









## **NURSING TECHNICIANS' PROXEMIC BEHAVIORS DURING TRANSFUSIONS IN HOSPITALIZED CLIENTS**

Francisco Gleidson de Azevedo Gonçalves<sup>1</sup>   
Sílvia Teresa Carvalho de Araújo<sup>1</sup>   
Albert Lengruber de Azevedo<sup>1</sup>   
Priscila Brigolini Porfirio Ferreira<sup>1</sup>   
Danelia Gómez Torres<sup>2</sup>   
Eugenio Fuentes Pérez Júnior<sup>3</sup>   
Soraia do Socorro Furtado Bastos<sup>1</sup>   
Suely Francisco da Silva<sup>1</sup> 

<sup>1</sup>Universidade Federal do Rio de Janeiro, Programa de Pós-Graduação da Escola de Enfermagem Anna Nery, Rio de Janeiro, Rio de Janeiro, Brasil.

<sup>2</sup>Universidad Autonoma del Estado de México, Facultad de Enfermería, Toluca, Estado de México, México.

<sup>3</sup>Universidade do Estado do Rio de Janeiro, Faculdade de Enfermagem, Rio de Janeiro, Rio de Janeiro, Brasil.

### **ABSTRACT**

**Objective:** to describe nursing technicians' proxemic behaviors during transfusions in hospitalized clients.

**Method:** a qualitative, descriptive and exploratory study based on non-participant observation, recorded in an instrument prepared from the Theory of Proxemic Behavior. The participants were 18 nursing technicians from a reference hospital for Hematology and Hemotherapy in the Brazilian Southeast Region, from April to December 2022. Data analysis prioritized thematic content.

**Results:** the following stood out: eye contact; instrumental touch; normal tone of voice; and intimate and personal distances. These indicate welcoming, attention and technical vigilance when carrying out the transfusions.

**Conclusion:** there is a need to raise nursing technicians' awareness regarding proxemic behaviors when welcoming clients. That is: expanding listening, bonding and effective interpersonal coexistence, and favoring the reach of comprehensive health care in Hematology and Hemotherapy.

**DESCRIPTORS:** Personal space. Non-verbal communication. Behavioral sciences. Hemotherapy service. Blood transfusion. Nursing.

**HOW CITED:** Gonçalves FGA, Araújo STC, Azevedo AL, Ferreira PBP, Torres DG, Pérez Júnior EF, Bastos SSF, Silva SF. Nursing technicians' proxemic behaviors during transfusions in hospitalized clients. Texto Contexto Enferm [Internet]. 2024 [cited YEAR MONTH DAY]; 33:e20230207. Available from: <https://doi.org/10.1590/1980-265X-TCE-2023-0207en>

# COMPORTAMENTOS PROXÊMICOS DE TÉCNICOS DE ENFERMAGEM DURANTE O ATO TRANSFUSIONAL EM CLIENTES HOSPITALIZADOS

## RESUMO

**Objetivo:** descrever os comportamentos proxêmicos de técnicos de enfermagem durante o ato transfusional em clientes hospitalizados.

**Método:** estudo qualitativo, descritivo e exploratório, pautado em observação não participante, registrado em instrumento elaborado a partir da teoria do comportamento proxêmico. Participaram 18 técnicos de enfermagem de um hospital referência em hematologia e hemoterapia da Região Sudeste do Brasil, de abril a dezembro de 2022. A análise de dados priorizou o conteúdo temático.

**Resultados:** destacaram-se o contato visual; o toque instrumental; o tom de voz normal e as distâncias íntima e pessoal. Estes, indicativos de acolhimento, atenção e vigilância técnica à realização do ato transfusional.

**Conclusão:** há necessidade de despertar a consciência dos técnicos de enfermagem em relação aos comportamentos proxêmicos durante o acolhimento aos clientes. Isto é: ampliar a escuta, o vínculo, a efetiva convivência interpessoal e favorecer o alcance dos cuidados em saúde integral na hematologia e hemoterapia.

**DESCRITORES:** Espaço pessoal. Comunicação não verbal. Ciências do comportamento. Serviço de hemoterapia. Transfusão de sangue. Enfermagem.

# COMPORTAMIENTOS PROXÉMICOS DE TÉCNICOS DE ENFERMERÍA DURANTE TRANSFUSIONES EN CLIENTES INTERNADOS

## RESUMEN

**Objetivo:** describir los comportamientos proxémicos de técnicos de Enfermería durante transfusiones en clientes internados.

**Método:** estudio cualitativo, descriptivo y exploratorio, basado en la observación no participante y registrado en un instrumento elaborado a partir de la Teoría del Comportamiento Proxémico. Los participantes fueron 18 técnicos de Enfermería de un hospital que es referencia en Hematología y Hemoterapia de la Región Sudeste de Brasil, entre abril y diciembre de 2022. En el análisis de los datos se priorizó el contenido temático.

**Resultados:** se destacó lo siguiente: contacto visual; toque instrumental; tono de voz normal; y distancias íntima y personal; los cuales indican buen recibimiento, atención y vigilancia técnica al realizar las transfusiones.

