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CONTROL OF INFECTIONS IN PATIENTS IN CONTACT PRECAUTION

CONTROLE DE INFECÇÕES A PACIENTES EM PRECAUÇÃO DE CONTATO

CONTROL DE INFECCIONES A PACIENTES EN PRECAUCIÓN DE CONTACTO

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ABSTRACT

Objective: to describe nurses' knowledge about contact precaution measures. **Method:** this is a qualitative, descriptive study carried out with 15 nurses who work in an inpatient unit of a public haematological institute. A questionnaire and a semi-structured script, Content Analysis and construction of thematic axes were used. **Results:** two thematic axes emerged: Definition of contact precautionary measures and their indications and Measures of control of Health Care Related Infections in the face of contact precaution. **Conclusion:** there were gaps in participants' knowledge about the implementation of infection control measures in face of contact precautions, mainly regarding the use of hand hygiene and hygiene. There were misconceptions as to the moments in which the precautionary measures of contact should be adopted. **Descriptors:** Infection Control; Nursing care; Hospital Infection; Inpatient Units; Precaution; Nursing.

RESUMO

Objetivo: descrever o conhecimento do enfermeiro sobre as medidas de precaução de contato. **Método:** trata-se de um estudo qualitativo, descritivo realizado com 15 enfermeiros que atuam em uma unidade de internação de um instituto hematológico público. Empregaram-se um questionário e um roteiro semiestruturado, Análise de Conteúdo e construção de eixos temáticos. **Resultados:** emergiram-se dois eixos temáticos: Definição das medidas de precaução de contato e suas indicações e Medidas de controle de Infecções Relacionadas a Assistência à Saúde diante da precaução de contato. **Conclusão:** evidenciaram-se lacunas no conhecimento dos participantes acerca da implementação das medidas de controle de infecções diante da precaução de contato, principalmente quanto ao uso da paramentação e higienização das mãos. Verificaram-se equívocos quanto aos momentos em que se deve adotar as medidas de precaução de contato. **Descritores:** Controle de Infecções; Cuidados de Enfermagem; Infecção Hospitalar; Unidades de Internação; Precaução; Enfermagem.

RESUMEN

Objetivo: describir el conocimiento del enfermero sobre las medidas de precaución de contacto. **Método:** se trata de un estudio cualitativo, descriptivo realizado con 15 enfermeros que actúan en una unidad de internación de un instituto hematológico público. Se emplearon un cuestionario y un itinerario semiestruturado, Análisis de Contenido y construcción de ejes temáticos. **Resultados:** surgieron dos ejes temáticos: Definición de las medidas de precaución de contacto y sus indicaciones y Medidas de control de Infecciones Relacionadas a Asistencia a la Salud ante la precaución de contacto. **Conclusión:** se evidenció lagunas en el conocimiento de los participantes acerca de la implementación de las medidas de control de infecciones ante la precaución de contacto, principalmente en cuanto al uso de la paramentación e higienización de las manos. Se verificaron equívocos en cuanto a los momentos en que se deben adoptar las medidas de precaución de contacto. **Descriptores:** Control de Infecciones; Atención de Enfermería; Infección Hospitalaria; Unidades de Internación; Precaución; Enfermería.

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INTRODUCTION

It is related to hospital infection to infections acquired in health units. Health Care-Related Infections (HCRI) are defined as considering the context of care including hospitals, outpatient clinics, day-care, home care and clinics¹ - a broadening of the concept that incorporates acquired infections and related to the various care provider environments to health, which were not present or incubated at the patient's admission.²

The World Health Organization (WHO) considers the HCRI as a public health problem in which effective and immediate responses to its control are necessary.¹ HCRI are indicated as adverse events and the prevention of their occurrence is a safety priority.³

In recent years, it has been estimated that 7% of patients in developed countries have acquired at least one HCRI and, in developing countries, this rate may be even higher, reaching an average of 10%. It is one of the most common adverse events in health care settings with an impact on patients' quality of life.⁴

