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ORIGINAL ARTICLE

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ABSTRACT

Justification and Objectives: despite the importance of companions/visitors for hospitalized patients under specific precautions, it is noted that risks of exposure and dissemination of microorganisms in health services by this population are still incipient in the literature. Thus, the objective was to characterize the current recommendations on specific precautions for companions and visitors of hospitalized patients and to analyze the barriers to their implementation from infection preventionists' perspective. **Methods:** a descriptive and exploratory study with a quantitative approach, with 89 infection preventionists, between March and June 2020. Data collected by electronic questionnaire, "snowball" sampling and analyzed according to frequency of responses. **Results:** hand hygiene was the most recommended recommendation (>95.0%). As for non-conformities, staying in the room without attire (78.6%), going to other rooms (53.9%) and keeping doors open as aerosol precaution (51.7%) stood out. Regarding the strategies adopted to guide companions/visitors, there was a predominance of individual verbal guidance (92.4%). The main barrier cited was the lack of institutional policy (56.2%). **Conclusion:** there was no uniformity in the recommendations, and non-conformities and barriers were listed. The importance of specific prevention guidelines for this public and effective educational strategies for its implementation are highlighted.

Keywords: *Hospital Infection Control Program. Patient Isolation. Patient Safety. Patient Companions. Infection Control. Infection Control Professionals.*

RESUMO

Justificativa e Objetivos: apesar da importância dos acompanhantes/visitantes para pacientes hospitalizados em precauções específicas, nota-se que os riscos de exposição e disseminação de microrganismos nos serviços de saúde por essa população ainda são incipientes na literatura. Dessa forma, objetivou-se caracterizar as recomendações vigentes sobre precauções específicas para acompanhantes e visitantes de pacientes hospitalizados e analisar as barreiras para a sua implementação sob a ótica de prevencionistas de infecção. **Métodos:** estudo descritivo e exploratório, de abordagem quantitativa, com 89 prevencionistas de infecção, entre março e junho de 2020. Dados coletados por questionário eletrônico, com amostragem tipo "bola de neve" e analisados segundo frequência das respostas. **Resultados:** a higienização das mãos foi a recomendação mais indicada (>95,0%). Quanto às não conformidades, destacou-se permanecer no quarto sem paramentação (78,6%), frequentar outros quartos (53,9%) e manter portas abertas em precaução para aerossóis (51,7%). Referente às estratégias adotadas para a orientar os acompanhantes/visitantes, houve predomínio da orientação verbal individual (92,4%). A principal barreira citada foi a falta de política institucional (56,2%). **Conclusão:** não houve uniformidade nas recomendações, e não conformidades e barreiras foram elencadas. Destaca-se a importância de diretrizes de prevenção específicas para esse público e estratégias educativas efetivas para sua implementação.

Descritores: *Programa de Controle de Infecção Hospitalar. Isolamento de Pacientes. Segurança do Paciente. Acompanhantes de Pacientes. Controle de Infecções. Profissionais Controladores de Infecções.*

RESUMEN

Justificación y Objetivos: a pesar de la importancia de los acompañantes/visitantes para pacientes hospitalizados bajo precauciones específicas, se advierte que los riesgos de exposición y diseminación de microorganismos en los servicios de salud por parte de esta población son aún incipientes en la literatura. Así, el objetivo fue caracterizar las recomendaciones vigentes sobre precauciones específicas para acompañantes y visitantes de pacientes hospitalizados y analizar las barreras para su implementación desde la perspectiva de los preventivos de infecciones. **Métodos:** estudio descriptivo y exploratorio con enfoque cuantitativo, con 89 prevencionistas de infecciones, entre marzo y junio de 2020. Datos recolectados por cuestionario electrónico, muestreo "bola de nieve" y analizados según frecuencia de respuestas. **Resultados:** la higiene de manos fue la recomendación más recomendada (>95,0%). En cuanto a las no conformidades, se destacó permanecer en la habitación sin atuendo (78,6%), ir a otras habitaciones (53,9%) y mantener las puertas abiertas como precaución contra los aerosoles (51,7%). En cuanto a las estrategias adoptadas para orientar a los acompañantes/visitantes, hubo predominio de la orientación verbal individual (92,4%). La principal barrera citada fue la falta de política institucional (56,2%). **Conclusión:** no hubo uniformidad en las recomendaciones, y se enumeraron las no conformidades y las barreras. Se destaca la importancia de pautas de prevención específicas para este público y estrategias educativas efectivas para su implementación.

