

# Nurses' perception of intraoperative evolution: a qualitative study

*Percepção de enfermeiros na evolução intraoperatória: um estudo qualitativo*

*Percepción de enfermeros sobre la evolución intraoperatoria: un estudio cualitativo*

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**ABSTRACT: Objective:** To know the perception of surgical center nurses about the evolution of nursing in the intraoperative period. **Method:** Exploratory study with a qualitative approach, carried out through online interviews with nurses working in a surgical center, between June and July 2021. Intentional, non-probabilistic sample consisting of 12 nurses. Data evaluated by Bardin's content analysis and MAXQDA 2020<sup>®</sup> software. **Results:** The most frequent nouns were identified in the corpus of the interviews: patient, room, time, surgery, and surgeries. Three thematic categories emerged: work overload and time availability of surgical center nurses; nurses' assistance in the intraoperative period; effects of the COVID-19 pandemic. **Conclusion:** Nurses perceive the development of intraoperative nursing as a tool that brings nurses closer to care work and qualifies perioperative practice. However, organizational weaknesses impact the dedication of these professionals in direct patient care.

**Keywords:** Surgicenters. Nursing. Intraoperative period. Nursing process. Nurses.

**RESUMO: Objetivo:** Conhecer a percepção dos enfermeiros de centro cirúrgico sobre a evolução de enfermagem do período intraoperatório. **Método:** Estudo exploratório com abordagem qualitativa, realizado por meio de entrevistas *online* com enfermeiros que trabalham em centro cirúrgico, entre junho e julho de 2021. Amostra intencional, não probabilística, constituída de 12 enfermeiras. Dados avaliados pela análise de conteúdo de Bardin e pelo *software* MAXQDA 2020<sup>®</sup>. **Resultados:** Identificaram-se as palavras da classe de substantivos de maior frequência no *corpus* das entrevistas: paciente, sala, tempo, cirurgia e cirurgias. Emergiram três categorias temáticas: sobrecarga de trabalho e disponibilidade de tempo dos enfermeiros de centro cirúrgico; atuação assistencial do enfermeiro no intraoperatório; efeitos da pandemia de COVID-19. **Conclusão:** As enfermeiras percebem a realização da evolução de enfermagem intraoperatória como uma ferramenta que aproxima o enfermeiro da atuação assistencial e qualifica a prática perioperatória. Contudo as fragilidades organizacionais impactam a dedicação desses profissionais no cuidado direto ao paciente.

**Palavras-chave:** Centros cirúrgicos. Enfermagem. Período intraoperatório. Processo de enfermagem. Enfermeiras e enfermeiros.

**RESUMEN: Objetivo:** Conocer la percepción de los enfermeros de quirófano sobre la evolución de la enfermería en el intraoperatorio. **Método:** Estudio exploratorio con enfoque cualitativo, realizado a través de entrevistas *online* con enfermeras que trabajan en un centro quirúrgico, entre junio/julio de 2021. Muestra intencional, no probabilística compuesta por 12 enfermeras. Datos evaluados a partir del análisis de contenido de Bardin y el *software* MAXQDA 2020<sup>®</sup>. **Resultados:** Se identificaron las palabras de la clase de sustantivos más frecuentes en el corpus de las entrevistas: paciente, habitación, tiempo, cirugía y cirugías. Emergieron tres categorías temáticas: sobrecarga de trabajo y disponibilidad de tiempo de los enfermeros de CQ; asistencia de enfermeras en el período intraoperatorio; y efectos de la pandemia de COVID-19. **Conclusión:** Las enfermeras perciben el desarrollo de la enfermería intraoperatoria como una herramienta que acerca al enfermero al trabajo de cuidado y cualifica la práctica perioperatoria. Sin embargo, las debilidades organizativas impactan en la dedicación de estos profesionales en la atención directa al paciente.

**Palabras clave:** Centros quirúrgicos. Enfermería. Período intraoperatorio. Proceso de enfermería. Enfermeras y enfermeros.

