Original Article

TEXTO & CONTEXTO ENFERMAGEM
TEXT & CONTEXT NURSING TEXTO & CONTEXTO ENFERMERÍA

COMMUNICATION NOISE DURING THE NURSING TEAM HANDOVER IN THE INTENSIVE CARE UNIT

Grazielle Rezende da Silva dos Santos[1]
Fabiana de Mello Barros[1]
Priscilla Valladares Broca[1]
Rafael Celestino da Silva[1]

[1]Universidade Federal do Rio de Janeiro, Escola de Enfermagem Anna Nery. Rio de Janeiro, Rio de Janeiro, Brasil.

ABSTRACT

Objective: to describe the communication process among the professionals of the intensive care nursing team during the handover, analyzing the existence of noise and its repercussions on patient safety.
Method: qualitative and exploratory study, in the light of Berlo, carried out at the intensive care unit of a federal hospital with 42 nursing professionals participating in the handover and/or acting in direct patient care. An audio recording of the handover was performed, as well as its systematic observation and the care practices of the nursing team. The audios were transcribed for an instrument and analyzed through descriptive statistics regarding the presence, completeness and correction of the information. The observation data were submitted to thick description.
Results: the noises were related to the absence/incompleteness of information about the patient, with focus on the communication about intercurrences and clinical evolution of the last 24 hours and little valuation of the data on evaluation, care plan and clinical condition of the patient; in addition to late arrivals, speaking with a low tone of voice, parallel conversations, and the use of cell phones. Such noises have caused unnecessary, wrong procedures or prevented procedures from being performed.
Conclusion: noise in the communication process negatively affects nursing and patient safety.

DESCRIPTORS: Patient handoff. Patient safety. Intensive care units. Health communication. Nursing.

HOW CITED: Santos GRS, Barros FM, Broca PV, Silva RC. Communication noise during the nursing team handover in the intensive care unit. Texto Contexto Enferm [Internet]. 2019 [cited YEAR MONTH DAY]; 28:e20180014. Available from: http://dx.doi.org/10.1590/1980-265X-TCE-2018-0014

RUÍDOS NA COMUNICAÇÃO DURANTE O *HANDOVER* DA EQUIPE DE ENFERMAGEM DA UNIDADE DE TERAPIA INTENSIVA

RESUMO

Objetivo: descrever o processo de comunicação entre os profissionais da equipe de enfermagem da terapia intensiva durante o *handover*, analisando-o quanto à existência de ruídos e suas repercussões na segurança do paciente.
Método: estudo qualitativo e exploratório, à luz de Berlo, realizado na unidade de terapia intensiva de hospital federal com 42 profissionais de enfermagem participantes do *handover* e/ou atuantes na assistência direta ao paciente. Foi realizada gravação do áudio do *handover*, bem como sua observação sistemática e das práticas de cuidado da equipe de enfermagem. Os áudios foram transcritos para um instrumento e analisados através de estatística descritiva quanto à presença, completude e correção da informação. Os dados da observação passaram por descrição densa.
Resultados: os ruídos relacionaram-se à ausência/incompletude de informações sobre o paciente, com focalização da comunicação sobre intercorrências e evolução clínica das últimas 24 horas e pouca valorização dos dados sobre avaliação, plano de cuidados e estado clínico do paciente; além de chegadas atrasadas, tom de voz baixo, conversas paralelas, uso de celulares. Tais ruídos geraram procedimentos desnecessários, errados ou a sua não realização.
Conclusão: ruídos no processo de comunicação afetam negativamente o cuidado de enfermagem, prejudicando a assistência prestada na perspectiva da segurança do paciente.

DESCRITORES: Transferência da responsabilidade pelo paciente. Segurança do paciente. Unidades de terapia intensiva. Comunicação em saúde; Enfermagem.

RUIDOS EN LA COMUNICACIÓN DURANTE EL *HANDOVER* DEL EQUIPO DE ENFERMERÍA DE LA UNIDAD DE TERAPIA INTENSIVA

RESUMEN

Objetivo: describir el proceso de comunicación entre los profesionales del equipo de enfermería de la terapia intensiva durante el *handover*, analizando la existencia del ruido y sus repercusiones en la seguridad del paciente.
Método: estudio cualitativo y exploratorio, a la luz de Berlo, realizado en la unidad de terapia intensiva de hospital federal con 42 profesionales de enfermería participantes del handover y/o actuantes en la asistencia directa al paciente. Se realizó grabación del audio del handover, así como su observación sistemática y de las prácticas de cuidado del equipo de enfermería. Los audios fueron transcritos a un instrumento y analizados a través de estadística descriptiva en cuanto a la presencia, completitud y corrección de la información. Los datos de la observación pasaron por una descripción densa.
Resultados: los ruidos se relacionaron con la ausencia/incompletud de informaciones sobre el paciente, con focalización de la comunicación sobre intercurrencias y evolución clínica de las últimas 24 horas y poca valoración de los datos sobre evaluación, plan de cuidados y estado clínico del paciente; además de llegadas atrasadas, tono de voz bajo, conversaciones paralelas, uso de celulares. Estos ruidos generaron procedimientos innecesarios, errados o su no realización.
Conclusión: los ruidos en el proceso de comunicación afectan negativamente el cuidado de enfermería, perjudicando la asistencia prestada en la perspectiva de la seguridad del paciente.

