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Transforming the identities of perioperative nurses during COVID-19: A grounded theory approach

Abstract

Introduction: There is a need for a policy about endemic diseases and pandemics to increase the safety of healthcare professionals, especially nursing personnel. Studies on the impact of the COVID-19 pandemic on perioperative nurses' work processes are scarce.

Aim: The objectives of this study were to understand the work experience of Brazilian perioperative nurses at the beginning of the COVID-19 pandemic and to develop a theoretical model that represents this process.

Method: This is qualitative research with theoretical saturation achieved through the analysis of the 19th interview with nurses who had experienced the phenomenon under study. The interviews were recorded using a conferencing system and then transcribed in full, after which they were analysed according to grounded theory.

Results: Three subprocesses emerged from this analysis: the COVID-19 pandemic left nurses in unprepared surgical settings feeling less confident, nurses were protagonists of transformational leadership in the work process and in shaping their professional identity, nurses reflected on the impact of COVID-19 on their work process and professional identity while the pandemic continued. From the realignment of the components of these subprocesses, it was possible to abstract the core category (process), entitled 'from fragility to transitional overcoming of epic protagonism of perioperative nurses during the COVID-19 pandemic: transformational leadership as an intervening component for professional identity'.

Conclusion: The discovered theoretical model posits transformational leadership as a potential tool for reconstructing nurses' professional identities. Finally, this research recommends the formulation of a global policy to support systematic, active and continuous organisational programs for the management of future epidemics and pandemics.

Keywords: perioperative nursing, surgi-centres, leadership and governance capacity, COVID-19, pandemics, grounded theory

Introduction

In Brazil, the media provided extensive coverage of the rapid spread of the new coronavirus disease (COVID-19), initially in European countries, such as Italy, where it proved to be particularly virulent. The dissemination of information signalled the emergence of an infectious and contagious disease which was, therefore, poorly understood in terms of management[1]. Information on the high transmissibility of the virus and its consequences was updated regularly. Health services were overloaded, there was a significant increase in contamination and deaths among the general population and health professionals[2–4].

On 26 February 2020, the World Health Organization (WHO) declared a public health emergency of international concern. Less than a month later, Brazil recorded its first case of COVID-19 in the state of São Paulo. A month later, the 27 federal units of the country registered the disease, despite the postponement of preventive measures for almost a month after the initial case[5].

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The lack of information and human, material and structural resources and the resulting lack of preparedness exposed health professionals to the COVID-19 pandemic in a manner that was unprecedented in the Americas. On 29 September 2020, the Pan American Health Organisation (PAHO) and the WHO counted the largest number of infected professionals in the world in the Americas, approximately 570 000, with 2500 deaths from the disease. Brazil represented almost 54 per cent of those infected, totalling 307 000, with nursing professionals being the most affected. The WHO recorded 2500 deaths of healthcare professionals in the continent, of which 289 (11.6 per cent) occurred in Brazil[6].

The ongoing global health crisis, caused by the new coronavirus, can be considered a tragedy foretold. Since 2019, the WHO has highlighted pandemics as one of the ten greatest threats to global health[7]. In addition to a review study published on successive pandemics before the current outbreak, another review study addressed their psychological and occupational impacts on health professionals, indicating that the warfare setting established by such events in recent times has increased the vulnerability of health professionals placed on the front line. The analysis of the study data revealed that most of those professionals experienced feelings of helplessness and powerlessness due to their lack of control over environmental phenomena perceived as devastating. Consequently, professionals felt weakened by the inevitability of the risks and threats to their own integrity and, therefore, saw no sense in their professional practice. This cognitive process was associated with depressive symptoms[8].

Surgery was one of the healthcare scenarios that required the reorganisation of work processes. Elective surgeries were suspended to ensure beds and reserve human resources to care for patients affected by COVID-19. In the context of the suspension of elective surgeries, the emergency and intensive care units remained operational[4]. This situation was reported in Brazil and other countries[4,9–11]. Unlike elective procedures, emergency surgeries were not postponed and patients with COVID-19 were admitted to surgery[4,9–12].

The context required that perioperative nurses assume leadership roles in their teams, facilitating adaptation to rapid and frequent changes[13,14]. However, many of these professionals experienced negative feelings when they did not receive the necessary support from their institutions. This was particularly evident in other countries, where nurses reported negative physical and psychological effects during the COVID-19 pandemic which directly affected patient care[15–17]. In contrast, the media elevated nurses from supporting roles to central figures during the COVID-19 pandemic, portraying them as heroic figures on the front line, striving to organise the chaos that had occurred[18].

In view of the paucity of research into the impact of the pandemic on perioperative nurses' work processes and the threat the pandemic posed to global health[4,13,19], the authors of this study believe that the experiences of successive pandemics are sufficient to signal the need for a policy to deal with endemics and pandemics, providing information and material and human resources, as a strategy to improve safety for health professionals, with particular emphasis on the nursing team. The intention is to reduce suffering and mortality rates in future endemics and pandemics. To this end, this study considers it relevant to answer the research question: How was the interactional experience of Brazilian perioperative nurses configured during the initial phase of the COVID-19 pandemic?

In the face of that question, the objectives of this study were to understand the work experience of Brazilian perioperative nurses at the beginning of the COVID-19 pandemic and to develop a theoretical model that represents this process.