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Received: 06/03/2022 – Approved: 07/29/2022

<https://doi.org/10.5327/Z1414-4425202227823>

## INTRODUCTION

In the surgical center (SC), a complex and hostile environment for the patient, care is provided by an interdisciplinary team<sup>1</sup>, with the nursing team performing care that is mostly technical, scientific and objective<sup>2,3</sup>.

In this context, the tasks of perioperative nurses are care and management, which require a more humanized, systematized, individualized and documented care based on the systematization of nursing care (SNC), contributing to the organization of the service based on technical-scientific principles<sup>4,5</sup>.

The SNC of the surgical context is called systematization of perioperative nursing care (SPNC). Its implementation aims to help prepare patients and families for the anesthetic-surgical procedure; to predict, provide and control nursing care; and to minimize the risks inherent to the procedure<sup>6</sup>. In this way, it becomes possible to operationalize the nursing process (NP)<sup>7</sup>, which is divided into five interrelated stages: history, diagnosis, prescription, implementation of care, and evolution/evaluation<sup>6,7</sup>.

The object of this research was directed to one of the stages of the NP, the evolution of nursing. Private activity of nurses is a deliberate, systematic, and continuous process, aiming to verify the actions and results of care and the need for changes<sup>7</sup>. It is up to the nurse to formally record the care provided to the patient in the medical record, guaranteeing their legal ethical record of care and possible interurrences<sup>5,7</sup>.

The perioperative period includes the preoperative, transoperative/intraoperative and postoperative periods. Nurses are involved in managing the entire care process during the patients' stay in the surgical environment, from admission to their transfer to the unit<sup>6,8</sup>. During the patients' stay in the operating room (OR), in the intraoperative period, nurses must evaluate the patients, their needs, and record the assistance provided<sup>6</sup>, in a way that highlights all the behaviors performed by the nursing staff during the surgery<sup>9</sup>, based on the premise that unregistered care is care not performed.

The records in the patients' medical record are part of the communication of the care team, allowing the continuity of care and the legal documentation of nursing actions, as a support of the nurses' work. In the case of the intraoperative period, it promotes a better understanding of the patients' needs for postoperative recovery<sup>9</sup>. Therefore, the improvement of effective communication is the second international goal for patient safety<sup>10</sup>.

This study is considered as part of a larger project that identified the need to reorganize the NP in the researched institution and defined the implementation of the evolution of intraoperative nursing from November 2019. In this context, the following research question emerged: which is the perception of care nurses who work in SC on the evolution of nursing in the intraoperative period?

## OBJECTIVE

To know the perception of SC nurses about the evolution of nursing in the intraoperative period.

## METHOD

Exploratory study with a qualitative approach. The checklist for qualitative research, the Consolidated criteria for reporting qualitative research (COREQ) was used.

The research was carried out in four SC, located in three hospitals of a complex in Porto Alegre, Rio Grande do Sul (RS). For characterization purposes, the hospital coded as A is distinguished by the care provided to adults in the clinical, surgical, and maternal-infant areas. It has the largest SC in the complex, with 13 ORs and direct patient care by 12 nurses. Hospital B specializes in oncology and has a SC with seven ORs and nine care nurses. Hospital C is an international reference for organ and tissue transplantation, with two SCs — the outpatient clinic with eight ORs and the transplant center with four ORs — with 12 care nurses working for both SCs.

The selection occurred intentionally, as indicated by the sector supervisor, with one nurse working in the morning, one in the afternoon and two in the evening, totaling 12 nurses initially indicated. Given the refusal and lack of return of contact via e-mail, nine additional participants were invited, totaling 21 invited nurses. The total number of respondents was set according to data saturation.

Inclusion criteria were: nurses with direct intraoperative care to surgical patients in selected SCs and working for more than six months. Nurses on vacation, on leave or on work leave were excluded.

Data collection was carried out through interviews, conducted by one of the authors of this study, who was blind to the participants and the context. The meetings took place between June and July 2021, and the first interview was initially carried out as a pilot test. Google Meet<sup>®</sup> was used, allowing

the recording of video calls with an average duration of 20 minutes, with subsequent transcription by the researcher.