DESCRIPTORES: Pase de guardia. Seguridad del paciente.Unidades de terapia intensiva.Comunicación en salud.Enfermería.

INTRODUCTION

Communication is a process of understanding and sharing messages and, according to the way this information is shared, it influences the behavior of the people involved.[1] In this understanding, in the health area, communication influences relationships between professionals and between them and the patients, enabling individualized, humanized quality care.[2]

Communication is considered a necessary competence for professionals, especially nurses, who must be attentive to information and results of the communication process.[3] Thus, the communication between the nursing team should be understood as part of care, effective and which leads to good results in care.

Regarding the theory that seeks to explain how people communicate, one starts from the understanding that communication occurs in a continuous process in which one cannot identify the beginning nor the end. This process is composed of elements that interrelate andgive meaning to the objectives of the messages. They are: the source; encoding; the message; the channel; decoding; and, finally, the receiver of the message.[4]

The relationship between these elements provides a result, which may or may not be satisfactory. The term communication fidelity is used to refer to situations where the source is successful in transmitting the message, with fidelity, to the receiver.In order to do so, an encoder is needed that perfectly expresses what the source wants to transmit and a decoder capable of clearly translating the message produced by the source. When something goes wrong or interferes with this transmission or interpretation of the message, noise occurs.[4]

The concept of noise comes from the field of electronic communication, referring to factors that distort the quality of a signal. The difference between fidelity and noise is portrayed in the statement: “noise and fidelity are the two sides of the same coin. Eliminating noise increases fidelity; noise production reduces fidelity.”[4:41]

From this theoretical perspective, noise in communication between the health team is has been increasingly linked tothe discontinuity of care, to inadequate treatment, and is a current concern with regard to patient safety,[5–6] particularly in intensive care units (ICUs), where communication is complicated due to the flow of health professionals, patient instability and the need to manage complex therapies, information systems and equipment.[7]

Handover is an important time for communication which is intensely present in the provision of intensive care.Handover involves three characteristics: the transfer of information, responsibility and authority of a patient. It is a clinical activity that occurs at all hospital levels, ranging from the transfer of patient information among professionals from different shifts to the transfer of a patient between different sectors of the hospital and to other hospitals.[8–9]

Handovers occur through conversations among professionals or by reading the patient’s chart at their bedside, which allows the patient to participate. It is a time when discontinuity of care may occur, and when information about the patient’s clinical health status is not shared in a complete or efficient manner.[10]

Nurses are recognized as key participants in ensuring this continuity of care as they are with the in patients 24 hours a day, seven days a week. In addition, they are considered the articulators of communication among all health professionals and care coordinators.[10]

Studies indicate that the error rate in communication is significant during the sharing of information at handover, causing harm to the patients, and is recognized as a challenge for health in relation to safety.[11–12]

In studies limited to the ICU department, it is evident that this process of information transfer has not been standardized, as it was found that 62% of the ICU nursing handovers contained at least one error.[13]

In relation to nursing, an analysis of 54 handovers highlighted that in ICU I, 5.5% of the professionals carried out patient care during the sharing of information and thus did not devote their full attention to the information. In ICU II, 94.7% of the professionals were late during the handover, as well as parallel procedures and conversations occurring during the same time.[14]

These data corroborate with the researcher's experience, which indicates the presence of noise in the communication process during the handover between the nursing team in the ICU that can generate errors during care and result in adverse care events. Therefore, analysing how this information exchange is structured is an important tool for promoting secure communication.

Promoting effective communication is one of the objectives of the National Patient Safety Program, as well as a priority of the World Health Organization. In order to better understand how the communication process can interfere with the safety of patients hospitalized in an ICU, the objective of the study was to describe the communication process among the professionals of an intensive care nursing team during the handover, analyzing the existence of noise and its effect on patient safety.

METHOD

A qualitative study with an exploratory approach. The understanding of the problematic is based on the use of Berlo's theoretical support, for which communication is used among individuals in order to "influence with intention".[4:12] This communication presents an objective that would produce a reaction. Therefore, for communication to be considered effective in this theoretical perspective, it is necessary for the source to achieve its objective in terms of the receiver's response, indicating communication fidelity. On the other hand, when the source's objective does not adequately reach the receiver it implies non-effective communication, which means the presence of noise in the communication process.[4]

From this point of view, the application of such an analysis reference in the present study makes it possible to understand the elements that integrate the communicative process in the nursing handover in the ICU and how they influence the development of such a process. Thus, it enables us to understand the impacts in relation to effectiveness of the communication or the occurrence of noise among the nursing team professionals.

As the analysis of this effectiveness in the light of Berlo is based on the responses presented by the receiver in relation to the objective transmitted by the source, in the case of the communication that happens during the handover among the nursing professionals in the ICU, this analysis evidenced the repercussion of this communication on the planning of nursing care by the professionals who are taking over the new work shift and, consequently, on the development of their subsequent care actions, particularly regarding the safety of these careactions to the patient. In light of this, the use of Berlo's theoretical framework in research is justified.

The study was performed a federal university hospital in the city of Rio de Janeiro, in the surgical ICU of the same institution. This sector has the capacity to serve nine critical patients, with one bed reserved for patients in respiratory isolation. Regarding the profile of this environment in relation to the phenomenon under study, it is highlighted that the communication process occurs at the bedside with the presence of members of the nursing team with an instrument in the format of a checklist available in the sector which is used by the nursing team during the handover. The handover begins with the arrival of the next nursing shift.