Palabras clave: *Programa de Control de Infecciones Hospitalarias. Aislamiento de Pacientes. Seguridad del Paciente. Compañeros de Pacientes. Control de Infecciones. Profesionales del Control de Infecciones.*

INTRODUCTION

Hospitalizations of patients under specific precautions (SP) for contact, droplets or aerosols have increased significantly in recent years, with emphasis on: the growing number of patients colonized by resistant microorganisms (RM); the resurgence of already controlled diseases, such as measles; and more recently the coronavirus (COVID-19) pandemic.[1-2] Causes such as the increase in rates of healthcare-associated infections (HAIs) and the fact that these rates are 20 times higher in developing countries, when compared to those in developed countries[3], reflect the seriousness of the issue and the need to understand the impacts generated for public health.

Patients hospitalized in SP, normally restricted to their rooms, may feel vulnerable and develop feelings involving fear of worsening their health condition as well as judging themselves a threat to the community as they consider that their condition is transmissible and requires special care.[4-5] In view of this, the inclusion of a companion or permission for visits could positively impact emotional well-being, safety and the quality of care provided, in addition to making hospitalization more humane.[4-7] On the other hand, one cannot forget the risk of transmission inherent to patients' pathology and, consequently, the need for companions and visitors (CV) to also comply with HAI prevention and control standards established by health services.[5,8]

Although emotional support is responsible for most of CV involvement during hospitalization, assisting patients in activities such as bathing, feeding, hygiene and positioning, i.e., activities associated with hand contamination, is common practice and does not differ from activities carried out by health professionals during patient care. Considering the aforementioned activities and the time that companions remain with patients, it is theorized that these people can acquire and contribute

to the dissemination of microorganisms, if they do not follow guidelines for HAI prevention and control.[9-10]

Previous studies indicate that difficulties related to the systematization of guidelines on measures to prevent the transmission of microorganisms, not valuing the reason for its use as well as difficulties in implementing and using scientific language, hinder the understanding and compliance of CV with SP, which can increase the risk of self-contamination, contamination of the environment and other patients.[6,8-11]

HAI are one of the main indicators of quality of care during hospitalization. Thus, involving patients, family members, visitors and health professionals is fundamental for its effective control. Accrediting agencies, such as the Joint Commission International, mention that health services should educate and encourage patients and their families to follow the recommendations for HAI prevention and control. Likewise, the Centers for Disease Control and Prevention (CDC) precautions and isolation guide mentions that patients and family members should be instructed on standard precautions at the time of admission, and additional information on SP to be provided once SP is instituted.[7] The Brazilian National Health Regulatory Agency (ANVISA - *Agência Nacional de Vigilância Sanitária*) recommends that the Brazilian National Program for Healthcare-Associated Infection Prevention and Control (PNCPIRAS - *Programa Nacional de Prevenção e Controle de Infecções Relacionadas à Assistência à Saúde*) should provide minimum protection and safety to patients, health professionals and visitors.[12]

Despite the magnitude of the topic, the emotional support provided by CV for patients in SP and the risks of exposure and dissemination of microorganisms in health services, the literature on this topic is limited. Thus, this study aims to characterize the current recommendations on SP for CV in hospitalized patients and analyze the barriers to their implementation from infection preventionists' perspective.

METHODS

This is a descriptive and exploratory study with a quantitative approach. The study followed the aspects listed in STrengthening the Reporting of OBservational studies in Epidemiology (STROBE).[13] Data collection was carried out between March and June 2020, online, with professionals from the Healthcare Infection Control Practices Advisory Committee (HICPAC) from Brazilian hospitals.

It was adopted as an inclusion criterion to be a health professional (physician, nurse, pharmacist, other) and perform their duties in HICPAC in a Brazilian hospital institution. Participants were recruited through snowball non-probabilistic sampling. First, the São Paulo Association of Epidemiology and Control of Healthcare-Associated Infection (APECIH - *Associação Paulista de Epidemiologia e Controle de Infecção Relacionada à Assistência à Saúde*) was contacted, which released the study to its members. Each associate received an invitation by email containing the link to access the Informed Consent Form (ICF), a self-administered questionnaire, in addition to instructions to forward the invitation to a co-worker, who is also an infection preventionist.