A semi-structured script divided into two sections was used. The first part traced the profile of the participants: age, work shift, workload, time working in SC and maximum academic degree. The second section included open questions, in order to meet the research objective, namely: "What is your perception of the evolution of intraoperative nursing?"; "The institution is investing in the implementation of the SPNC, and, thus, the stages of the NP are being implemented. What did you expect from the evolution of intraoperative nursing?"; "How do you evaluate the way the intraoperative nursing evolution is being carried out?"; "Point out the favorable points of evolution and what improvements are needed."; "How has this intraoperative registration process been developed during the COVID-19 pandemic period?".

Bardin's content analysis was used, following the three phases: pre-analysis, material exploration and treatment of results<sup>11</sup>. The MAXQDA 2020<sup>®</sup> software was applied, which allows the merging of qualitative and quantitative analyses, with the possibility of verifying the frequencies of words and registration units<sup>12</sup>.

This study was approved by the Research Ethics Committee of the proposing institution, under opinion number 2,324,257 of October 10, 2017. The free and informed consent form was applied. In order to guarantee the confidentiality of the nurses' identity, the letter E followed by Arabic numerals, defined randomly, were used as codenames.

## RESULTS

The profile of the 12 participating nurses was: females; aged between 26 and 51 years, with an average of 36.3 years; time working in SCs between one year and seven months and 15 years; one with a degree, ten with a specialization and one with a master's degree as the highest academic degree. As for professional activities: two work in the morning shift, three in the afternoon and seven in the evening; weekly workload with six of 36 hours, three of 40 hours, and three of 44 hours.

In the pre-analysis, the most frequent words were identified in the corpus of the interviews, of which the five most frequent nouns were: patient, room, time, surgery, and surgeries.

Subsequently, by coding the recording units and categorizing the elements, three thematic categories emerged, namely: work overload and time availability of SC nurses; nurses' assistance in the intraoperative period; and effects of the COVID-19 pandemic (Chart 1).

### Workload and time availability of surgical center nurses

The third most mentioned noun by the participants during the interviews was time. The nurses reported that the work in the SC is characterized by the lack of time for the performance of the nurse's duties in an adequate and complete way, such as the process of recording the evolution of nursing in the intraoperative period.

*As we don't have much time, it's something done in the routine, like, fast. [...] we unfortunately don't have the time to give everything that we could give as a nurse. (N1)*

*What is written there [in the evolution of the intraoperative period] is relevant, to be asked, to be evaluated, but the actual time, our reality, does not match [...], you don't have that time, and we are charged for that. (N9)*

The interviewees considered that the work overload in the SC is related to the high demand for bureaucratic and administrative activities under the responsibility of nurses, involved in multiple simultaneous tasks.

*The nurse is very administrative, so we end up making a scale, it's on paper, it's looking at the map from the other day. (N3)*

*We have a lot of administrative services, many activities and a lot of bureaucracy in the surgical center that we end up getting involved in. (N7)*

The dimensioning of nurses in the SC was also listed as a contributing factor to the impossibility of dedication in a satisfactory way in the evaluation of the patient and the

**Chart 1.** Thematic categorization of the contents of the interviews and frequency of registration units.

Category	Registration units (n)
Workload and time availability of surgical center nurses	179
Nurses' care performance in the intraoperative period	129
Effects of the COVID-19 pandemic	53

evolution of nursing. The high number of surgeries and OR, given the low number of nurses, was seen as an obstacle.

*[...] there's no way the nurse can be in eight rooms. (N3)*

*The biggest barrier we have is the number of nurses. [...] what we have difficulty with sometimes is the number of surgeries and the number of personnel. (N5)*

*[...] a lot of rooms for few nurses, a lot of surgeries together at the same time, you can't be in all the surgeries. (N10)*

In this scenario, the intraoperative record model made available by the institution consists of a sign-up form, which, when completed, enters the patients' medical records as a nursing evolution. This format was perceived by nurses as practical and essential, given the workload and the little time available for typing and description. However, it is also reported that this form may not cover all important aspects for registration.

