo assistencial, visando à segurança do paciente e à qualidade do cuidado prestado.

**Palavras-chave:** Lavagem de mãos. Controle de infecções. Pessoal de saúde.

## FACTORES RELACIONADOS CON LA BAJA ADHERENCIA A LA HIGIENE DE MANOS EN LA SALUD: UNA REFLEXIÓN

### RESUMEN

La higiene de las manos (HM) es una medida pionera para el control de las infecciones relacionadas a la atención en salud, de reconocida eficacia y alto costo-beneficio. Mismo así, se ha descrita en todo el mundo la baja adhesión a esta práctica por los profesionales de la salud. Por lo tanto, se realizó una reflexión sobre las posibles razones que influyen en la no adhesión a la HM, destacándose los siguientes aspectos: materiales, relacionados con la falta de suministros y al uso de soluciones que causan irritación en la piel; de comportamientos, dirigidos a factores culturales y al papel desempeñado por las religiones; e institucionales, refiriéndose a la cultura de seguridad de la institución y a entrenamientos, motivación personal, corresponsabilidad por el control de las infecciones y otros incentivos. En este contexto, es necesario tener en cuenta los hábitos y las costumbres de cada población al estimular las prácticas de la HM, averiguando este proceso con una respuesta a los profesionales involucrados en el proceso de atención, pretendiendo la seguridad del paciente y la calidad de la atención prestada.

**Palabras clave:** Lavado de manos. Control de infecciones. Personal de salud.

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