**Conclusión:** es necesario generar conciencia en los técnicos de Enfermería con respecto a los comportamientos proxémicos al recibir a los clientes. Eso implica: prestar más atención al escuchar y ampliar los vínculos y la convivencia interpersonal efectiva, además de favorecer el alcance de las medidas de atención en integrales en Hematología y Hemoterapia.

**DESCRIPTORES:** Espacio personal. Comunicación no verbal. Ciencias del comportamiento. Servicio de hemoterapia. Transfusión sanguínea. Enfermería.

## INTRODUCTION

Proxemic behavior refers to the study of interactions, proximity and/or distances established between people and objects, presence and/or absence of physical and social contact; types of space; grammar of interpersonal relationships and variables related to the body<sup>1-2</sup>. Its understanding varies greatly between cultures and can also be associated with individuals, situations and phenomena such as emotions, for example. In addition to that, it is able to show how small changes in the environment and body language can exert significant effects on social interactions<sup>2</sup>.

In countries like Chile, maintaining intimate distance in public can indicate offense, disrespect or rudeness. In Iran, when this happens, attitudes such as crossing arms, placing the hands on the hips or even less open and expansive body postures are expected due to sociocultural norms. In Brazil, this is an accepted distance in some situations. Generally, hugging someone means affection, warmth, brotherhood or intuition<sup>3</sup>.

To understand the concept of proxemic behaviors, their eight factors must be considered. The gender-posture, for example, concerns the analysis of people's gender and position: standing, sitting and lying down; the sociofugal-sociopetal axis refers to the face to face angle, back angle and other angles of the trunk and shoulders; kinesthesia is due to short-distance physical contact, such as touching or rubbing the skin; contact behavior is through tactile relationships: caressing, grabbing, feeling, holding or not maintaining physical contact; the visual code: "eye-to-eye" contact or its absence; thermal, which refers to the heat felt; olfactory, referring to the odor characteristics and degrees perceived and the voice volume to the perception of interpersonal space<sup>1-2</sup>.

The theory of proxemic non-verbal communication is concerned with space, distances and postures maintained. And it designates a set of observations regarding their use. Thus, the culture that people are part of, territoriality and body variables in interaction (regardless of place) are called acculturation<sup>4</sup>. And the following should be considered to address their use: the intimate space with a distance up to 45 cm between people; the personal space, which is from 46 cm to 120 cm; the social space, from 120 cm to 370 cm; and the public space, more than 370 cm. Understanding these distances implies recognizing one's own postures even before the client arrives, as it complements during care provision<sup>1</sup>.

It involves attempts to make the environment as therapeutic as possible, surrounded by professionals who are aware of their own position. Not only that, it is also about the presentation of furniture, artifacts, colors, sounds and clothing that complement the use of words<sup>2</sup>. Finally, even though proxemic non-verbal communication seems to be a barrier for many professionals, expressions of pain, "face turns", negative and/or positive shaking of the head or even a groan can indicate the need for recognition of personal and territorial spaces to evaluate and intervene<sup>5-6</sup>.

The intersubjective richness present in the Hemotherapy environment is a form of communication that represents an important tool for the professional practice. Whether at the welcoming moment, in placing the client in bed, in anamnesis, in the physical examination, when puncturing a vein, removing a needle, applying a dressing or even at "discharge", it can enable significant improvements in social relationships and assistance<sup>7-8</sup>. Ensuring that this environment produces well-being and quality of life is of great value.

Therefore, considering it during a transfusion requires qualified and conscious professionals, attentive to postures, behaviors and attitudes, necessary fundamentals for the care to be provided<sup>4</sup>. This form of communication should be understood in a dynamic way, as it requires constant rapprochement between people, listening and attentive and qualified looks. It is also important to provide welcoming

environments, healthy interpersonal relationships, expressions and manifestations of respect and bonding which, although momentary, can take place all the time (on alternate days, month to month, hour to hour, every minute, etc.), depending on the time the client remains hospitalized<sup>2</sup>.

Although this is not a new topic in the health area, it presents some gaps, such as the absence of national and international studies on the Nursing team proxemic non-verbal communication in the Hemotherapy environment. Therefore, the transfusions and the behaviors and postures expressed by nurses during these procedures, among others, touch on the heart of teaching, research, management and assistance.

Nursing represents a health area profession concerned with human beings and which is also attentive to proxemic non-verbal communication in several spaces. Thus, the following objective was defined for this study: to describe nursing technicians' proxemic behaviors during transfusions in hospitalized clients.

## METHOD

This is a qualitative, descriptive-exploratory and observational study, anchored in the theoretical framework of proxemic non-verbal communication. The participants were 18 nursing technicians, out of a total of 20 selected for convenience.

The inclusion criteria used were as follows: being a daytime nursing technician, responsible for transfusions and client care, for at least six months. This minimum performance is related to the need to know the scenario and its complexity. Those who were away from work during the data collection period due to medical leave were excluded, as well as those on vacation, those who did not participate at the moments proposed and those who refused to participate for any reason. With the allegation of work overload due to the COVID-19 pandemic, 02 nursing technicians refused to participate.