The research instrument consisted of a self-administered questionnaire, developed by researchers, which used as a basis the measures for precautions and isolation recommended by the current literature.[14-15] The questionnaire, with 15 closed-ended and multiple-choice questions, was made available on Google Forms®, organized into three parts (demographic data - with nine questions; recommendations on precautions and isolation in force at the institution - with four questions; conduct of CV of patients in SP and barriers to its implementation – with 2 questions). All questions allowed indicating more than one answer option.

The data obtained were analyzed using descriptive statistics, establishing absolute and relative frequencies for the studied variables. The results were presented in the form of tables.

The study was approved by the Research Ethics Committee of the study institution, Certificate of Presentation for Ethical Consideration (CAAE - *Certificado de Apresentação para Apreciação Ética*) 25450819.0.0000.5504, Opinion 3,750,360, and respected all the ethical precepts of Resolutions 466/2012, 510/2016 and 580/2018 of the Ministry of Health.

RESULTS

Initially, 92 professionals responded to the instrument, however three participants were discarded, as they only worked in higher education institutions, not meeting the inclusion criteria. Therefore, the final sample consisted of 89 participants, of which 13 worked in two (n=10) or three (n=03) different HICPAC.

Of the 89 participants, 67 (75.3%) were nurses, 21 (23.6%) physicians, and 01 (1.1%) nursing technicians, of which 08 (9.0%) had less than 01 year of experience in the area of infection control, 26 (29.2%), from 01 to 03 years, and 55 (61.8%), more than 03 years.

As for the type of institution, most participants reported working at a private hospital (43.8%), followed by public (35.2%), philanthropic (14.3%) and university (6.7%), located in the Southeast region (77.5%), followed by the Midwest (9.0%), Northeast (7.9%), South (4.5%) and North (1.2%).

With regard to the recommendations made to CV on prevention measures by type of SP, it was observed that 71 (79.8%) participants stated that they advocated wearing an N95 mask for the CV of patients under aerosol precaution (AP); 78 (74.3%) stated that they advocated wearing surgical masks for CV of patients in droplet precaution (DP); and 50 (56.2%) stated that they recommend wearing gloves for CV in patients undergoing contact precautions (CP). The recommendation on wearing gloves was referred by 29 (32.5%) participants for CV of patients in PD precaution and 68 (64.4%) for CV of patients in AP. Guidance on hand hygiene (HH) was greater than 95% in all types of specific precautions (Table 1).

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Table 1. Recommendations established for companions and visitors of patients hospitalized under specific precautions, according to the type of precaution, from the perspective of infection preventionists participating in the study (n=89) Brazil, 2020.

Recomendations	Contact precaution *total (%)	Droplet precaution total (%)	Aerosol precaution total (%)
Perform hand hygiene	88 (98.9)	87 (97.6)	85 (95.5)
Do not enter other patients' rooms	76 (85.4)	69 (77.5)	68 (69.4)
Do not leave the room dressed	62 (69.7)	54 (60.1)	55 (61.8)
Keep the bedroom door closed	39 (43.8)	77 (86.5)	80 (89.9)
Wear gloves	50 (56.2)	29 (32.6)	32 (35.9)
Wear disposable apron/cloak	52 (58.4)	19 (21.4)	21 (23.6)
Wear surgical mask	8 (9.0)	78 (74.3)	15 (18.8)
Wear N95 mask	3 (3.4)	2 (2.3)	71 (79.8)
Do not touch the environment	18 (20.2)	12 (13.5)	12 (13.5)
Do not provide for companions	7 (7.9)	11 (12.4)	16 (18.0)
Do not allow visits	5 (5.6)	11 (12.4)	18 (20.2)
Wear goggles	11 (12.4)	19 (21.4)	18 (20.2)
Wear a fabric apron/cloak	15 (16.8)	8 (9.0)	7 (7.9)
Do not touch patient	14 (15.7)	9 (10.1)	10 (11.2)
Have restricted visits	1 (1.1)	5 (5.6)	3 (3.4)
Allow companion without attire	0 (0)	0 (0.0)	0 (0.0)
There are no recommendations	1 (1.1)	0 (0.9)	1 (1.1)

*Note: *corresponds to the number of times the recommendation was indicated according to the type of precaution, and its sum exceeds 100%, as these are non-excluding items.*

When questioned about which professional was responsible for guiding CV regarding such recommendations, the inpatient unit nurses (76; 85.1%) and the executing members of HICPAC (43; 48.6%) were the main professionals mentioned.

