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## Contribution of continuing education about hand hygiene in the fight against COVID-19: an experience report

Contribuição da educação continuada sobre higienização das mãos no combate à COVID-19: relato de experiência

Contribución de la educación continua sobre higiene de manos en la lucha contra el COVID-19: relato de experiencia

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### ABSTRACT

**Introduction:** Amid COVID-19 pandemic, the use of protective measures, as hand hygiene, is necessary due the easiness of transmission through contact. **Aim:** To report the developed activities about hand hygiene, before the pandemic, in a university extension program which can contribute to reduce COVID-19 transmission within health service. **Outlining:** Descriptive study with qualitative approach, experience report type, of the activities carried out in the extension project “Surveillance of Risk Factors and Protection for Healthcare Related Infection by the Search and Notification of Cases”, the year of 2019. **Results:** The developed activities ranged from the monitoring of the practice of hand hygiene until the development of educational activities which aim the adhesion by the professionals, being an important practice for controlling infections that can be transmitted through the hands. **Implications:** The increase of hand hygiene adhesion, through educational activities, can contribute to the reduction of COVID-19 transmission risk within the hospital services.

### DESCRIPTORS

Health Education; Infection Control; Hand Disinfection; SARS-COV-2.

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## INTRODUCTION

COVID-19 is a disease caused by the virus of the family Coronaviridae, SAR-CoV-2, which arose in the city of Wuhan, China, in the late December 2019 and dispersed all over the world, configuring as a pandemic after the positioning of the World Health Organization (WHO) on March 11, 2020.<sup>1</sup> Until March 29, 2021, 126,890,643 cases were notified, involving 2,778,619 deaths in the world.<sup>2</sup> In Brazil, the data correspond to 12,573,615 cases and 313,866 deaths. In Piauí, in the Northeast region, 202,230 cases were confirmed with 4,028 deaths.<sup>3</sup>

In view of SARS-COV-2 transmission mechanism, which occurs through respiratory droplets, body fluids, fecal-oral contact and through contaminated surfaces,<sup>4</sup> and the lack of effective treatments, the use of protective measures, among the ones it is valid to name the social distancing, the use of personal protective equipments by health professionals, the use of face masks by general population and Hand Hygiene (HH), demonstrate to be important preventive and control tools.<sup>5</sup>

Among the quoted protective measures, HH deserves highlight once its intent is to remove the microorganisms that colonize the superficial layers of the skin, as well as sweat, the oiliness, the death cells and/or the dirt propitious to the permanence and to the proliferation of microorganisms, depending on the applied technique (simple cleaning, antiseptic cleaning, friction with antiseptic and surgical antisepsis or preoperative preparation).<sup>6</sup>

Regarding their employment for the prevention of SARS-COV-2, the widespread techniques are the simple cleaning (performed with water and disinfectant, usually liquid soap, in a 40 to 60 seconds period) and hand-rubbing with antiseptic (performed with alcoholic preparations, generally the 70% isopropyl alcohol one, in a 20 to 30 seconds period). That, however, is most recommended to be used when the hands are not visibly dirty.<sup>6-7</sup>

The simple cleaning and the hand rubbing are similar, differing only in relation to the utilized

product, the rinse before and after the use of the disinfectant and the hands' drying, because these steps are not observed in the technique with the antiseptic product. The simple technique approaches the following steps: removing adornments; to open the faucet and get the hands wet, avoiding contact with the sink; apply enough liquid soap in the palms to cover all surfaces of the hands; to lather the palms, rubbing them; to rub right hand palm into left hand back, interweaving the fingers and vice versa; to interweave the fingers and to rub the interdigital space, to rub the back of one hand's fingers into the palm of the opposite hand, holding the fingers, with a forward and back movement and vice versa; to rub the right thumb, with the aid of the left hand palm, making a circular movement and vice versa; to rub fingers' pulps and the nails of the left hand against right hand's palm, closed as a shell, making circular movement and vice versa; to rinse off the hands, withdrawing soap's residues. Avoiding direct contact of the soapy hands with the faucet and dry the hands with disposable paper towel.<sup>8</sup>

Aiming to reduce the infection risks among the health professionals and patients and the dissemination of microorganisms through the environment, opportune circumstances were recommended for HH, recognized as the "five moments for HH", namely: 1) before touching the patient; 2) before carrying out clean/aseptic procedure; 3) after risk of exposure to body fluids; 4) after touching the patient and 5) after touching surfaces by the patient.<sup>8</sup>

In this context, the HH is a measure of great relevance for the reduction of SARS-COV-2 transmission, once the hands are considered vectors for the transmission of Healthcare Assistance Related Infections (HARI), both in symptomatic and asymptomatic stages of the infections, besides that, are associated to the self-inoculation through the constant touch in the T zone (region of the eyes, nose, and mouth). For this reason, the high adherence to the HH must reduce the possibility of

pathogens' transmission.<sup>9</sup>

In this way, the use of educational strategies which aim to improve HH adhesion, not only as outcome of the pandemic caused by SARS-COV-2, but as a continuous use instrument for the qualification of the professionals who provide care inside the health system, proves necessary. Therefore, this article aims to report the activities developed on HH, before the pandemic, in a university extension project, which can contribute for the reduction of COVID-19 transmission inside the health services.