The setting, a ward in a large state hospital that is a reference in Hematology and Hemotherapy (located in the Brazilian Southeast region), was chosen intentionally. In other words, it is a space commonly frequented by nurses, physicians, nursing technicians, clients and family members 24 hours a day, intended for hospitalization and care for onco-hematological clients.

Initially, to gain access to the participants, it was necessary to visit the Nursing Coordination office to establish good contact. It was a time to clarify doubts about how to conduct the research and it was also informed that assistance to the clients would be maintained, assured and uninterrupted; in addition the scheduling for data production was defined.

Subsequently, a face-to-face meeting was held with nursing technicians and clients, privately, on a rotating basis and from 7 am to 7:30 am, where they were invited to participate in the study and clarify their doubts. After acceptance, the non-participant observation technique used to produce data about the items that would be covered was explained.

Data collection took place from April to December 2022, from Monday to Friday and between 8 am and 12 pm., after incorporating a nurse to the setting and familiarizing her with it. Trained by the main author, she has extensive knowledge in qualitative research in the Hematology area, with an emphasis on verbal and non-verbal communication during transfusions. For this purpose, a non-participant observation script was used as instrument.

Carried out in person and individually, the observations included a search for proxemic factors during the transfusions. Each observation lasted a mean of four hours per participant. It is noted that three pilot tests were also carried out in person by the same nurse, approximately 15 days before data collection, lasting a mean of four hours each and included in the study for reaching depth on the topic.

After obtaining the data, they were electronically transcribed. On the same day it was transcribed, respect, fidelity and integrity of the information were notable. The observations ended when data saturation was reached due to the repetition of information learned in the time taken to collect the data. In other words, when theoretical constructs related to nursing technicians' proxemic non-verbal communication during the transfusions were identified. No software was used for the data transcription and analysis process.

Thematic content analysis was adopted<sup>9</sup> due to its technical support, which is organized into different stages; namely: pre-analysis; exploitation of the material or coding; and treatment, inference and interpretation of the results.

In the "pre-analysis" stage, a floating reading and exhaustive re-reading of the material were carried out in order to organize the data and reach the analysis *corpus*. In the "exploration of the material" stage, the most frequent registration units were considered (139 initial codes), subsequently grouped into three preliminary subcategories according to semantic similarities and differences. In the "data treatment" stage, inferences were made, in addition to interpreting the content learned in the observations. Thus, they culminated in a large thematic category entitled "Nursing technicians' proxemic behaviors during transfusions". This is based on the theory of proxemic non-verbal communication.

Proxemic communication studies the social meaning of space in the interactional field and is determined by the distances and proximities that people maintain in relation to each other. It includes reactions and changes in behavior perceived by the senses of sight, hearing, smell and touch. These radars are sensitive and perceptible to the way in which people position themselves and move in relation to each other, manage, occupy and act in certain spaces.

In the meantime, space can be apprehended based on people's intentional or unintentional postures in a process that is inherent to the construction of their culture and acculturation. Regarding the fixed characteristics of space, such as: buildings, distribution of the rooms in a house, organization of cities; semi-fixed: the presentation of furniture in a room, the position in which a person sits on a chair; and informal: the encounters established with other people or the movements made close to a body, among others.

To ensure methodological rigor of the research, the principles of suitability, transferability, confirmability and credibility were respected, in accordance with the criteria established in the *Consolidated Criteria for Reporting Qualitative Research* (COREQ). In addition, strategies were used to obtain data, such as sociodemographic and organizational presentation, as well as a detailed description of its stages<sup>10</sup>.

The study met Resolution No. 466/2012 of the National Health Council, which deals with research studies involving human beings. It is noted that the participants received diverse information about the stages contained in the research regarding free choice of participation. At that moment, the free and informed consent form was made available for reading, in two copies in Portuguese, and subsequently signed.

To ensure the participants' anonymity, each of them was identified by the letters (NT), meaning "Nursing Technician", followed by Arabic numerals according to the sequence in which the observations took place (NT1...NT18).

## RESULTS

Most of the participants were women (n=17), married (n=8), aged between 25 and 45 years old (n=12) and had worked in the Hemotherapy service for more than 6.6 years. Among the 62 observations, there was greater predominance of the sitting position (66.6%), that is, the posture-gender proxemic factor.

Another position observed was standing (100%), used by the professionals to get closer to the clients. Intimate distance prevailed, which involved carrying out technical procedures, such as checking body temperature and vital signs and installing the blood component, in 83.4%.

Three angles of the interlocutors were considered on the sociofugal-sociopetal axis, namely: facing each other, sideways (or parallel) and facing away. As a result, most of the nursing technicians (15 [83.4%]) adopted the face-to-face axis and 3 (16.6%) chose the lateral axis. In these cases, regardless of the client, they continued to communicate with other professionals present in the ward.

Regarding the kinesthetic or kinesthetic factors, 15 (83.4%) nursing technicians demonstrated intimate distance and 03 (16.6%) maintained personal distance. All clients (18 [100%]) remained in bed at the interaction and care moments, with 12 (66.6%) of them sitting and 6 (33.4%) lying down.