The high risk of mortality related to HCRI is closely associated with factors related to the performance of invasive, diagnostic and therapeutic procedures, the severity of the underlying disease that affects the patient, the site of infection, the adequacy of the therapy and the sensitivity of the microorganisms to antimicrobials.⁵ It is pointed out that, in the hospital, the impacts of HCRI are more severe and constantly have, as an outcome, death.⁶⁻⁷

It can be noticed that another fact that can result in complications is related to the acquisition of HCRI by multiresistant microorganisms, and these can cause an increase in hospitalization time, morbimortalities and increased expenses to health institutions.¹

It is reported that resistance to antimicrobials is a worldwide and growing concern, and the transmission of resistant microorganisms between patients possibly occurs through the hands of health professionals, who may become contaminated when in contact with the patient and inanimate surfaces of the environment hospital, causing a cross-contamination.⁸ It is important to note that this type of transmission has relevance in the incidence rates and prevalence of HCRI and deserves attention of health professionals.

However, the implementation of infection control measures is a useful tool that can contribute to the reduction of negative outcomes. Among these are the contact precautionary measures that are important in the health care environment to prevent the dissemination of microorganisms of epidemiological importance, such as multiresistants.⁹ These measures indicate the hygiene of the hands (HH), the constant use of the apron and gloves and the private room in care practice.¹⁰

In the analysis of the study scenario, it is considered that patients with hematological cancers are more susceptible to the risk of infections by opportunistic microorganisms of their microbiota and / or multiresistants found in the hospital environment due to the possibility of inadequate production of white blood cells and modality, such as chemotherapy, which may result in febrile neutropenia.¹¹

Contact precautionary measures should be used to control the dissemination of undesirable and multiresistant microorganisms through institutional actions, individual and collective attitudes of health professionals, however, among the professional categories, Nursing represents a high quantitative of professionals who provide direct and constant assistance to patients¹² and, therefore, should be more attentive to the correct applicability of infection control measures. It is considered, therefore, the nurse fundamental element in the awareness and motivation of the team for the adoption of preventive measures to the infections.

OBJECTIVES

- To describe nurses' knowledge of contact precautions.
- To analyze the applicability of these measures in the practice of care to patients in isolation in the health services.

METHOD

This is a qualitative, descriptive and exploratory study. This approach was chosen because it enables the researcher to submerge in a particular phenomenon through its detailed description, contributing to an understanding and eventual analysis of the studied context.¹³

It is reported that, in this way, the qualitative research starts from the notion of the social construction of the realities of the study, being interested in the perspectives of the participants, in their day-to-day practices

and in their daily knowledge regarding the question under study.¹³

As a scenario, a public hematological hospitalization unit located in the State of Rio de Janeiro was set up. The institution is a reference center in Hematology and Hemotherapy of the State and is inserted in the hierarchical network of the UHS as a tertiary unit specialized in the treatment of primary haematological diseases of high complexity.

Fifteen nurses of both sexes, who worked in the unit between October and December 2016, during which the data collection took place, were enrolled to participate in the study. The choice of nurses was made through the development of managerial and assistance activities, being this professional able to integrate, agglutinate and articulate the actions of the Nursing team in a perspective of favoring patient safety. It is reported that all the participants signed the Free and Informed Consent Term (FICT).

The individual interview was chosen as an instrument of socio-cultural identification and by the semistructured script to guide the discussion. The meetings were held on a scheduled date and time with each participant, and these took place in the procedure room in order to allow participants freedom. It turns out that the participants answered the following questions: "Could you tell me what is precaution of contact?"; "What are the indications for contact precautionary measures?"; "What care should be taken in patients in contact precaution?".

An alphanumeric code was given to the participants and they were identified as E1 to E15. The speeches were recorded in digital media (MP3), transcribing them integrally.

The Thematic Content Analysis technique was used for the analysis, being the categorization phase performed by Thematic Analysis. Firstly, a floating reading of the material was carried out and, afterwards, the pre-analysis was carried out, aiming to capture the most incidental themes of the discourses. The corpus of the data and the units of registry that composed the empirical categories for analysis and discussion were obtained from this material.¹⁴ For the most significant contents, two thematic axes were formed: The definition of contact precaution measures and their indications" and "Care of nurses in the face of the applicability of contact precautionary measures".