## METHOD

It is a descriptive study, with qualitative approach, experience report type, from the activities carried out in the university extension program "Surveillance of Risk Factors and Protection for Healthcare Related Infection through the Search and Notification of Cases", approaching the HH thematic, in the year 2019, developed at the Hospital Infection Control Service (HICS) of a federal hospital of Piauí.

The HICS, along the Health Surveillance Unity, is one of the sectors that constitute the Health Surveillance Service, which corresponds to the Health Care Management, that is bonded to the Superintendence. Within the SCIH, nurses, licensed practical nurses and infectious diseases doctors work together to prevent and reduce the incidence or severity of infections inside the hospital. In addition, the sector receives assistance from two extension projects, including the one above mentioned.

Nine nursing undergrads initially partook the extension program, including students from 5<sup>o</sup> to 8<sup>o</sup> term of the graduation, a coordinator (nurse), responsible by the project, and the HICS team. The project ran from Monday to Saturday, in four-hours shifts, in which the students were distributed on a work schedule, with days in which up to two students participated in the same shift, due their availability as to university's workload.

Among the other activities performed in the HICS together the extension project, the ones which

will be dealt with here had the HH as central point, since its practice until the use of strategies to enhance the adhesion, through the application of the observation form of hands' cleaning proposed in the Guide to Implementation - WHO Multimodal Hand Hygiene Improvement Strategy Multimodal,<sup>10</sup> through trainings, creation of audiovisual resources and approaches to professionals, usually called "educational blitz".

The application of the observation form of HM is carried out daily in the whole hospital by HISC's licensed practical nurses and by the students, however, due to the participation of another extension project at the same sector, the responsibility by the observation is shared among the stations and Intensive Care Unit (ICU), thus, the team of students of the in-question project restricts the observation to the ICU.

At the ICU, a 15 to 20 minutes longer direct observation was performed, in which a student observed the health professionals on their routines, paying attention for the five moments for HH. Before starting the observation, the student filled some information of form's head (country, city, hospital, id of the place, observer's initials, date, start/end, session duration and name of the department/clinic), then, chose some bed to observe the cares took, as this reduces the distraction and confusion in the identification of the professionals, once there are so many professionals in the ICU. Once observation started, some information of the observation grid was filled (professional category, opportunity, indication, and action). The other information was filled by a HICS professional, responsible for compiling the data and for making the calculations.

The trainings promoted by the HICS are carried out inside the hospital, under the command of the head, in which the extension project works formulating proposals that suit professionals, sectors with their several environments and routines and the thematic to be worked on.

As example of proposal, the students designed educational videos, that were recorded at the Laboratory of Simulation of Clinical Practices on Nursing and Health (SIMENFS), at the Department of Nursing in a federal university, following a guide with some care routines presented by the nurse responsible by the sector, that, after were rearranged by project's responsible professor and by the students.<sup>11</sup>

Other proposal, the "educational blitz", was carried out by HICS team in several places of the hospital, with the students helping in the approach of professionals so that the surveillance team could work the orientations about HH and the use of adornments, because the in-question hospital intended to formalize, posteriorly, the zero-adornment standard among their employees and students in wholes medical care and administrative areas.<sup>12</sup>

## RESULTS AND DISCUSSION

The university extension program "Surveillance of Risk Factors and Protection for Healthcare Related Infection through Search and Notification of Cases" aims to provide, to the Nursing undergrads, the theoretical-practical knowledge about the proceedings of surveillance of the active search of risk factors and of the cases of HRI, through their insertion in the prevention process, production and spreading of didactic material and development of prevention and control strategies for HRI, generally highlighted in the execution of protocols and checklists of infection prevention.

The protocols carried out by the students include safety surgery, urinary tract infection, central venous access, verification of the checklist of invasive devices, consolidation of the antibiotic use sheets and HH observation form. The development of these activities significantly corroborates for the sector, once the collection of this data enables the obtaining of relevant information for sector's

management, as well as the directing for prevention, handling, and infection control actions.

It is worth highlighting that in the absence of students at the service, these activities are developed by the HICS professionals, however, the presence of students is well esteemed at the sector, since they contribute for softening the duty overload and collaborate proposing creative activities for the resolution of problems and elaboration of educational actions.