The facial expressions were captured through the mask between professionals and clients, as the data collection period was determined by the safety standards imposed on health services due to the COVID-19 pandemic. Even so, in many professionals, through the forehead muscles and eye movements, it was possible to observe that smiles prevailed among the facial expressions. In addition to that, the clients expressed peace of mind with the care provided by the Hemotherapy nursing technicians throughout the installation of their transfusions.

Of all participants, 17 (94.4%) performed instrumental touch. There was no expressive-instrumental, instrumental-affective or expressive touch. The following was also noticed: lack of caresses; lack of prolonged touching; and lack of gestures of apprehension and determination. Only 1 participant (5.5%) did not touch the client. There was predominance of eye contact in 100%.

The "voice volume" proxemic factor demonstrated at the interaction moment was: normal (audible) for 17 (94.4%) nursing technicians and low for 1 (5.5%). No verbalization was performed by changing the voice. The professionals involved in these interactions communicated with the clients using low, calm and soft voices that exert effects of peace, affection and love.

With regard to the olfactory code, it is worth noting that all professionals shared that using a mask hinders capturing this sense. However, everyone (100%) reported perceiving some smell at the interaction moment, whether from the client, injuries, excreta, food or hygiene. It is worth noting that, for them, smells oftentimes go beyond the work environment and permeate the family environment as a reminder of the care provided in the hospital.

Based on the technical input and on the observational analysis adopted, a synoptic chart was prepared to show nursing technicians' proxemic behaviors during transfusions in hospitalized clients. To this end, the eight factors of proxemic communication and the frequency of all the information learned from the observations are presented, described in Chart 1.

The proxemic behaviors observed included eye contact, instrumental touch, calm and normal tone of voice, intimate and personal distance (indicating that the client is welcomed), as well as attention and technical supervision during the transfusions.



**Chart 1** – Nursing technicians’ proxemic behavior during transfusions in hospitalized clients. Rio de Janeiro, RJ, Brazil, 2023 (n=18).

Factors from the Hall Theory	Nursing Technicians n=18	F	Clients n=18	F
<b>Duration</b>	72 hours	100%	72 hours	100%
<b>Position</b>	Standing: (18)	100%	Standing: (00)	0%
	Seated: (00)	0%	Seated: (12)	66.6%
	Others: (00)	0%	Others: (06) Lying down	33.3%
<b>Distance</b>	Intimate (0 – 0.50 m): (15)	83.3%	Intimate (0 – 0.50 m): (15)	83.3%
	Personal (0.50 – 1.20 m): (03)	16.6%	Personal (0.50 – 1.20 m): (03)	16.6%
	Social (1.20 – 3.60 m): (00)	0%	Social (1.20 – 3.60 m): (00)	0%
	Public (more than 3.60 m): (00)	0%	Public (more than 3.60 m): (00)	0%
<b>Tone of voice</b>	Low (whisper): (01)	5.5%	Low (whisper): (00)	0%
	Normal (audible): (17)	94.4%	Normal (audible): (18)	100%
	Loud (scream): (00)	0%	Loud (scream): (00)	0%
<b>Axis of the interlocutors</b>	Face to face: (15)	83.3%	Face to face: (05)	27.7%
	Sideways: (03)	16.6%	Sideways: (13)	72.2%
	Back: (00)	0%	Back: (00)	0%
<b>Contact behavior</b>	Instrumental touch: (17)	94.4%	Instrumental touch: (17)	94.4%
	Affective touch: (00)	0%	Affective touch: (00)	0%
	(01) Others: No touch	5.5%	(01) Others: No touch	5.5%
<b>Visual contact</b>	Yes: (18)	100%	Yes: (18)	100%
	No: (00)	0%	No: (00)	0%
<b>Verbal communication</b>	Yes: (18)	100%	Yes: (18)	100%
	No: (00)	0%	No: (00)	0%

## DISCUSSION

The analysis corresponding to the profile of the Hemotherapy nursing technicians revealed that Nursing is clearly gendered due to its history as a highly female profession. Although there has been certain movement to include men in the profession, the data from this study showed that women still predominate in the Hemotherapy treatment practice context.

A high number of women were observed among the 18 study participants, which confirms the IBGE data<sup>11</sup>. According to the Institute, the Brazilian population is predominantly made up of women and data from the Federal Nursing Council show that Nursing teams continue to be predominantly female in numbers. In other words, with 84.6% women, this fact confirms the information above, leaving only 15.4% men<sup>12</sup>.

Considering the proxemic factors analyzed based on the theory of proxemic non-verbal communication, it is noticed that these data corroborate findings from other research studies<sup>1</sup>. Therefore, they emphasize that proxemic non-verbal communication is a Nursing tool that allows nurses to interact, build empathetic relationships and provide help<sup>3</sup>.

These findings are similar to those detected in research studies conducted with nurses at Pediatric Onco-Hematology services in southeastern Brazil. In other words, as a form of therapy, verbal and non-verbal communication include expressions and gestures and can have significant meanings for the clients, thus allowing them to better adhere to the treatments indicated<sup>13</sup>.