The project was approved by the Research and Ethics Committee of HEMORIO, under number 406/16, in accordance with Resolution

466/2012, of the National Health Council. The article in question of the research is mentioned "Nursing constructing educational strategy to prevent the spread of multiresistant microorganism in haematological unit".

RESULTS

♦ Characterization of participants

Among the study participants, 14 were female and only one was male, in the age group between 20 and 44 years, and the training time ranged from five to ten years and performance in the profession was from one to eleven years. It was pointed out that, in terms of employment relationships, five reported working in more than one institution and thirteen of the total number of participants had a degree in Lato Sensu.

From the analysis of the data, two thematic axes emerged: Definition of contact precautionary measures and their indications and Measures of control of HCRI before contact precaution.

♦ Definition of contact precautions and their indications

It is important for infection control measures to be implemented properly, for professionals to keep in mind the purpose of their applicability and to be able to use them correctly when necessary. Thus, the initial question of the study was approached the participants' understanding of what is the precaution of contact. Below are some reports.

It is you to prevent an infection through direct contact. (E1)

To prevent microorganisms from being spread to other patients who are in contact in the same ward or in other wards. (E2)

It is the prevention of cross-transmission between patients, in the case of different bacteria or not, but it is necessary. (E3)

These are measures that we use to prevent both direct and indirect contamination of patients. (E5)

It was pointed out by some participants that the precautionary measures of contact should involve taking care of the space where the patient is hospitalized to avoid the occurrence of cross-contamination.

Contact precaution is the patient that you have to be careful with touch. I'll wear a glove and a cloak. And the precaution of contact with space also, therefore, if patient is cautious contact in bed 3 and bed 1 is a neutropenic patient and they will share the same toilet [...]. (E8)

It is when the patient is colonized with a multiresistant bacterium, so that it does not

spread to others through our hands or our clothing. Anyway, everything that can touch like the bed, the belongings, besides the standard precaution, we use the precaution of contact [...]. (E10)

Participants were then asked about the clinical indications for contact precaution. In the following speeches, there is a lack of knowledge about microorganisms and clinical situations that indicate their applicability.

Multiresistant bacteria [...] does not come to mind right now. (E1)

The bacteria would be KPC, VRE, MRSA, ESBL. (E2)

Ah the MRSA, the VRE (pause), ESBL. (pause), Staphylococcus [...]. (E6)

Some participants expressed doubts regarding the use of contact precaution.

Multiresistant bacteria. (pause to think). I do not know [...] ahhh, do you have contact with fungus too? [...] I do not know, nothing comes to mind right now. (E1)

A whooping cough, hepatitis A? I do not remember any other now, no! Varicella! Whooping cough! (E8)

It was emphasized, in the following statements, the use of contact precaution in patients coming from another health institution.

I would be patient in an investigation that was in another hospital and that hospitalized with us and we do not know if he has or does not have, in the case of screening. I think that alone! (E3)

[...] for those patients who came from another hospital or had some type of procedure in another hospital unit for more than 24 hours. [...] those who suddenly have a suspicion of colonization or infection that are developing a fever. Even more in the patients that we have here, the profile of neutropenic patients [...]. (E4)

♦ HCRI control measures in relation to contact precaution

Participants were asked to detail the care that should be used to patients in contact precaution, and the following statements show that the professionals are aware of the use of gloves and cape, however, if there is evidence that they are not sufficiently knowledgeable about paramentation required.

I will equip myself, firstly, with a cape, a glove, a cap, a mask, if necessary, depending on what I am going to do about the procedure. I'll explain to the patient. Oh, I wash my hands before I work. (E6)

Wash hands, provide a cape, procedure gloves [...]. After the procedure is over, we'll remove the glove. No, we untie the cape, pull the cape and then I take the

glove with the cape. I take the glove and then I'll turn the cloak. (E10)

I put on the cloak, mask, cap, glove. Before that, I sanitize my hands because they are the vehicle of contamination. Only! (E12)

Oh, I do. I put on the mask, the gloves and the cloak. I do the procedure. When I finish, I remove a glove and I'm already pulling the sleeve of the cape with the hand that still has a glove. Then I do the same thing with the other side and I throw everything in the bin. Then I take off the mask. (E15)

I wear the cap because I feel more comfortable. If I'm going to take care of the patient, I usually leave the area with the cap and glove. Patient in contact precaution use glove and capote in bed. (E8)

First, I separate the material and then wash my hands. I will evaluate the location of the procedure. Next, I prepare the material that I will use to carry a required amount. Then I wash my hands again. [...]. (E9)

In other speeches, the discourses on the possibility of inappropriate handling of the paramentation and possible contamination of the professional, environment and patient.