Keeping in mind the pandemic scenario caused by COVID-19, where standard precaution measures are indispensable in the prevention and control of this disease, the actions aimed at HH deserve to be highlight, seeing it is an individual procedure, simple and efficient in the prevention and control of infections caused by hands that were contaminated during the period of care delivered to the patient.

Due the relevance of this practice by the health professionals, not only in moments like this we are going through, but as a quite of effective measure for morbidity and mortality reduction and reduction of the costs in hospitalization due infectious diseases, is that HICS constantly carries out activities focused on HH thematic, such activities range from the monitoring of professionals' adhesion until the performing of trainings.<sup>14</sup>

The monitoring of professionals' adhesion is done by the students using HH observation formulary, which in turn enables to evaluate professional's adhesion to HH, the sort and quality of the employed technique, since they generate quantitative data that allows, after assessment, to determine suitable interventions for the promotion, education, and training. In this way, it permits to analyze the impact of the interventions, to adjust the educational materials and mechanisms and to measure the enhances in the adhesion.<sup>6</sup>

The adhesion to the HH is a worldwide concern, seeing that there still exist low levels of accordance by the health professionals both in developed countries and developing ones, with rates

that can reach below 20%.<sup>15</sup> Despite that, there exist studies which point out that interventionist and educational measures contribute with positive effects in the behavior, knowledge, and quality of HH, being important for the continuous training of the professionals.<sup>16</sup>

In view of that, the HICS unity provides trainings all over the year for the health professionals of the institution, once these measures have great importance in the seek by change and improvement of service's quality through learning, a resource that must focus the adaptation to changes, improving in the decisions, augment in efficiency as to the performance of functions, reduction of organizational errors and changes in the behavior, especially in times of pandemic.<sup>17</sup>

The trainings fulfilled by HICS along with the extension project use several educational resources as audio-visual ones, conversation wheel, practical simulation, dynamic activities, lectures, which are often extended for the patients as a way to qualify these persons to work as barriers against the bad HH practices by the professionals. Such trainings are applied along with the HH observation form.

To achieve success, the trainings must be performed jointly with the instructors and partakers, comparing ideas, and discussing proposals, enabling a critical thought for reaching the aims.<sup>17</sup> Hence, at HICS request, the students elaborated a sequence of educational videos on the five moments of HH and the lack of professionals' adherence to be used as support tool.

The students role-played as health professionals in their care routines. In this way, five videos were produced, in which the portrayed situations were: 1) Professional shaking patient's hand, which presents two of the five moments for HH performing, the first and the fourth, before and after touching the patient, respectively; 2) While bandaging, represents the second moment, before performing an aseptic procedure; 3) Handling the collection bag of the indwelling urinary catheter and

4) Diapers' changing, both present a situation with exposure risk to body fluids, which is equivalent to the third moment; 5) Elevation of bed's rail, which is a situation in which the professional becomes into contact with areas close to the patient, referring to the fifth moment.

During the construction of the applicable technologies, the discussion and the analysis are also necessary, emerging the why they have been used. Such questionings allowed the students to not stay restrained to errors' cataloguing, but to infer that the fails in HH adherence are multicausal, including lack of training and experience, lack of knowledge on the importance of the procedure, failure in time management, high workload, nonexistence of adequate facilities for the practice of the procedure, among other.<sup>16</sup>

By raising the questions during the elaboration of the educational strategies makes the application of the training to take more effective proportions, especially when these question are taken to the target audience, making it to participate, making people exert their criticality, something that happened during the reproduction of the videos and led the attendees to reflect their care practices, making them realize other situations in which HH is necessary and, however, is neglected, in such manner the professionals can seek a change in the behavior.

In this way, it is essential the creation of strategies that encourage the regular practice of HH in the five moments, that qualify the professionals and that manage the generating factors aiming either to reduce or heal the low adherence, since the HH has great relevance for the humanized and free of avoidable damages care for both the patients and professionals. In addition, in the context of COVID-19, the practice is an effective mean of prevention, considering the high transmissibility of the virus through contact.<sup>5</sup>

Another way of incentive was the creation of the blitz in strategic days with the HH thematic and

the removal of adornments as rings, bracelets, and watches, which may difficult the removal of microorganisms or accumulate them in the hands.<sup>18</sup> The blitz were quickly carried out in places with high flow of professionals, giving them information about HH in the fight against infections and guiding the removal of adornments. The approaches were unpredictable and, sometimes, caused some estrangement on the professionals, something which happened frequently, but, after some dialogue, a large part gave in to instructions and ended up removing the adornments and being new propagators of information.

To avoid the estrangement, the HICS and the students made use ludic resources with several contexts as, for instance, social networks. In this way, the feedback between the team and the approached professionals was increased, ensuring a exchange of knowledges, because, as the knowledge about infections' prevention were passed on, the professionals were reporting their experiences in the care practice. In order to generate greater impact, this artifice was enlarged for all network of workers of the institution, so the comprehension about the prevention of infection could reach all the employees.