Participants were members of the nursing team working in the surgical ICU of the institution. This team has on average of two nurses on duty and the nurse manager of the sector, in addition to six nursing technicians/assistants, who work 12-hour shifts with 60 hours of rest in-between shifts.

Considering the theoretical reference and an in-depth analysis of the communication in the ICU handover and its repercussions, it was understood that it is necessary to observe the nursing care actions performed from the communication established in the handover in order to analyze the responses of the receiver in relation to the objective transmitted by the source.

Therefore, the day shift was chosen due to its characteristics regarding the use of techniques, technologies and basic care, and the opportunity to deepen the observation of the daily care actions. Therefore, the handover time chosen for analysis was the exchange of shifts between nursing professionals working in the night (communication sources) and the team working in the daytime (considered receivers of the information).

The inclusion criteria were for participants were: to be a member of the ICU nursing team; participate in the formal period of handover and/or participate in the direct nursing care of the hospitalized patient in this sector after the handover. As exclusion criteria, the following were established: being a resident nurse; be away due to leave of any kind. Among 45 possible professionals, 42 participated in the study that met these criteria.

Data production was performed by the main researcher from November 2016 to January 2017. There was an exploratory phase, in which the researcher immersed herself in the field to initially familiarize herself with the reality and the participants and invite them to participate in the research.

The first phase of data production was the collection of direct data on the communication process among the members of the nursing team at the time of handover. In this first phase, the audio recording of the formal moments of handover among the nursing professionals occurred, for the purpose of recording the verbal communication content emitted by the participants. The first phase also included systematic observation of this handover with the objective of observing other elements that compose the communication process that can generate noise, following the concepts adopted by Berlo.[4]

The data obtained by recording the handover were transcribed and recorded using a handover instrument based on evidence of handover practice.[8–9,15] This instrument contained five sections: data on the patient's clinical profile; subjective data; objective data; evaluation of the patient's condition; and care plan.

In order to collect the handover observation data, a script was used which guided the observation of the tone of voice, interruptions, arrivals and departures of professionals, parallel conversations, etc. Thus, in addition to using the tape recorder to record the handover content, the researcher followed the formal moment of the handover while paying attention to the aspects that could interfere in the communication process. The records of the handover scenes in the field diary were made so as to portray such repercussions to the communicational process so that they could be analyzed in relation to noise configuration.

The second phase of data production involved the collection of direct data on the repercussion/influence of the communication process on caring practices, which occurred by systematically observing care actions. Therefore, an observation script was used to capture the nursing care dynamics of the ICU.

In this observation, it was sought to capture care situations that portray the influences on communication during handover in the development of care actions in order to analyse the effectiveness of this communication based on the responses of the receiver in relation toinformation.

Thus, after a direct observation of the handover, the researcher remained in the field observing the day-shift nursing team during their daily care activities, performing highly complex techniques, acting in moments of clinical changes, attending team meetings or promoting management care.

When scenes that had direct links to the communication in the handover were observed, they were recorded in a field diary whose notes described gestures, statements, actions, thoughts of the nursing team, as well as the place, the people involved, the moment of the action, and the forms of expression. When a total of 105 hours and 35 minutes of observation was reached, the pre-analysis indicated a comprehensive number of observed situations, and it was decided to finish the data collection.

The presence or absence of information, its completeness or incompleteness and its correction in relation to the items that should integrate the handover were analysed, in particular the transcribed data of the recording of the audio in the handover instrument. In this context, an absence was considered when no item of the analyzed section was mentioned in the handover, i.e., when the professional did not share any information regarding this section. Incompleteness was considered when only a few items of the section were mentioned or when the information on some item was unfinished. Errors were considered when the professional shared misinformation about the data of the patients.

In order to support this analysis, the data recorded in this instrument were cross-checked with the direct patient observation and the clinical data in the medical record. Thus, when each patient was included in the handover, a complete study was made of all of their relevant clinical data up to the current date, which was updated daily. For this characterization of presence, completeness and correction, the principles of descriptive statistics were applied by means of simple frequency and percentage.

In order to analyze data from observation, the principles of thick description were applied.[16] In this context, based on the detailed description of the handover scenes that dealt with the elements that integrate the communicative process for its effectiveness, as well as scenes of nursing care practices that were connected to communication noise occurring within the scope of handover, we sought to explain and interpret them in using thick description, taking into account the reference on communication support and research.

The research complied with ethical standards, and participants were asked to sign an informed consent form. The confidentiality of the participants was guaranteed through alphanumeric identification, using the code “ENF” for nurse and “TEC” for nursing technician*, followed by the Arabic number from the sequential order in which the observation was organized. The study was approved by the institution and by ethics committee with human research.

RESULTS

A total of 42 nursing professionals participated, among which 15 were nurses, seven worked during the day and eight during the night, in addition to 11 nursing technicians and 15 nurse assistants who worked during the day. In the period of data collection 131 instruments were completed through the transcription of the audios recordings of the handover. Regarding the general analysis of these data, there was absence and incompleteness in all the analyzed instruments, and errors occurred in four instruments.

This analysis was also performed according to the sections of the instrument, namely: identification data, which characterize the clinical profile of the patient regarding the length of hospital stay, the use of invasive devices, the indication of precautions and the presence of allergies; subjective data, which refer to the patient’s clinical history data, underlying diseases, reasons for ICU hospitalization and recent events; objective data, which provide information regarding the health of the patient per body

systems; evaluation, which contemplates the evaluation of the general state of the patient, contrasting the performed therapy and the patient responses; and care plan, which indicates the planned care and procedures and their preparation.