The highlighted proxemic element is related to the basic position of the interlocutor, as well as the gender of those who take part in the communication and its influence on people's behavior. It was confirmed that gender was one of the factors that hindered the distances chosen during the interactions<sup>1</sup>. However, no influence was observed on the part of nursing technicians in Hemotherapy since, in this service, they consider this fact related to technical and instrumental expertise. In relation to the clients' gender, there is a difference between men and women.

Data from an international comparative study between Brazilian and Cape Verdean nurses highlights that, out of 709 interactions between pregnant women and nurses, the specialists' standing posture was determined during communication with the pregnant women to perform the exams. These treatments occur in the lying position (considered normal) and the nurses remain standing<sup>7</sup>.

The sociofugal-sociopetal axis type is related to a person's angular orientation towards others, which reflects the extent of the participants' desire for more intimacy. The first phrase expresses certain disincentive to interaction, whereas the second one implies the opposite<sup>14</sup>. When analyzing the data on proxemic non-verbal communication, it was found that the interlocutor's stance is frontal, with no back positions or other angles between the research participants.

Most of the studies presented the dominant sociopetal axis in different interaction processes, with face-to-face or parallel positions<sup>15</sup>. This finding is very positive because these positions promote interaction between people and allow contact between nursing technicians and clients. In other words, they are face-to-face and sideways. Nursing technicians are therefore reluctant to speak in a more limited way due to the epidemiological situation of COVID-19.

Kinetic or kinesthetic factors analyze the movements that create proximity between interlocutors, such as physical contact, touch and the position of each person in the interaction. The third factor is also analyzed through the four interpersonal distances: intimate, personal, social and public, according to the theory of proxemic non-verbal communication<sup>1</sup>.

Studies developed in Santiago, Chile, highlight that distances occur in all interpersonal interactions and the intimate distance is between 0 and 45 cm<sup>16</sup>. Therefore, personal contact is widely used in everyday interactions, that is, contact with a maximum distance of 50 cm between people. The intimacy distance was common at other moments<sup>14,17-18</sup>, whereas it was mainly intimate in the current study. This is the closest distance defined when installing the blood component. It is also important to highlight the presence of three nursing technicians with personal distancing during Nursing care in Hemotherapy.

Kinetic factors take into account the position of the body parts. When analyzing the proximity factors in the interactions between medical professionals and emergency clients, facial expressions of happiness, seriousness, indifference and trust between people were observed<sup>2</sup>.

Proxemic contact behavior involves touch in three tactile forms: instrumental; expressive and/or affective; and therapeutic<sup>19</sup>. A study developed with physiotherapists in Campinas, São Paulo, highlighted instrumental touch as expressive touch that is not very prominent<sup>20</sup>. In proxemic non-verbal communication, related to nurses' production and developed in Brazil and Cape Verde, it was found that Brazilian nurses show lack of touch in their interactions<sup>14</sup>. Other results indicated that female newborns were more affected than male ones<sup>21</sup>. In this context, the study conducted with mothers who touched their newborns presented different types of touch: they caressed, grabbed, touched and held the child's body for long periods of time; whereas others touched different parts of the body<sup>22</sup>.

However, the results of this paper do not show significant differences in this aspect. The relevance of touch in Hemotherapy treatments is documented. Instrumental touch is also checked when installing the transfusion, when collecting a sample for the transfusion test and when checking vital signs: vision, smell and response to touch. All of this is extremely important for the clients, as



touch is considered one of the most effective tools to stimulate the bond between professionals and clients, nurses and teams<sup>23,24,25</sup>.

The “visual code” proxemic element, determined by the eye contact mode, dominates the interaction between nursing technicians and clients. The health team used instrumental touch combined with expressive touch, turning technical support into an expression of affection and human care. Some studies confirm this observation<sup>14,18,21</sup>: that nursing technicians should always be available to assist these clients, providing support, confidentiality and effective communication.

Therefore, eye contact between two people helps determine how communication takes place. Thus, the greatest information source in the interactions corresponds to the way of showing, paying attention and allowing information exchanges<sup>4</sup>.

It is important to highlight that monitoring by a nursing technician in Hemotherapy is necessary to check whether the blood components are transfused or not after installation. And, if it exceeds four hours, it will have to be discarded. This can also be explained by the professionals who try to heal with their eyes. A comparable study found a similar approach when looking at pharmacists’ dispensing. Invisible and beyond appearances, recognizing them as responsible and competent professionals to help them understand their health condition and the corresponding treatment methods<sup>26</sup>.

The “voice volume” factor refers to the interlocutors’ perception of interpersonal space. By classifying the speech volume and intensity in the interaction<sup>1</sup>, we perceive four types: low, normal, loud and none. In a study<sup>27</sup> regarding interaction in the professional-hypertensive patient relationship, the tone of voice was soft, including this, with a calm, soft, normal and peaceful voice. However, normal voice prevailed in another study<sup>28</sup>. Voice volume and intensity can be related to the communication space and to the environment.