Regarding the strategies adopted to guide CV, there was a predominance of individual verbal guidance (82; 92.4%), followed by conversation circles and lectures (21; 23.8%), availability of printed material (13; 14, 3%) and use of electronic media (12; 13.3%). It is reinforced that the participants could indicate more than one type of strategy, if this occurred in their work institution.

Despite the current recommendations, the study participants reported inappropriate conduct performed by CV (Table 2).

Table 2. Conduct of companions and visitors of hospitalized patients under specific precautions from the perspective of infection preventionists participating in the study (n=89) Brazil, 2020.

Inadequate conducts	*Total (%)
Companions and visitors remain without personal protective equipment inside the room	70 (78.6)
Companions and visitors attend more than one room (of different patients)	48 (53.9)
Companions and visitors leave room doors open with aerosol precaution/isolation	46 (51.7)
Companions and visitors leave the room wearing gloves	46 (51.7)
Companions and visitors leave the room using an apron/cloak	43 (48.3)
Companions and visitors circulate outside the room with a child under specific precautions	30 (33.8)
They do not perform hand hygiene	5 (5.6)
Companions meet outside the room for social contact	2 (2.5)

*Note: *corresponds to the number of times the recommendation was indicated, and its sum exceeds 100%, as these are non-excluding items.*

According to the study participants, such behaviors result from a lack of guidance for CV, structure and even the absence of recommendations (Table 3).

Table 3. Barriers to the implementation of infection prevention recommendations for companions and visitors of hospitalized patients under specific precautions from the perspective of infection preventionists participating in the study (n=89), Brazil, 2020.

Barriers to implementation	*Total (%)
Lack of institutional policy for companions and visitors	50 (56.2)
Companions and visitors are unaware of specific precautions/isolation	46 (51.7)
Inadequate structure	30 (33.7)
Health professionals' lack of knowledge about specific precautions/isolation	22 (24.7)
Absence of institutional policies	18 (20.2)
Difficulty communicating between health professionals and companions and visitors about specific precautions/isolation	17 (19.1)
Banalization of guidelines	10 (11.2)
Unavailability of personal protective equipment	7 (7.9)

*Note: *corresponds to the number of times the recommendation was indicated, and its sum exceeds 100%, as these are non-excluding items.*

DISCUSSION

This study aimed to characterize the current recommendations on SP for CV in hospitalized patients and to analyze the barriers to their implementation from infection preventionists' perception.

Among the main results achieved, HH was the most indicated recommendation (>95.0%). As for non-confor-

mities, staying in the room without attire (78.6%), going to other rooms (53.9%) and keeping doors open as AP (51.7%) stood out. Regarding the strategies adopted to guide companions/visitors, there was a predominance of individual verbal guidance (92.4%). The main barrier cited was the lack of institutional policy (56.2%).

In the present research, the profile of participants was similar to that of previous studies, that is, HICPAC are predominantly composed of nurses and physicians with more than three years of experience in the area.[16-17]

Among the recommendations for CV of patients hospitalized in SP, HH was the most frequent and equally mentioned in all types of precautions. Although it is recognized as the most economical and efficient strategy to prevent the transmission of microorganisms in health services,[12,14] CV HH is often neglected in health services and little addressed in the literature.[18] A descriptive study carried out with CV in pediatric hospitals and maternity hospitals in Canada found that the rate compliance with HH of CV was 10.3% and that less than half claimed to have received guidance on this topic during hospitalization.[18]

As for the recommendations on using personal protective equipment (PPE) by CV, there were important differences in the responses of study participants, particularly regarding wearing gloves for AP and DP and a mask for CP. Likewise, a literature review conducted during the COVID-19 pandemic showed that recommendations on wearing aprons, gloves, surgical masks and N95 respirators varied between studies[19]. According to the CDC Recommendations Guide, recommendations on using PPE should be determined by the level of interaction between patients and CV.[14] ANVISA and The Society for Healthcare Epidemiology of America (SHEA) recommend that, in non-endemic situations, CV follow the same recommendations for using PPE established for health professionals.[20-21] The divergences found reflect the fragility of the subject so that the adoption of isolation measures still divides HICPAC's opinion about contradictions between guaranteeing a safe protocol and providing, at the same time, a humanized care to patients assisted.[5]