Table 1 present the distribution of missing, complete and incomplete information according to the sections of the instrument.

Table 1 - Distribution of information regarding presence and completeness in handover instrument sections. Rio de Janeiro, RJ, Brazil, 2016-2017. (N=131)

	Absent information		Incomplete information		Complete information	
Section	N	%	N	%	N	%
Clinical profile	89	67.9	42	32.1	-	-
Subjective data	4	3.0	126	96.2	1	0.8
Objective data	-	-	131	100.0	-	-
Evaluation	130	99.2	-	-	1	0.8
Plan	120	91.6	-	-	11	8.4

It can be verified that only the topic about the objective data was not absent at any time, however, it also did not present itself completely in the analyzed instruments. Comparing the sections that had some type of absence, the section of the subjective data presented the lowest percentage of absences among the information shared by the nursing professionals, however it was incomplete in most of the instruments. The topic of patient profile identification was absent in more than half of the analyzed handovers.

Another aspect that deserves attention is the fact that the data show that information about the evaluation and care plan of the patients were absent in more than 90% of the analyzed handovers. The evaluation of the patient is done by the nursing team that is ending the shift based on the information that was received at the beginning of the service and with the events that occurred during the period of their shift. Thus, the professional should evaluate the patient's health status, response to the treatment offered and the need for changes or maintenance regarding nursing care.

Therefore, the care plan for the patient should be drawn from the needs raised in this evaluation made by the professional. It is necessary to establish the procedures to be performed at the start of the work, so that the information receiving team is aware of the patient´s schedule and preparation.

When there is noise in the communication of this information regarding care planning, there is a risk, for example, that the patient undergoes a procedure which has already been performed by the previous nursing professional, such as a bath/hygiene that occurs in the following scene, which could delay the development of other activities or bring hemodynamic damage to patients, who are often clinically unstable.

Such a scene occurred after the handover had ended and the tasks were distributed at around 10 o'clock when after bathing the patients under her responsibility, TEC23 asked in a loud voice.

> TEC23: *'Who was bathed in the night shift?';* ENF13: *'Bed 14 and 16.';* TEC23: *'_Bed number 14? 14 was bathed? So why did we bathe him again? '*(Laughter); ENF13: *'I told you, I told you!'* (Excerpt from field diary, Nurse 13, Nurse Technician 23).

The ENF13 ended the dialogue with this phrase, because after the handover, when the tasks were being distributed to the nursing technicians she had communicated to the staff who had been

bathed in the previous shift, based on the information that was shared during the handover by the ENF11. However, on that day, at the time of the handover there were some interruptions. The environment was quite noisy as other staff members who were not participating in the handover remained in the sector and continued their own separate conversations during the time they were present.

Other noise was due the presence of doctors asking questions about the patient at the time of handover. This noise caused a break in the continuity of the information being shared, because after the questioning, the night nurse had to think a little before sharing the information with the team.

That same day, another noise that may have influenced the arrival of the correct message to the receiver was the very low speaking voice used by the night shift nurse ENF11, which often only faced the daytime nurse ENF13. This made it difficult for some nursing technicians to hear the handover and who needed to change their position or tilt their bodies to get closer to the nurse so that they understand what was being said.

Table 2 present the distribution of incomplete and incorrect information according to the sections of the instrument.

Table 2 - Distribution of incomplete and incorrect information by section in handover instruments. Rio de Janeiro, RJ, Brazil, 2016-2017. (N = 131)

	Incomplete information		Incorrect information	
Section	**N**	**%**	**N**	**%**
Clincalprofile				
ICU Hospitalization	30	71,4	-	-
Hospitalization	37	88,1	-	-
Diagnosis	14	33,3	-	-
Use of devices	40	95,2	-	-
Precaution/isolation	31	73,8	-	-
Subjetive data				
Medical history	110	87,3	-	-
Reason for admission	104	82,5	-	-
Last 24h events	20	15,9	-	-
Present health status	17	13,5	-	-
Objective data				
Vital signs	131	100	-	-
Neurological system	74	56,4	-	-
Skin integrity	63	48,0	-	-
Respiratory system	131	100	1	0,8
Cardiovascular system	131	100	-	-
Digestive system	110	83,9	2	1,5
Genitourinary system	93	70,9	-	-
Vascular catheters	34	25,9	-	-
Evalution	-	-	-	-
Plan	-	-	1	0,8

In the data on the profile, none of the analyzed instruments mentioned the presence of any type of allergy. Another factor that stood out was that most items were incomplete by more than 70%. It is noticed, through the insertion of the researcher in the field, that this information receives more attention from the professionals when the patient is newly admitted in the sector and clinical characteristics are still not completely known.

Subjective data were the second most frequently discussed topic among nursing professionals. The analytical reading of this section shows that the team is more concerned about communicating information considered more recent, such as events occurring during the last shift or about the patient's current health situation. These items presented a smaller amount of information, thus having a greater participation in communication during the handover. On the other hand, items referring to medical history and the reason for hospitalization presented more incompleteness.