I put on a glove and a cloak [...]. So, mask and cap when you have (laughs) ... but I worry about the cloth cloak that we use, because when we use a cloak that was handled wrongly, it is all contaminated, it will be contaminated the clothes and it too can carry microorganisms and there cycle and more disseminations ... there goes another patient and touches the bed, furniture and clothes and contaminates there as well. (E2)

If we do not properly put on the cape, gloves and masks and do not remove it correctly, we will contaminate our hands, lab coat and end up contaminating other patients and surfaces [...]. I do not mind the sequence [...]. We end up doing it our way and the risk of contamination is greater. (E13)

In addition, it is related to paramentation in the precaution of contact, that one of the participants expressed doubts about its use in the practice of care.

I usually wear gloves, mask, cap and cape on patients in precaution regardless of which one it is [...]. We always have doubts about what to wear in what and how to wear it too (laughs). (E6)

One participant was concerned about the patients in contact precaution who share the same ward because of the possibility of interaction between them during the hospitalization. It is known that the institution does not have isolation rooms and patients in contact precaution remain hospitalized in wards by type of etiological agent.

The patient who stays in the bed I think you can control a little more, now, the patient who wanders is more complicated because it has the issue of bathing, has the interaction of this patient with others in the ward ... and depending of the physical structure, he will talk, go here, go there. Then comes the question of orientation. (E1)

DISCUSSION

♦ Characterization of participants

It is exposed, as to the employment links, that five participants have a double working day, totaling 60 hours worked / week. It is important to emphasize that excessive working hours can lead to the development of stress and fatigue due to sleep deprivation, and these can affect the cognitive processes of the professional in some way;¹⁵ therefore, these can be factors that make it difficult to apply of infection control measures and other actions aimed at patient safety.

As far as postgraduate studies are concerned, only two of the 15 interviewees have a Lato Sensu postgraduate course in Hematology and Oncology. It is understood that the specializations are favorable to the professionals, as they contribute to the professional can gain more security in providing assistance in the face of specific situations and thereby improve their professional performance.

It is of great value, considering that the institution deals with a specific and complex clientele and considering the low number of specialists in the sector, the development of permanent education activities in order to further qualify the professionals involved in the assistance.

The study institution of the Hospital Infection Control Commission (HICC) is available. The aim of the group's actions is to train professionals about the technical-operational routines of hospital infection prevention and control at admission, with annual review, in the occurrence of outbreaks and whenever necessary.

♦ Definition of contact precautions and their indications

In recent years it has become necessary to identify new microorganisms combined with various possibilities of transmission and resistance to antimicrobials for the development of infection control measures in health care settings in order to prevent health risks. Contamination through contact is an important facilitator of the acquisition of HCRI by pathogenic microorganisms, mainly multidrug-resistant.¹

The use of contact precaution measures in which hand hygiene (HH) is recommended, the constant use of the apron and gloves and the private room in the care practice are recommended as a way of containing the dissemination of these pathogens.¹⁰

It can occur, when there is no adherence of professionals to these measures, the spread of these microorganisms in the health care environment, implying an increase in hospital infection rates and other serious consequences.¹⁶ Attention should be paid to these measures in the case of immunocompromised patients, since the impact of an infectious complication may be an aggravating factor in their treatment.

It was identified that the participants understand that the precaution of contact should be used to prevent the transmission of microorganisms between patients and avoid cross infection. It has been observed, in some reports, that direct and indirect contact contamination is spoken without further detailing how contagion occurs through these means. This last fact deserves attention, since the non-observance of the means of propagation of microorganisms can result in the increase of the incidence of infections.