Loud voice was highlighted to speak to clients with hearing difficulties and to approach clients in situations of disrespect towards professionals. Nevertheless, Hemotherapy clients need a normal and peaceful voice; a sensitive touch and a smile between masks to feel safe.

Another study highlighted that male physicians speak in a loud voice, as they are further away from the clients and spend more time reading medical records. On the other hand, female physicians had more satisfied clients, as they had less expansive body postures, used a softer voice and more self-touch, and conveyed a more medical atmosphere, the opposite being true for male professionals<sup>29</sup>.

The thermal code also stands out in this study<sup>7</sup> among Cape Verdean nurses, as it provides diverse information to clients regarding the location where they lived and asks questions about comfort of the environment (temperature). The nurses asked if the clients felt comfortable with the room temperature, if the place was air-conditioned and if the environment had natural light.

In this research, environmental and blood component temperature control is necessary for a good quality product that meets the health demands presented to the clients. Therefore, it was necessary to control the temperatures of the blood component, the clients and the professionals’ environment and how they perceived temperature when installing the transfusions<sup>6</sup>.

In the hospital complexity context, the “olfactory code” proxemic factor is unveiled and points out personal signs in the experiences underwent by the group under study during in-hospital transfusion care. It was observed that all nursing technicians wore masks, but the team valued the sense of smell, as it stood out as a tool for dialogue in the Nursing care we provide.

Nursing care for people undergoing Hemotherapy treatment is full of odors that, in one way or another, are significant and cause reactions of varying intensity. Nursing technicians reported that, at the time of installing the blood component, the sector’s Nursing team is oftentimes providing Nursing care for sickle-cell ulcer lesions. Thus, when they return home, the olfactory sense experienced in the Hemotherapy hospital environment predominates.

Stimulating the sense of smell can create residual memories. Thus, memories can work as factors that were previously unknown to us, the nursing technicians participating in this study. They emphasize that they oftentimes return home smelling like the client they have served. Therefore, the symbolic odors that pollute and create images which are shaped in the human imagination should expand their relational, visual, expressive, emotional, dialogical and analytical capabilities to support comprehensive care behaviors of the people cared for<sup>30</sup>.

As a study limitation, it is noted that it was carried out in a single Blood Center located in southeastern Brazil, where it pointed out peculiar issues in this scenario without generalizing its findings. Therefore, regarding the theme of proxemic non-verbal communication in Hemotherapy, it is suggested to carry out other studies in other Blood Centers and Blood Hubs presenting other contexts and scenarios.

Despite this, the intention is to contribute to a fruitful discussion about proxemic non-verbal communication in the Hemotherapy context. This does not mean that it should be unilateral; rather than that, with a reflection in relation to the actions and competencies of nursing technicians in Hemotherapy and other health professionals.

## CONCLUSION

The proxemic factors identified in the research highlighted the importance of looks, distances, proximity and movement of behaviors. Additionally, the presence of instrumental touch was observed as a form of humanized care, preserving a satisfactory intimate and/or social distance. All nursing technicians on the team were attentive to the clients' body, facial, vocal and sound signs and expressions during the interactions.

Body posture during the observations, such as standing, sideways or in front of the clients, was interpreted in the same way as the changes in tone of voice were perceived. Non-verbal signs through masks showed insecurities and uncertainties about how they would maintain care in the face of the pandemic situation established when the research was carried out.

Therefore, proxemic non-verbal communication allows nursing technicians to expand the way of providing care. In the hospital environment and in the blood therapy context, this represents broadening of the perspective beyond the clients' biology, but also beyond a bag of blood components. Thus, effective verbal and non-verbal communication represents the key to the relationship between professionals-caregivers and clients in different contexts, in hospital units.

## REFERENCES

1. Hall ET. *A dimensão oculta*. São Paulo, SP(BR): Martins Fontes; 2005.
2. Azevedo AL, Carvalho STA, Pessoa Júnior JM, Silva J, Santos BTU, Bastos SSF. Communication of nursing students in listening to patients in a psychiatric hospital. *Esc Anna Nery* [Internet]. 2017 [cited 2022 Oct 10];21(3):e20160325. Available from: <https://doi.org/10.1590/2177-9465-EAN-2016-0325>
3. Farsani D, Rodrigues J. Proxemic and nonverbal communication in classroom interaction. *Psicol Esc Educ* [Internet]. 2021 [cited 2023 Oct 31];25:e229866. Available from: <https://doi.org/10.1590/2175-35392021229866>
4. Lacerda JFE, Santos PSP, Maia ER, Oliveira DR, Viana MCA, Cavalcante EGR. Effective communication in the nurse-patient relationship in the light of Transcultural Interprofessional Practice model. *Rev Rene* [Internet]. 2021 [cited 2022 Oct 15];22:e61443. Available from: <https://doi.org/10.15253/2175-6783.20212261443>