However, even this subjective data about the patient, especially the data related to admission and events which occurred in the last shift, were incomplete, as shown in this scene during the admission of an ICU patient. At 11 o'clock, the TEC3 arrives at the nursing station where the ENF2 of the daytime service was and says:

> *'can you call the kitchen my patient is asking for food?';* ENF2: *'You have to wait for lunch!';*
>
> TEC3: *"But her record is not here, it's in the emergency department, at least it was yesterday. If you do not call them, no food is going to be sent up for her! '*(Excerpt from Field Diary, Nurse 02, Nurse Technician 03).

After 10 minutes, the ENF2 called the kitchen to order the food for that patient. At that time, she discovered that the patient's record was not in the hospital, since she had been discharged from the emergency room. This information about the registration of the ICU patient admission system was not communicated in the handover, which resulted in a lack of food for the patient in the morning.

Important objective items regarding care were incomplete in all the analyzed instruments, such as vital signs, respiratory and cardiovascular system data. It should be noted that all the patients hospitalized in this sector were under cardiac monitoring and the vast majority used some type of respiratory support. It was found that incompleteness occurred more frequently in rapidly changing items such as cardiac and respiratory data, as well as neurological and elimination data, which may indicate important hemodynamic changes in the critical patient.

The items that addressed the infusions and catheters can be considered as those to which the nursing professionals gave more importance, as well as the one that dealt with the laboratory and imaging exams, and were always mentioned in the handover when the patient had undergone an exam during the finishing shift.

The repercussions of the incompleteness in relation to the communication of objective data regarding the care provided are illustrated by means of the observation record which shows the performance of an unnecessary procedure. After the handover, the nurse in the sector distributed the activities among the nursing technicians and organized the work. At 10:20a.m., the nursing professionals had already commenced patient care.

After performing a procedure on patient in bed 16, the TEC1 approached the professionals who were in the nursing station and said in a loud voice:

> TEC1: *'I gave an enema, okay!'* At this point, another nursing technician inquires with a look of astonishment. TEC2: *'to bed 16? You gave an enema to Bed 16? ';* TEC1: *'Yes, I did. He hasn´t had a bowel movement in two days. '; TEC2: 'You have to wait for us, he had a lot of bowel movements!';* TEC1: *'But it´s been two days.';* TEC2: *'But it was a lot. The students were*

here and they saw it. ' TEC1 does not respond to the comment made by TEC2 and continued to carry out patient care. (Excerpt from the field diary, Nursing technicians 1 and 2).

In this particular case, when analyzing the handover of this day, the information about the patient´s two episodes large bowel movements, was not shared. When checking the patient's chart, it was found that he had had two large bowel movements two days previously, at 8:00 a.m. and 10:00 a.m. During the handover it was only mentioned that the patient had not had any bowel movements in the previous shift. Another aggravating factor was the absence of the care plan of this patient, since there was no mention of giving the patient an enema at any time during the handover.

In addition, the absence of the technicians during the handover could have contributed to this unnecessary procedure. The presence of these professionals could contribute to improved communication and understanding regarding the patient's health status and the elaboration of his/her care plan. This report shows how incompleteness/absence of important information can influence care.

The error, an element analysed in this study, occurred in four instruments. It occurred in one during the communication about the patient in bed 12, ENF09 from the night shift said that the patient's diet was 24h. Upon approaching the patient´s bed in order to verify this information, the ENF16 from the day shift realized that the diet had been stopped. The nurse corrected the problem and said:

'The diet was stopped! I started it here!' (Excerpt from field diary, Nurse 09 and Nurse 16). It was not possible to identify the time at which the diet was interrupted.

DISCUSSION

The significance of the data regarding the communication process of the ICU nursing team in the scenario of this research is based on Berlo[4] and on the evidence from the literature on the subject and its relation with security.

In order to have communication, interaction between the parties is required, i.e., source and receiver. Thus, one needs to put themselves in the other's place with reciprocal role-playing. A high degree of interaction will interfere with the effectiveness of communication. As the parties interact and are able to influence and be influenced, the concepts of source and receiver as distinct parts disappear and the idea of a process arises.[4]

One of the elements that composes this communication process is the message. This message consists of a code, the content of the message and its treatment. Regarding the code, when the source has an objective and wishes for it to be communicated, it searches for the best coders so that its message reaches the receiver as accurate as possible.[4]

In this study scenario, the night shift nurses are represented as the source coders. In this case, they had intended for the receivers, the day shift nursing team, to be aware of the information regarding the patient that they would be providing care to. As a means of encoding the message, the night shift professionals used the pronunciation of words through the Portuguese language, tone of speaking voice, gestures and the interpretation of the questions made by the receiving team. In this research, noises were evidenced at this moment in the process, since the night shift nurse's low tone of speaking voice negatively affected the communication.

Regarding the receiver-decoder, represented by the nursing professional of the day shift, it was observed that this professional also needed some skills to decode the message and to understand what the source was sharing. The communicative skills used by the receiver-decoder were listening, to listen to the message that was being spoken by the source, and vision, in order to follow the information from the printed information about the patients and to verify this information at the patient´s bedside. In order to listen, the receiver needed to be aware of what the source was talking about, so that it

could understand its intent, however some staff members did not keep the necessary attention on the source, which may have completely compromised the decoding of the message. The data observed during the research period indicate the lack of attention of some professionals during the handover, parallel conversations, the use of cell phones, late arrivals and interruptions.