It is important to highlight, however, that infectious agents can reach the patient through physical contact between the source of infection and the new susceptible host and through indirect contact in which the contact of a susceptible host with contaminated objects is involved instruments, clothing or gloves.¹⁶ Professionals should be aware of these possibilities of contamination in order to implement measures that prevent cross-contamination in health services.

It is pointed out, in the chain of transmission, by studies that the hands of health professionals and patients colonized or infected can constitute as reservoirs of microorganisms, being important sources in the chain of transmission. It is also added that the hospital environment also constitutes a reservoir due to the possibility of contamination of inanimate surfaces and equipment.^{10, 17}

It is necessary to adopt some care related to the place where the patient is hospitalized, when talking about precaution of contact. It is recommended, firstly, private room in the practice of care and use of exclusive materials per isolated patient, such as pressure device, thermometer, stethoscope and others. It is suggested, when these are not possible, cohort ward (same type of microorganism) and correct disinfection of these objects between patients for the reduction of microbial load.¹⁰

However, it is noted that sometimes these recommendations are not met satisfactorily due to the lack of physical structure and insufficient quantification of materials made available to the health institution.

It is important to note, although not the focus of the study, the E10 report when it refers to the standard precaution. This measure was created and established in the health services as a set of preventive practices applied to the care of all patients.¹⁸ These actions include the use of personal protective equipment (PPE) immunization and management of health care waste.¹⁹ It is also contributed to avoid the dissemination of microorganisms when correctly implemented.

It is imperative for health professionals to apply the standard precautionary measure, since it aims at the safety of the health team and patients, as well as minimizing the risk of transmission of infections. It should be used even in the case of patients who have some other type of specific precaution, such as contact and respiratory. It is known that in practice there may be resistance on the part of professionals to use this precaution, especially personal protective equipment, despite the continuous training offered by most health institutions.¹⁸

It is emphasized that orientation and training actions should be directed towards the subject, since the inapplicable applicability of precautionary measures may imply the dissemination of microorganisms in the health care environment, however, limiting their indications may result in a delay in the implementation of these measures, compromising patient safety.

It is thus possible for the wider knowledge to understand the need for adherence to preventive measures and to reduce the risk of colonization and possible infection in accordance with the principles of security.

Contact precautions should be instituted in cases of infections or colonization by multiresistant microorganisms, varicella, skin and soft tissue infections with secretion not contained in the dressing, impetigo, disseminated herpes zoster or immunosuppressed.²⁰

It is recommended in the literature that patients from other health institutions be placed in contact precaution by tracking. It is necessary that the professionals are attentive, in these cases, to the implementation of this measure, since the conduct must remain until it is discarded or confirms the necessity of the establishment of isolation.²⁰

♦ HCRI control measures in relation to contact precaution

It should be noted that, when talking about precaution of contact, health professionals should pay attention to its proper implementation, because only then, it becomes possible to safely handle equipment, devices and surfaces.

For this, some care should be taken, such as: the use of gloves and apron during all manipulation of the patient and withdraw them after use, including the surfaces near the bed. In addition, the hands should be cleaned before and after contact with the patient and after removal of procedure gloves.¹

Hand hygiene was mentioned by some participants only, before they were housed, and there was no indication for hand hygiene after removal of the gloves. It is noticed that one participant did not at any time report hand hygiene, and this fact may be related to the low adherence of this practice according to the current recommendations.

It is recommended, however, that hand hygiene should be performed before touching the client, before performing a clean / aseptic procedure, after risk of exposure to body fluids, and after touching the client and surfaces close to the client.²¹

In the studies, there is a low adherence and limited knowledge about the moments of hand hygiene and the hand washing technique. The justification for these factors is based on aspects related to beliefs and myths by the professionals; absence of customer-friendly sinks and adequate facilities; skin reactions in the hands; lack of motivation, forgetfulness, time and human resources.²²⁻³ It is pointed out that, in the study in question, there were no aspects related to hand hygiene adhesion.