5. Polack L. Nonverbal Communication. In: Polack L. Communicating effectively in the workforce [Internet]. USA: Wiley; 2020 [cited 2023 Oct 31]. Chapter 3. Available from: <https://doi.org/10.1002/9781119746225.ch3>
6. Moreira AG, Azevedo AL, Figueiredo NM, Oliveira LP, Araújo ST. Proxemic behavior of nursing in the hemodialysis setting. *Acta Paul Enferm* [Internet]. 2017 [cited 2022 Oct 10];30(4):343-9. Available from: <https://doi.org/10.1590/1982-0194201700051>
7. Beserra GL, Oliveira PMP, Pagliuca LMF, Almeida PC, Anjos SJSB, Pinheiro AKB. Non-verbal nurse parturient communication in labor in Portuguese-speaking countries. *Rev Lat Am Enfermagem* [Internet]. 2019 [cited 2022 Oct 20];27:e3193. Available from: <https://doi.org/10.1590/1518-8345.3032.3193>
8. Valadares ES, Catani RR, Lacombe JB, Mendonça TM S, Silva CHM, Paro HBMS. Boosting nonverbal physician-patient communication in medical education. *Rev Bras Educ Med* [Internet]. 2021 [cited 2023 May 10];45(2):e085. Available from: <https://doi.org/10.1590/1981-5271v45.2-20200327.ING>
9. Bardin L. *Análise de conteúdo*. Lisboa (PT): Edições 70; 2021.
10. Souza VR dos S, Marziale MHP, Silva GTR, Nascimento PL. Tradução e validação para a língua portuguesa e avaliação do guia COREQ. *Acta Paul Enferm* [Internet]. 2021 [cited 2023 Jun 11];34:eAPE02631. Available from: <https://doi.org/10.37689/acta-ape/2021AO02631>
11. Instituto Brasileiro de Geografia e Estatística (BR). Síntese de indicadores sociais: uma análise das condições de vida da população brasileira: 2019 [Internet]. Rio de Janeiro, RJ(BR): IBGE; 2019 [cited 2023 Jun 11]. 134 p. Available from: <https://biblioteca.ibge.gov.br/visualizacao/livros/liv101678.pdf>
12. World Health Organization. State of the world's nursing 2020: Investing in education, jobs and leadership. Geneva (CH): World Health Organization; 2020 [cited 2022 Jul 22]. Available from: <https://www.who.int/publications/i/item/nursing-report-2020>
13. Montovanelli JEB, Araújo AB, Bittencourt EFS, Pinto HCL, Marins VSR, Rodrigues LTC, et al. Câncer Infantil/Pediátrico: cuidados de enfermagem em oncopediatria com foco central na humanização. *J Inter Pesq Ciênc Eng Avançada* [Internet]. 2023 [cited 2022 Nov 4];10(4):85-96. Available from: <https://doi.org/10.22161/ijaers.104.10>
14. Sancino A, Bicochi N, Bernardo GA, Percin C, Gesto C, Maragliano A, et al. Proxemic behaviors during gay/straight interactions: An automated analysis through kinect depth-sensing camera. *J Pesq Sex* [Internet]. 2023 [cited 2022 Nov 10];1-13. Available from: <https://doi.org/10.1080/00224499.2023.219269>
15. Ghaemi Z, Engelke U, Jeny BEB. Mapas proxêmicos para visualização imersiva. *Rev Bras Cartogr (Online)* [Internet]. 2022 [cited 2022 Nov 3];49(3):205-19. Available from: <https://doi.org/10.1080/1523040.2021.201394>
16. Farsani D, Breda A, Alizadeh M, Zakariya YF. Unpacking the black-box of students' visual attention in mathematics and English classrooms: Empirical evidence using mini-video recording gadgets. *J Comput Assist Learn* [Internet]. 2021 [cited 2022 Nov 5];37(3):773-81. Available from: <https://doi.org/10.1111/jcal.12522>
17. Beserra GL, Oliveira PMP, Pagliuca LMF, Almeida PC, Anjos SJSB, Barbosa AS. Verbal communication of the parturient nurse's dyad in the active phase of labor. *Rev Bras Enferm* [Internet]. 2020 [cited 2022 Nov 12];73(5):e20190266. Available from: <https://doi.org/10.1590/0034-7167-2019-0266>.
18. Silva TASM, Coelho MJ, Figueiredo NMA. Semiologia das expressões corporais dos enfermeiros no cotidiano do serviço de emergência. *Rev Enferm UFSM* [Internet]. 2019 [cited 2022 Jun 15];9:e38:1-19. Available from: <https://doi.org/10.5902/2179769229882>