Regarding the content of the message, professionals were expected to share the relevant information about the patient in order to ensure continuity of care by the professionals who were receiving the message. In this respect, there was a lack of important information, incompleteness of data and the occurrence of some errors. In summary, objective data were the most approached among nursing professionals, followed by subjective data and patient characteristics. The data on the evaluation and the care plan were hardly mentioned by the nursing team. Information about the patient's condition and care plan was less valued in relation to events that occurred in the last 24 hours.

In relation to the treatment of the message, decisions made by the source to share the message and obtaining the necessary answers from the receiver, in the studied ICU, the source shared the information primarily at the patient's bedside, face to face with the team that was in the position of message receiver, using verbal language and written information assistance.

This behavior is considered positive, since being close to the patient at the moment of information sharing helps the practitioner to compare the information being shared with the visual impressions regarding the actual patient during the handover, contributing to the reduction of errors and the correction of information shared in an unsatisfactory way.

The use of verbal and written communication is also a contributing factor that can avoid the loss of information. In the present scenario, the nursing professionals who shared the information used the nursing notes, while those who received the message wrote down the important items in their personal material and proceeded to verify the end of bed notes of the patients with the medical prescriptions and the fluid balance. The use of a standard instrument in the sector was not observed.

In light of the referential, these significant data show that the communication in the nursing handover in the researched institution presented noises. In this context, it is understood that the more noises a communication process presents, the less effective the source will be in expressing its objectives and obtaining the expected behavior of the receiver, thus reducing communication fidelity.[4] Thus, the intention of the communication, i.e., the continuity of patient care was adversely affected. This has sometimes caused some procedures to be performed more times than necessary, the non-performance of procedures and even the performance of inadequate procedures, such as giving an enema, related to the communication of information about the patient's gastrointestinal function, posing a safety risk to the patient.

The absence/incompleteness of handover information can also be observed in other studies. A study that occurred in an intensive care setting analyzed 16 handovers performed by nurses. The results showed that only 35.1% of the information related to the evaluation and care plan were shared. Information on the cardiovascular system was present in 7.4%, neurological system in 7.3%, respiratory system in 6.9%, gastrointestinal in 6.7%. Information related to treatment and medications was shared in 16% of handovers. The discussion on laboratory tests and allergies represented, respectively, 1.7% and 0.5% of the sample.[17]

In another study, the categories most frequently mentioned were patient identification (31.4%), followed by the care plan (25.2%), clinical history and presentation (12.7%), (12.5%) and, finally, the results and care goals, present in a smaller amount (3.7%) .[18] In the research that analyzed data related to incidences with the handover of ICU patients, it was evidenced that critical information about the patient's condition was omitted in 19.2% and information about the patient care plan was omitted in 14.2% of the analyzed handovers.[19]

The results from these studies are similar to the present study regarding the frequency of the information contained in the handover, since a lot of information regarding the patients' objective data and care plan were incomplete/absent in many parts of the analyzed handovers.

The noises related to the behavior of the professionals are in agreement with other authors, for whom these behaviors can be harmful, making the communication process less effective.[20–22] Distractions such as parallel conversations that are not related to handover and interruptions may cause problems in the flow of information shared with the team, which may generate errors during care.[20]

The parallel discussion among health team professionals at the time of handover was also reported in a study that aimed to measure the frequency of handover disruptions in an ICU. In this study, most interruptions corresponded to dialogues with other professionals at the time of handover, representing 77% of the sample. This behavior among health professionals ends up becoming common and is not seen as a problem, but as a characteristic of the sector.[21]

Professionals rushing to leave the sector, late arrivals, delays in commencing the handover, lack of clarity during the oral communication, and interruptions from other professionals are some of the factors that may interfere negatively in the exchange of nursing team shifts.[22]

Therefore, the absence and insufficiency of patient information, parallel conversations and interruptions block the message from reaching the receiver clearly. Noises during the communication between the nursing team generates uncertainty regarding patient care,[23–25] because the actions performed based on incorrect messages can put the patient at risk when they undergo an unnecessary procedure or when a procedure is not carried out due to lack of information.

Technical errors due to communication failure regarding the care plan during handover are also observed in a study on medication errors in care transition.By searching for published articles from 1946 to 2014, the authors state that most medication errors originate from the lack of effective communication among care providers during the transition of care, particularly with regard to medication conciliation.[26]

This was repeated in 200 handovers, which found discrepancies in 23 handovers related to drug doses, with only half of the dose being administered. Orders for delayed or missed care occurred in 52% of cases. In addition, 33% of handovers were missing laboratory test orders, updates regarding diet changes or physical therapy.[27]

In view of these results, the nursing professionals' change of attitude in favour of patient safety is then based on the understanding and appreciation of the information that should be shared during the handover. For this, the development of skills and competences is of paramount importance to improve the quality of the communication process and the safety of care.One strategy is the implementation of a simulation-based training program, the other is team management regarding communication, which includes a discussion of the barriers that impede the process and the noises that modify the message, showing the need for a positive interpersonal relationship that allows team interaction.

The limitations of the research are due to the study being focused on a specific moment of handover, reducing the comprehensiveness of the results, which opens the possibility to future research on handover communication during the transfer of the patient to another sector or another hospital.

CONCLUSION

Based on the problem presented in this research and on the objective outlined for its comprehension, it was verified that the communication process during the handover presents positive and negative aspects in light of the theoretical reference applied in the investigation. The evidenced elements that weaken this process were the absence/incompleteness of patient information, with focus on the communication regarding intercurrences, evolution of the patient in the last 24 hours, in addition to exam results and inadequate attention to evaluation data, care plans and information on

the patient's clinical status. Interruptions such as late arrivals or early departures, low tone of speaking voice, parallel conversations and the use of cell phones caused communication noise among the nursing staff, sometimes leading to the discontinuation of information and loss of data.