The use of the mask was mentioned in some reports, however, the use of Respiratory Protection Equipment (RPE) should be performed when indicated, as in cases of respiratory transmission and for the protection of the professional against the inhalation of various particles. It can result, if used in an arbitrary way, in unnecessary costs to health institutions.

It is based, in some situations, the choice for the personal preferences preference, according to the E8 participant's highlighted speech in which he explained to make use of the cap because he feels comfortable. The criterion of choice should be based, however, on the type of precaution established and / or the type of exposure of the health

professional, so that there is no waste of inputs.²¹

It should be noted that one participant (E9) reported evaluating the care to be provided in order to separate the material needed for the procedure, and this is an important fact, since the professionals must take care to provide only the essential inputs to the assistance in order to avoid wastage and expense to the institution. It is recommended that all unused materials that have been brought into the room and / or isolation ward, as well as the residual volume of germicidal solutions, soaps or other products should be discarded.^{10,20}

It is also added that one of the participants (E2) attributed the use of paramentation according to their availability in the institution, which is worth mentioning that the lack of material resources can also constitute a negative factor for the use of control measures from HCRI.¹⁸

It is known that inappropriate use of precautionary measures can lead to cross-infection and biological accidents. It was identified in a study that health professionals have difficulties in correctly implementing procedure gloves and aprons / bonnets.²⁴ It is reported that factors such as indiscriminate use, haste and work overload appear as facilitating factors of these inadequacies.²⁴ The cloth cloak is adopted at the institution where the study was carried out, and it is arranged in contact precaution beds by means of individualized supports.

Therefore, the training of health professionals should be given less importance in order to address recommended recommendations. They need a change of attitude and behavior to improve adherence to specific preventive measures.

In studies on adherence to contact precaution measures, nursing professionals showed greater adherence to hand hygiene than to the use of PPE. We identified a low number of professionals with adequate knowledge and behavior regarding the adoption of these measures. Knowledge about the use of gloves is also pointed out, however, it was evidenced that the professionals do not incorporate, in their practice, the adequate use of gloves, even being one in the care of the patient. It is necessary to develop studies to correct these.²⁴⁻⁵

It is recommended, in the precaution of contact, private room and, when there is no availability, it is necessary to allocate the patients in a cohort ward. It is explained that this is to keep clients in the same ward or confirmed cases of infection or colonization

by the same etiologic agent²⁰ and, thus, the institution adopts the recommended criteria for the hospitalization of these patients in isolation.

Another question addressed by the participant E1 was related to patient orientation. A gap between the understanding of the prevention and control measures of infections by patients and their involvement in the process, indicating the need for actions that favor effective communication was identified in a study about the perception of HCRI.²⁶

In other studies, it was emphasized that the involvement of patients and caregivers in the care process at all levels of health care as partners and / or co-responsible care, especially in activities related to the maintenance of a biologically safe environment, such as hand hygiene and the use of personal protective equipment, can corroborate the satisfactory performance of professionals with regard to patient safety.²⁷⁻⁸

It should be emphasized that patients and caregivers should receive clarification about what is the precaution of contact and, moreover, their engagement should be encouraged in order to increase the chances of success and reduce the chances of unwanted events resulting from care.

Adequate and up-to-date knowledge about the aspects related to hand hygiene and the use of paramentation in contact precaution are considered to assist the health professional in face of their applicability in the care scenario.

The study was limited by the non-inclusion of other professional categories and no observations were made by the participants in the care practice scenario so that their attitudes and behaviors could be compared with the use of precautionary measures with other scientific studies.

CONCLUSION

It was verified that the participants presented doubts about the diseases or microorganisms in which it is necessary to use contact precaution, but they recognize the measure as necessary to avoid the propagation of multiresistant microorganisms.

It was observed that the participants' knowledge about the subject matter is that their reports are close to the routine of caring for patients in contact precaution and that there are gaps between their knowledge and what is recommended in the literature, mainly regarding the use and hygiene of the hands.

It is concluded, therefore, that it is extremely important to carry out technical and scientific updates on HCRI control measures and the development of institutional policies in order to stimulate the adequate adherence and adoption of recommendations with levels of evidence satisfactory to prevention of infections.

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