With regard to restricting or not allowing CV for patients on SP, about 20% of participants reported that this recommendation was foreseen in their institutions, which may imply negative aspects for the recovery of patients.[4-5,22] During the COVID-19 pandemic, visits were restricted due to the high risk of virus transmission, which may have influenced the responses of participants in our study. However, a Canadian study pointed out that little evidence supports that visitors play an important role in intra-hospital transmission of the virus that causes COVID-19. For instance, in China, 2% of visitors reported in-hospital acquisition of COVID-19, while in the United States, only one case was considered to have been acquired from a pre-symptomatic visitor.[23]

Regarding health education, nurses from inpatient units were cited as responsible for guiding VC, which was also found in an observational study, which revealed that nurses were fundamental in educating visitors about effective PPE use.[24] Among the strategies used for education, our results are consistent with other studies, which point out that booklets with simple and easy-to--understand language, group meetings and even recreational activities proved to be efficient for CV, encouraging awareness and exchange of information between them and health professionals.[5,25,26]

The present study identified practices of inappropriate conducts of CV of patients in SP, such as not using PPE in patients' room, leaving the room wearing PPE, and this is consistent with a previous study.[18] It is known that, when used correctly, PPE works as a physical barrier to the transmission of microorganisms. However, its inappropriate use can expose both CV to the microorganism and can also cause cross-transmission to other patients and the community.[10,12,17] Additionally, it is worth noting that the behavior of health professionals in using or not using PPE influences CV's compliance with this practice.[6] Thus, it is suggested to guide health professionals about the importance that their behavior has in CV as well as guide CV on PPE use, emphasizing that using such equipment protects both patients and themselves. Such an approach can motivate them to comply with the recommendations.

CV's lack of knowledge about SP, lack of guidance, inadequate infrastructure and lack of institutional policy were identified as barriers to implementation. When we consider that the choice of companions is made according to the family's preference or need, not necessarily having personal skills or previous experiences in health care,[25] the principles of using SP are not always clear. A study carried out in the interior of São Paulo showed that patients in SP considered that SP measures were aimed only at reducing the risk of acquiring new diseases,[4] which reinforces the need for regular and structured guidance for this public. For this, it is suggested to include the guidelines as part of care planning.

Research indicates that institutional support is essential for the implementation of HAI prevention measures.[12-14] With regard to infrastructure, the unavailability of rooms prepared specifically for patients in SP and the poor location of washbasins or soap and antiseptic dispensers for HH are pointed out in the literature as important factors that hinder the process of compliance with HAI prevention measures.[12,27] Moreover, the unfavorable institutional climate, insufficient commitment from leadership and individuals, and lack of understanding of concepts were the main barriers encountered in implementing an effective communication protocol with patients in SP in a Brazilian teaching hospital.[11]

As limitations of this study, it can be pointed out the impossibility of identifying the number of HICPAC represented by respondents, since more than one professional from the same institution could answer the instrument; the data collection period coincided with the outbreak of the SARS-CoV-2 pandemic in Brazil, which may have generated a smaller number of responses, due to the high workload of professionals involved.

Despite such limitations, this study provides important elements, contributing to health services reviewing

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their care practices, developing institutional policies based on scientific evidence to guide the CV of patients in SP, in a coherently and standardized manner, and assessing CV's compliance with recommendations. The present study exposes the topic's relevance and the need for future studies to seek a balance between reducing the risk of transmission of microorganisms and the positive impact of CV on the recovery of patients hospitalized in SP.

It is concluded that, among the participants, there is no uniformity in the recommendations for CV of patients in SP. Among the recommendations, HH was the most frequent measure and was also mentioned in all types of precautions. The recommendation on wearing surgical mask and N95 was not adequate for CV of patients in DP and AP as well as wearing gloves for these types of SP.

With regard to the main inappropriate behaviors presented by CV, it is worth mentioning staying in the room without PPE, going to different patients' rooms and leaving the doors of rooms of patients in AP open. As barriers to implementation, infection preventionists mentioned the lack of institutional policies and the CV's lack of knowledge about SP and transmission of microorganisms.

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