Such noises are responsible for carrying out unnecessary, erroneous actions or procedures or their non-fulfillment, posing risks to the patient's safety. Therefore, the results show that noises in the communication process negatively affect care, jeopardizing care that is being provided from the perspective of security.

REFERENCES

1. Barbosa IA, Silva KCCD, Silva VA, Silva MJP. The communication process in Telenursing: integrative review. Rev Bras Enferm [Internet]. 2016 Jul [cited 2017 Jul 09]; 69(4):718-25. Available from: https://dx.doi.org/10.1590/0034-7167.2016690421i
2. Martins CCF, Santos VEP, Pereira MS, Santos NP. The nursing team's interpersonal relationships versus stress: limitations for practice. Cogitare Enferm [Internet]. 2014 Jun [cited 2017 Jul 10]; 19(2):309-15 Available from: https://dx.doi.org/10.5380/ce.v19i2.36985
3. Oliveira AM, Soares E. Communication in the interpersonal relationship nurse/patient with an indication for kidney transplant. Cienc Cuid Saude. [Internet]. 2016 Oct-Dec [cited 2017 Jul 10]; 15(4):647-54. Available from: https://dx.doi.org/10.4025/cienccuidsaude.v15i4.29365.
4. Berlo DK. O processo da comunicação. Rio de Janeiro: Fundo da cultura; 2003.
5. Oliveira M, Rocha R. Reflection on the shift changes: implications in the continuity of nursing care. Enf Rev [Internet]. 2016 Oct [cited 2017 Jul 10]; 19(2):226-34. Available from: http://periodicos.pucminas.br/index.php/enfermagemrevista/article/view/13154
6. Bueno BRM, Moraes SS, Suzuki K, Gonçalves FAF, Barreto RASS, Gebrim CFL. Characterization of handover from the surgical center to the intensive care unit. Cogitare Enferm [Internet]. 2015 Jul-Sep [cited 2017 Jun 14]; 20(3):511-7. Available from: http://revistas.ufpr.br/cogitare/article/view/40274/26257.
7. Minuzzi AP, Salum NC, Locks MOH, Amante LN, Matos E. Contributions of health care staff to promote patient safety in intensive care. Esc Anna Nery [Internet]. 2016 Mar [cited 2017 Oct 03]; 20(1):121-9. Available from: https://dx.doi.org/10.5935/1414-8145.20160017
8. Ilan R, Le Baron CD, Christianson MK, Heyland DK, Day A, Cohen MD. Handover patterns: on a observational study of critical care physicians. BMC Health Serv Res [Internet]. 2012 Jan [cited 2017 Mai 05]; 12(1):11. Available from: https://dx.doi.org/10.1186/1472-6963-12-11
9. Abraham J, Kannampallil T, Patel B, Almoosa K, Patel VL. Ensuring patient safety in care transitions: an empirical evaluation of a handoff intervention tool. AMIA Annu Symp Proc [Internet]. 2012 Nov [cited 2016 Jan 31]; 2012:17-26. Available from: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3540511/
10. Smeulers M, Lucas C, Vermeulen H. Effectivenessof different nursing handover styles for ensuring continuity of information in hospitalized patients. Cochrane Database Syst Rev [Internet]. 2014 Jun [cited 2017 Mai 06];6:CD009979. Available from: https://dx.doi.org/10.1002/14651858.CD009979.pub2
11. Maughan BC, Lei L, Cydulka RK. ED handoffs: observed practices and communication errors. Am J Emerg Med [Internet]. 2011 Jun [cited 2016 Oct 02]; 29(5):502-11. Available from: https://dx.doi.org/10.1016/j.ajem.2009.12.004

12. Venkatesh AK, Curley D, Chang Y, Liu SW. Communication of vital signs at emergency department handoff: opportunities for improvement. Ann Emerg Med [Internet]. 2015 Aug [cited 2016 Oct 02]; 66(2):125-30. Available from: https://dx.doi.org/10.1016/j.annemergmed.2015.02.025

13. Spooner AJ, Chaboyer W, Corley A, Hammond N, Fraser JF. Understanding current intensive care unit nursing handover practices. Int J NursPract [Internet]. 2013 Apr [cited 2017 Jul 09]; 19(2):214-20. Available from: https://dx.doi.org/10.1111/ijn.12058

14. Valera IMA, Reis GAX, Oliveira JLC, Souza VS, Hayakawa LY, Matsuda LM. Shift changes in pediatric intensive care units: a descriptive study. Online Braz J Nurs [Internet] 2015 Dec [cited 2017 Jul 05]; 14(0):440-2. Available from: https://dx.doi.org/10.17665/1676-4285.20155281

15. Blouin AS. Improving hand-off communications: new solutions for nurses. J Nurs Care Qual [Internet]. 2011 Apr-Jun [cited 2017 Aug 15]; 26(2):97-100. Available from: https://dx.doi.org/10.1097/NCQ.0b013e31820d4f57