*In the time we have, it's important that it's a checklist. (N1)*

*The block is too fast and too dynamic for you to stop and make a description. (N2)*

*It makes our lives a lot easier, just checking a box like this, it's very basic, I think we can be brief. (N6)*

*[...] it needs to be succinct, fast and objective as it is, because we are not able to register. (N11)*

Thus, the implementation of intraoperative nursing evolution was evaluated by nurses as not totally practicable and adequate, which can be a source of frustration, given the reality of work with obstacles that make it difficult for nurses to be present in the OR and in direct contact with surgical patients.

*We do what we can in the time we can. (N1)*

*This is one of the things that, for me, is a little frustrating, you know, you can't keep up with the whole operation or manage to be more present than we are. (N7)*

*I evaluate it as not ideal, but the real is the way we can do it. (N8)*

## Nurses' care performance in the intraoperative period

Another four words most mentioned by the participants were patient, room, surgery, and surgeries. Despite the difficulties, care nurses considered their presence in the OR in the intraoperative period important, as a member of the surgical team. The evolution of the intraoperative period was reported as a favorable tool for bringing this professional closer to patients and staff during surgeries, which was recognized for encouraging nursing care in the SC.

*I think it's very important [evolution] because then it ends up kind of forcing us to enter the room [...] we end up going in, seeing more of things, participating more in the surgeries. (N3)*

*This record came so that we can have more knowledge of what is happening inside the room, the condition that the patient is in during the surgery. (N5)*

*[...] it is a way for us to present ourselves as a participant in the surgical process. (N8)*

*With the registration, we need to spend more time in the room. (N11)*

The presence of nurses in OR care was considered beneficial for patient safety, once that, when approaching the team and the surgical patient, professionals can better observe routines and procedures, as well as have more knowledge about both patient information and the surgery.

*It is very important both intraoperatively and postoperatively, for patient safety. (N6)*

*[...] see if the team is following the routines, that is concurrent cleaning, you enter the room, see if the employee is really cleaning, if everyone is wearing the correct attire [...] see if they really are doing the correct surgical antisepsis. (N7)*

*[...] this is safer for them [patients] in surgery, when once again we are asking for data, being inside the room talking about the surgery, about the patients' name, about the exact location, about the position. (N9)*

Before the implementation of intraoperative nursing evolution, nurses did not record their care performance during surgery. Thus, nurses considered that nursing evolution provides this record of care, enabling documentation to support nursing.

*I think this evolution was very important, to document it, because, in the operating room, until then we had never documented anything intraoperatively. (N7)*

*I think it's very valid because we can register there what happens during the surgery [...] a support for the block, for the nurse of the block, of how that patient was, of how he ended the surgery, for us to have recorded all this. (N9)*

In this sense, they reported that this process facilitates the interpersonal communication of health professionals, in relation to the transition of care and recovery of the patient in the postoperative period.

*It even helps other nurses to visualize what is happening inside the room [...], I find this very interesting, that, when I passed the patient, the nurse there already knew everything because the registration had already been done. (N3)*

*[...] even for the colleague who comes in the postoperative period to see what happened intraoperatively. (N6)*

*I think it is of great importance even for the postoperative period, for those who are going to receive the patient in the inpatient unit. (N11)*

## Effects of the COVID-19 pandemic

The most critical periods experienced with the COVID-19 pandemic were reported by nurses as moments of changes and adaptations, with the closing of SCs to open intensive care units (ICU). The number of surgeries was also reduced due to the suspension of procedures, and, in this context, intraoperative recording was not performed normally.

*[the operating room] closed for a while, we were redirected to ICU and emergency. (N1)*

*The block that was left open had to attend to everyone, so it broke the routine, it broke this part of the*

*intraoperative period, which we lost a little bit [...], the intraoperative records were not made as often, I believe we are getting back to our normal rhythm just now. (N2)*

In addition, nurses reported that the nursing team experienced professional leave and leave, as well as transfers of colleagues to other sectors more affected by the pandemic, an aspect that also contributed to the change in the intraoperative registration process.