19. Mendes AM, Brás SC, Marques RM, Pontífice-Sousa P. Toque terapêutico no cuidado da enfermagem: uma análise conceitual. *Acta Paul Enferm* [Internet]. 2022 [cited 2022 Nov 10];35:eAPE00706. Available from: <https://doi.org/10.37689/acta-ape/2022AR007066>
20. Jamarim MFM, Silva CZ, Lima GMPA, Siqueira CL, Campos CJG. Nonverbal communication through touch: Meanings for physical therapists working in a hospital environment. *Aquichan* [Internet]. 2019 [cited 2022 Jun 19];19(4):e1942. Available from: <https://doi.org/10.5294/aqui.2019.19.4.2>
21. Vasconcelos SG, Paiva SS, Galvão MTG. Comunicação Proxêmica entre mãe e filho em Alojamento Conjunto. *Rev Enferm UERJ* [Internet]. 2006 [cited 2022 Sep 10];14(1):37-42. Available from: <http://www.revenf.bvs.br/pdf/reuerj/v14n1/v14n1a06.pdf>
22. Farias LM, Cardoso MVLM, Silveira IP, Fernandes AFC. Comunicação proxêmica entre mãe e recém-nascido de risco na unidade neonatal. *Rev Rene* [Internet]. 2009 [cited 2022 Sep 14];10(2):52-7. Available from: <http://periodicos.ufc.br/rene/article/view/4768>
23. Silveira ACDA, Santos IMS, Costa PCF, Braga MNS, Borges TS, Costa AG. Sistematização da Assistência de Enfermagem segundo o conhecimento de enfermeiros do ambulatório de um hemocentro. *Rev Enferm UFSM* [Internet]. 2021 [cited 2023 Nov 5];2(11):e69. Available from: <https://doi.org/10.5902/2179769264111>
24. Al-Shamaly HS. Patterns of communicating care and caring in the intensive care unit. *Nurs Open* [Internet]. 2022 [cited 2023 Nov 4];9(1):277-98. Available from: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8685886/pdf/NOP2-9-277.pdf>
25. Pacheco AMS, Beserra JMA, Rodrigues MP, Mota LR, Menezes Neto CM, Lima CG, et al. A comunicação interpessoal como ferramenta eficaz da equipe multiprofissional na promoção do bem-estar em um ambiente hospitalar. *Braz J Implantol Health Sci* [Internet]. 2023 [cited 2023 Nov 5];5(4):402-15. Available from: <https://doi.org/10.36557/2674-8169.2023v5n4p402-415>
26. Santos MM, Souza VS, Almeida RGS, Wegner W, Figueira MCS, Machado CFT. Pediatric patient safety in the administration of blood components. *Texto Contexto Enferm* [Internet]. 2023 [cited 2023 Nov 5];32:e20220234. Available from: <https://doi.org/10.1590/1980-265X-TCE-2022-0234en>
27. Torres GMC, Figueiredo IDT, Cândido JAB, Pinto AGA. Comunicação não-verbal no cuidado com usuários hipertensos na Estratégia Saúde da Família. *REFACS* [Internet]. 2019 [cited 2022 Sep 17];7(3):284-95. Available from: <https://doi.org/10.18554/refacs.v7i3.3570>
28. Silva MJP. Comunicação tem remédio: a comunicação nas relações interpessoais em saúde. 10th ed. São Paulo, SP(BR): Gente; 2017.
29. Mast MS, Kadji KK. How female and male physicians' communication is perceived differently. *Patient Educ Couns* [Internet]. 2018 [cited 2023 Jan 10];101(9):1697-701. Available from: <https://doi.org/10.1016/j.pec.2018.06.003>
30. Meska MHG, Mano LY, Silva JP, Pereira Junior GA, Mazzo A. Emotional recognition for simulated clinical environment using unpleasant odors: quasi-experimental study. *Rev Lat Am Enfermagem* [Internet]. 2020 [cited 2023 Jan 10];28:e3248. Available from: <https://doi.org/10.1590/1518-8345.2883.3248>

## NOTES

### ORIGIN OF THE ARTICLE

Extracted from the thesis – Care in the sensitive and technical dimensions: Proxemic communication by Nursing teams in Hemotherapy, presented at the Graduate Program of the Anna Nery Nursing School belonging to *Universidade Federal do Rio de Janeiro*, in 2023.

### CONTRIBUTION OF AUTHORITY

Study design: Gonçalves FGA, Araújo STC.

Data collection: Gonçalves FGA, Araújo STC.

Data analysis and interpretation: Gonçalves FGA, Araújo STC.

Discussion of the results: Gonçalves FGA, Araújo STC.

Writing and/or critical review of the content: Gonçalves FGA, Carvalho STA, Azevedo AL, Ferreira PBP, Torres DG, Pérez Júnior EF, Bastos SSF, Silva SF.

Review and final approval of the final version: Gonçalves FGA, Carvalho STA, Azevedo AL, Ferreira PBP, Torres DG, Pérez Júnior EF, Bastos SSF, Silva SF.

### APPROVAL OF ETHICS COMMITTEE IN RESEARCH

Approved in the Research Ethics Committee of the Arthur Siqueira Cavalcanti Hematology State Institute – HEMORIO, under Opinion No.4,376,390 and Certificate of Presentation for Ethical Appraisal 34612420.2.3001.5267.

### CONFLICT OF INTEREST

There is no conflict of interest.

### EDITORS

Associated Editors: Melissa Orlandi Honório Locks, Maria Lígia Bellaguarda

Editor-in-chief: Elisiane Lorenzini

### TRANSLATED BY

Leonardo Parachú

### HISTORICAL

Received: August 27, 2023

Approved: November 21, 2023

### CORRESPONDING AUTHOR

Francisco Gleidson de Azevedo Gonçalves

gleydy\_fran@hotmail.com