16. Geertz C. A interpretação das culturas. Rio de Janeiro: Guanabara Koogan; 1989.

17. Abraham J, Kannampallil T, Brenner C, Lopez KD, Almoosa KF, Patel B, et al. Characterizing the structure and contente of nurse handoffs: a sequential conversational analysis approach. J Biomed Inform [Internet]. 2016 Feb [cited 2017 Mai 29]; 59:76-88. Available from: https://dx.doi.org/10.1016/j.jbi.2015.11.009

18. Johnson M, Sanchez P, Suominen H, Basilakis J, Dawson L, Kelly B, et al. Comparing nursing handover and documentation: forming one set of patient information. Int Nurs Rev [Internet] 2014 [cited 2017 Aug 06]; 61(1):73-81. Available from: https://dx.doi.org/10.1111/inr.12072

19. Thomas MJ, Schultz TJ, Hannaford N, Runciman WB. Failures in transition: learning from incidents relating to clinical handover in acute care. J Health Qual [Internet] 2013 May-Jun [cited 2017 Jul 01]; 35(3):49-56. Available from: https://www.ncbi.nlm.nih.gov/m/pubmed/22268639.

20. McMullan A, Parush A, Momtahan K. Transferring patient care: patterns of synchronous bidisciplinary communication between physicians and nurses during handoffs in a critical care unit. J Perianesth Nurs [Internet]. 2015 Apr [cited 2016 Jan 25]; 30(2):92-104. Available from: https://dx.doi.org/10.1016/j.jopan.2014.05.009

21. Spooner AJ, Corley A, Chaboyer W, Hammond NE, Fraser JF. Measurement of the frequency and source of interruptions occurring during bedside nursing handover in the intensive care unit: an observational study. Aust Crit Care [Internet] 2015 Feb [cited 2017 Aug 06]; 28(1):19-23. Available from: https://dx.doi.org/10.1016/j.aucc.2014.04.002

22. Rodriguez EOL, Oliveira CS, França TRS, Andrade JS, Campos MPA, Silva FJCP. Mapeamento da passagem de plantão sob a ótica dos profissionais de enfermagem. EnfermGlob [Internet]. 2013 [cited 2017 Jun 06]; 12(3):206-18. Disponível em: https://dx.doi.org/10.6018/eglobal.12.3.157441

23. Siman AG, Cunha SGS, Brito MJM. Nursing actions for patient safety in hospitals: integrative review. Rev Enferm UFPE on line [Internet] 2017 Feb [cited 2017 Jun 29]; 11(suppl. 2):1016-24. Available from: https://dx.doi.org/10.5205/1981-8963-v11i2a13472p1016-1024-2017

24. Nogueira JWS, Rodrigues MCS. Effective communication in teamwork in health: a challenge for patient safety. Cogitare Enferm [Internet] 2015 Jul-Sep [cited 2017 Aug 06]; 20(3):636-40. Available from: https://dx.doi.org/10.5380/ce.v20i3.40016

25. Oliveira RM, Leitão IMTA, Silva LMS, Figueiredo SV, Sampaio RL, Gondim MM. Strategies for promoting patient safety: from the identification of the risks to the evidence-based practices. Esc Anna Nery [Internet] 2014 Jan-Mar [cited 2017 Aug 05];18(1):122-9. Available from: https://dx.doi.org/10.5935/1414-8145.20140018

26. Johnson A, Guirguis E, Grace Y. Preventing medication errors in transitions of care: a patient case approach. J Am Pharm Assoc [Internet]. 2015 Mar-Apr [cited 2016 Oct 02]; 55(2):e264-74. Available from: https://dx.doi.org/10.1331/JAPhA.2015.15509

27. Drach-Zahavy A, Goldblatt H, Maizel A. Between standardization and resilience: nurses' emergente risk management strategies during handovers. J Clin Nurs [Internet]. 2015 Feb [cited 2017 Jul 07]; 24(3-4):592-601. Available from: https://dx.doi.org/10.1111/jocn.12725

NOTES

ORIGIN OF THE ARTICLE

Article extracted from the thesis - Communication in the nursing care clinic in intensive care: the handover case, presented to the Nursing Graduate Program, *Escola de Enfermagem Anna Nery*, *Universidade Federal do Rio de Janeiro*, in 2017.

CONTRIBUTION OF AUTHORITY

Study design: Santos GRS, Barros FM, Silva RC.
Data collect:Santos GRS, Barros FM.
Data analysis and interpretation:Santos GRS, Barros FM, Broca PV, Silva RC.
Discussion of the results:Santos GRS, Barros FM, Broca PV, Silva RC
Writing and / or critical review of content: Santos GRS, Barros FM, Broca PV, Silva RC.
Review and final approval of the final version: Santos GRS, Barros FM, Broca PV, Silva RC.

FUNDING INFORMATION

Project financedby CNPq (*Conselho Nacional de Desenvolvimento Científico e Tecnológico*) Universal Announcement 01/2016 Process Nº: 431845/2016-6.

ETHICS COMMITTEE IN RESEARCH

Approved by the Ethics Committee in Research with Human Beings of the *Escola de Enfermagem Anna Nery, Universidade Federal do Rio de Janeiro*, parecer n 1.728.672**,** Certificate of Presentation for Ethical Appreciation (CAAE): 56986916.8.3001.5257.

CONFLICT OF INTEREST

There is no conflict of interest.

HISTORICAL

Received: February 01, 2018.
Approved: June 12, 2018.

CORRESPONDENCE AUTHOR

Rafael Celestino da Silva
rafaenfer@yahoo.com.br