*Almost half of the team was moved to the ICU to take care of patients with COVID, so, while the number of surgeries decreased, the number of nursing also decreased. (N5)*

*We are not many [nurses] and we became even fewer [...], I was alone the whole night, so it was difficult, there was no way I could handle it, which was bad, it got worse. And I was divided between the block and the recovery room, so there was no way I could do the SNC. (N8)*

## DISCUSSION

The work in the SC was associated with dynamism and the multiplicity of tasks performed by nurses, identifying the lack of time to perform all the required activities as a major obstacle to care performance, especially for the implementation of the SAEP. A study carried out in Greece explored the nurses' perception about the implementation of nursing diagnoses in SC, highlighting the work routines and the limited time of professionals as contrary factors for the implementation of a new process<sup>13</sup>. In addition, this lack of time contributes to the fact that the reorganization of services, with adequate working conditions, is not an institutional priority<sup>14</sup>.

Regarding the profile of the sample, it was found that the majority of participants had a *lato sensu* postgraduate degree in their area of expertise. Nurses specializing in SC have specific skills for assistance in the perioperative period, configuring essential aspects for quality and safe care, being able to understand and manage the needs of surgical patients<sup>15</sup>.

Regarding work overload, administrative activities concomitant with care management proved to be an evident challenge in daily practice for nurses working in the SC, since they are responsible for managing the service. In line with these findings, a study reinforced the perioperative nurse's duality between the processes of care and administration,



in which the predominance of bureaucratic activities stands out, as the provision of care is directed to other members of the nursing team<sup>16</sup>.

In parallel, the scarcity of nurses reported by participants makes it difficult for this professional to approach direct care, in which the number is directly related to the ability of the nursing team to provide care and perform NP satisfactorily. A North American study describes that nurses reported less omission of perioperative care when they worked in places with less than six ORs and when they perceived their team as adequate<sup>17</sup>.

In Brazil, the dimensioning of nursing staff must meet the parameters established in the Resolution by the Federal Nursing Council (*Conselho Federal de Enfermagem* – COFEN) No. 543 of 2017, considering the specifics of SCs and the correct methods for planning and managing people<sup>18</sup>. The intrinsic and specific characteristics of this scenario should consider the demand for hiring exclusively care nurses, who differ from nurses with competing administrative duties<sup>19</sup>.

It is observed that the accomplishment of the evolution of intraoperative nursing permeates organizational factors that give rise to intense concern with the available time and with the management of concomitant activities. The intraoperative recording process does not constitute a priority in the work of nurses, who substantially assign the perioperative documentation to the team of surgeons and the anesthesiologist. Accordingly, organizational pressure and circumstances to reduce time were found in a study that addressed the factors that interfere with perioperative nursing documentation, noting the incompleteness and low quality of records resulting from these scenarios<sup>20</sup>.

When nursing evolution is carried out, nurses understand that this stage of the NP tends to be incomplete and imprecise, in order to meet the demands of the work process. A study analyzed the nursing records in the perioperative period, identifying in the intraoperative evolution attributions documented less frequently in patients' charts, for example, in relation to the surgical positioning and the location of the electrocautery plate, reaching only 47.06% in the total of procedures as fully hit on record<sup>9</sup>.

This impossibility of fully performing nursing care and recording the evolution of the intraoperative period was evidenced in this study as a reason for frustration with the nurses' desire to qualify perioperative nursing care. Another study identified that these dissatisfactions with work are perceived by nursing professionals as harmful to the biopsychosocial conditions of workers, unfavorable to the quality and safety of the service provided in the SC<sup>21</sup>.

On the other hand, the implementation of one of the stages of the NP is part of this scenario as a facilitator, bringing nurses closer to care practice. With emphasis on the evolution of intraoperative nursing, this record requires nurses to have a close relationship with the surgical team and with patients, qualifying care by promoting nurses as a member of the multidisciplinary team and an active participant in the direct care of surgical patients<sup>22</sup>. Another research, which evaluated the perception of the nursing team about SPNC, observed that professionals perceive it as a tool that organizes work and promotes nursing care. Consequently, it collaborates in care planning and brings positive results to the patients' surgical experience<sup>23</sup>.