After carrying out these educational activities, the students observed, while filling out the HH observation form, a greater attention from professionals regarding the five moments, and, consequently, an increase in adherence to the HH. In addition, professionals, as these actions were carried out throughout the year, became more aware of preventive measures to reduce infections. However, due to the pandemic, and with the activities of the extension project having moved to the remote form, hospital infection rates were not disclosed to the students, limiting further discussions.

Furthermore, despite the limitations brought by the pandemic, with the suspension of the presential activities of the extension project, the HICS continues promoting actions focused on the thematic and the students continue carrying out educational actions. The experiences reported contributed adding up knowledge, criticality, and creativity for the exercise of the teamwork and of the planning, favoring a new posture of the undergrad before infections and, consequently, a good education in health.

## CONCLUSION

Before the showed, it is observed that the educational and monitoring activities of the adhesion to the HH can contribute for the prevention of COVID-19, in view of they can increase the adhesion and, thus, to decrease the transmission within the hospital services, once the professionals put these activities in practice.

It is worth mentioning that HH is only one of the prevention ways, being necessary the institutions to create intervention proposals to reduce SARS-COV-2 transmission and that such proposals may be developed together the professionals that are closer the cases, once they know much about the context they're in, in accordance with the local reality.

It is important to highlight that this work faces the lack of data about the impact of the reported actions as limitation, considering that, with the start of the pandemic, the extension project had its activities paralyzed for the security of the students.



**RESUMO**

**Introdução:** Em meio à pandemia causada pela COVID-19, o uso de medidas protetivas, como a higienização das mãos, se faz necessária, devido à facilidade de transmissão pelo contato. **Objetivo:** Relatar as atividades desenvolvidas sobre higienização das mãos, anteriormente à pandemia, em um projeto de extensão que podem contribuir para a redução da transmissão da COVID-19 dentro do serviço de saúde. **Delineamento:** Estudo descritivo, com abordagem qualitativa, do tipo relato de experiência, das atividades realizadas no Projeto de Extensão “Vigilância de Fatores de Riscos e Proteção para Infecção Relacionada à Assistência à Saúde pela Busca e Notificação dos Casos” no ano de 2019. **Resultados:** As atividades desenvolvidas foram desde o monitoramento da prática da higienização das mãos até o desenvolvimento de atividades educativas que visam aumentar a adesão por parte dos profissionais, sendo essa uma importante prática para o controle de infecções que podem ser transmitidas através das mãos. **Implicações:** O aumento da adesão da higienização das mãos, por meio de atividades educacionais, pode contribuir na redução do risco de transmissão da COVID-19 dentro dos serviços hospitalares.

**DESCRITORES**

Educação em saúde; Controle de infecção; Desinfecção das mãos; SARS-COV-2.

**RESUMEN**

**Introducción:** En medio de la pandemia provocada por el COVID-19, se hace necesario el uso de medidas de protección, como la higiene de manos, debido a la facilidad de transmisión por contacto. **Objetivo:** Reportar las actividades realizadas en higiene de manos, previo a la pandemia, en un proyecto de extensión que pueda contribuir a la reducción de la transmisión del COVID-19 dentro del servicio de salud. **Delineación:** Estudio descriptivo, con enfoque cualitativo, del tipo relato de experiencia, de las actividades realizadas en el Proyecto de Extensión “Vigilancia de Factores de Riesgo y Protección para Infecciones Relacionadas con la Atención a la Salud a través de la Búsqueda y Notificación de Casos” en el año 2019. **Resultados:** Las actividades desarrolladas variaron desde el seguimiento de la práctica de higiene de manos hasta el desarrollo de actividades educativas dirigidas a aumentar la adherencia de los profesionales, que es una práctica importante para el control de las infecciones que pueden ser transmitidas por las manos. **Implicaciones:** aumentar la adherencia a la higiene de manos, a través de actividades educativas, puede contribuir a reducir el riesgo de transmisión de COVID-19 dentro de los servicios hospitalarios.

**DESCRIPTORES**

Educación en Salud; Control de Infecciones; Desinfección de las Manos. SARS-COV-2.

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#### COLLABORATIONS

AML, DPS, HBA e LTCS: substantial contributions in the conception or design of the work; in the analysis and interpretation of data; article's writing or in its critical review; and in the final version to be published. TVL: substantial contributions in article's critical review. OMAB: substantial contributions in the conception or design of the work; and in article's critical review. All authors agree and are responsible for the content of this version of the manuscript to be published.

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Not applicable.

#### AVAILABILITY OF DATA

Not applicable.

#### FUNDING SOURCE

Not applicable.

#### CONFLICTS OF INTEREST

There are no conflicts of interest to declare.