The attention offered by the nurse in the intraoperative period is irreplaceable in terms of patient safety, as it has essential knowledge to promote safe surgery<sup>15</sup>. Chinese research on the concept of modern nursing, translated as detailed nursing, considers patients and their interests as the center of care. This perspective of individualized care, when measured in terms of safety, proved to be significantly beneficial in reducing surgical complications, in which the quality of nursing work in OR influences the success of interventions<sup>24</sup>. These investigations corroborate the need to value care nurses under feasible circumstances to participate in the intraoperative period.

Another aspect to be considered is related to the interpersonal communication promoted by the realization of intraoperative records. Documentation in medical records establishes a communicative process between members of the health team, associated with the promotion of safe care, which is listed among the six international goals for patient safety in improving effective communication<sup>10</sup>.

An Indian study identified that the use of electronic nursing documentation contributes to quality and facilitates access to information about patients' health conditions, helping to make assertive and safe decision-making. Thus, errors during care are largely perpetuated and related to the lack of adequate communication, which require special attention in terms of incentive strategies and the execution of nursing records<sup>25</sup>.

Therefore, this research emphasizes the importance of the participatory nurse during the anesthetic-surgical procedure, who provides nursing care and records their activities, favoring the quality of perioperative care and evidencing the potential of these professionals to work. However, it is still necessary to deepen discussions and claims about the particularities and initiatives for the effective role of the perioperative nurse<sup>26</sup>.

In addition, this study, carried out during the COVID-19 pandemic period, was influenced by organizational changes in the SC, resulting from the health crisis faced in the health system. In this sense, the weaknesses that were previously established in the SC were markedly perceived. The experience report addressed the challenges of nurses in the SC in the face of COVID-19, such as the closure of ORs for the care of critically ill patients with COVID-19 and the insufficient allocation of human resources, which are close to the perception of the nurses in this research<sup>27</sup>.

Although the results of this study are similar to the current literature under discussion, it is considered a limitation that it is a research with a unique group of nurses, which makes it impossible to extrapolate the findings to different contexts, being limited to a specific location of representation.

It is believed that this study can contribute to the reflection on the work process of SC nurses, making evident the demand for appreciation and recognition of these professionals in the promotion of quality and safety in the intraoperative, close to the patient and the surgical team. It also proposes to highlight the need for institutional incentives for the execution of records for effective nursing documentation and interpersonal communication. And, finally, it aims to collaborate in stimulating organizational changes in people management and in the implementation of processes in this scenario.

## CONCLUSION

Nurses perceive the evolution of intraoperative nursing as a tool that brings professionals closer to the direct care of the surgical patient and, thus, as a strategy that qualifies perioperative care. In addition, based on this record, documentation is established that promotes and values care work in this scenario. Effective communication relates to

this process as a precise and correct flow of information about the situation of each patient, strengthening decision-making focused on safety.

However, organizational factors influence the performance of work routines and tend to hinder the performance of intraoperative care by nurses and, consequently, the complete and accurate performance of records, which becomes disadvantaged in the face of multiple competing administrative demands.

It is also considered that this study is limited to the specific context researched; therefore, the data should not be generalized.

## FUNDING

None.

## CONFLICT OF INTERESTS

The authors declare there is no conflict of interests.

## AUTHORS' CONTRIBUTION

**BRA:** Project administration, Formal analysis, Conceptualization, Data curation, Investigation, Methodology, Writing — original draft, Writing — review & editing. **MTJ:** Formal analysis, Conceptualization, Methodology, Writing — original draft, Writing — review & editing. **CDC:** Formal analysis, Conceptualization, Methodology, Writing — original draft, Writing — review & editing. **RMS:** Formal analysis, Conceptualization, Methodology, Writing — review & editing, Supervision. **RCAC:** Formal analysis, Conceptualization, Methodology, Writing — review & editing, Supervision.

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