This theoretical model is expected to facilitate the development of reflections among professional bodies within the health sector, such as nursing associations. Those reflections could lead to the formation of arguments in support of a permanent global policy for the prevention and control of infectious diseases, such as those currently in place to address climate change and its associated risks.

Materials and methods

This is a qualitative study using grounded theory following the Straussian approach[20] and symbolic interactionism[21] as the methodological and theoretical frameworks, respectively. The study also adhered to the Consolidated Criteria for Reporting Qualitative Research (COREQ)[22].

Qualitative research is a form of social investigation that portrays the meaning people make of their experiences and the world in which they live. Its purpose is to understand, describe and interpret social phenomena as perceived by individuals, groups and cultures. Researchers use qualitative approaches to explore people's behaviours, feelings and experiences and discover the core of their lives. Those who employ grounded theory to investigate social processes and interactions[23] can examine phenomena such as the complex and challenging experiences of perioperative nurses during a pandemic.

Following the approval of the project by the Research Ethics Committee (CAAE 08443018.2.0000.5411, Report no. 3.198.892), an email invitation was sent to 80 working perioperative nurses, according to the authors' previous research database. In that invitation, the nurse was informed of the researchers' identities and credentials, the research objectives and goals and the voluntary nature of participation. Furthermore, it was made clear to participants that their participation was entirely optional and that if they consented to it, one of the researchers would contact them to arrange an interview through Google Meet.

The research involved participants who had worked as perioperative nurses for more than one year when faced with the experience of managing and caring for patients with COVID-19 in the surgical setting.

Of the 80 individuals initially invited to participate in this study, 34 agreed to do so and were listed alphabetically by the researchers. Nurses who had expressed interest in participating were contacted by telephone to arrange an interview to ensure that their schedules coincided with the researcher's availability. Before starting the interview, nurses were required to provide their consent,

which was documented in the form of an informed consent form. They were also instructed to complete a Google form and provide their personal information, including their name, date of birth, region of residence, time spent working as a perioperative nurse, academic qualifications and the legal status of their institution. The nurses were interviewed through synchronous Google Meet and asked to describe their recent experience working in the surgical setting. The guiding question was: Can you tell me about your experience of the surgical setting work process during this pandemic?

Data were collected between 3 April and 25 June 2020, with recordings lasting between 40 and 90 minutes on the platform. Two nurses declined to participate in the investigation, mentioning time restrictions of their schedules.

The interviews were conducted by one of the researchers, a female nurse with a master's degree who had specialised in perioperative nursing for 13 years. Therefore, she had the necessary technical and scientific knowledge of medical surgical nursing care. In addition, she had undergone training and supervision in conducting in-depth interviews.

The interviews were transcribed in full, with participant names being replaced by alphanumeric codes N1, N2, N3, ... N19). Any information that could identify participants was deleted. The interviews were imported into ATLAS.ti qualitative data analysis software, version 9.0, in order to assist with data analysis organisation. During the orientation sessions, a professor with extensive experience of the grounded theory methodological framework double-checked the data, according to the following stages[20]:

- **Microanalysis:** the detailed line-by-line analysis needed to generate initial categories (with their properties and dimensions) to suggest relationships between them and to combine open and axial coding.
- **Open coding:** the process of analysing data to identify concepts and their properties and dimensions. At this stage, a large amount of coded data is reduced by naming groups of items (codes) with similar meanings, thus developing concepts. A concept is an abstract representation of an event, object, action or interaction in the data that a researcher identifies as significant. In the methodological framework used, categories are concepts derived from the data that represent phenomena. Concepts begin to form when the analyst begins the process of grouping or classifying them in more abstract terms into categories.
- **Axial coding:** the process of systematically relating categories to their subcategories according to their properties and dimensions. This stage of analysis is important for theory building.
- **Selective coding:** the process of integrating and refining the theory. Integration involves organising categories around a central concept using a combination of techniques: narrative, diagramming, classification and review notes.

As recommended in this kind of research, the data-collection and analysis stages took place simultaneously until theoretical saturation was reached; this occurred when the 19th interview was analysed. To achieve this, one of the strategies recommended by the methodological framework is used to validate the discovered model. The theoretical model is then applied to assess its ability to explain the data and then the theoretical model is returned to the participants for validation[20]. This was able to explain the interactional process experienced by perioperative nurses at the beginning of the COVID-19 pandemic.

The criteria underlying the number of interviews needed to build the theoretical model proposed by this study were in line with what grounded theory proposes. This involved data collection until data analysis indicated that all categories were saturated. This means that the following criteria were met: no new or relevant data emerged in relation to a category, the category was well developed in terms of properties and dimensions, showing variation and the relationships between the categories were well established and validated[20].

In terms of investigation rigour, the quality criteria set by Lincoln and Guba[24] were used. Credibility was achieved through in-depth interviews conducted from the perspective of the study participants. After the transcription, the participants had the opportunity to confirm the data. Reliability was achieved by ensuring that all stages of the research process were followed. To ensure transferability, the setting (location and participants) and the study method were described. Furthermore, the researchers independently analysed the interviews before agreeing on the resulting subcategories, categories, subprocess and core category. The participants also had the opportunity to validate their experiences abstracted in the theoretical model, which was previously sent to them by email and then presented in meetings scheduled by the researchers via synchronous videoconferences. It is noteworthy that 80 per cent of the participants had the opportunity to engage with this stage and all acknowledged that the theoretical model abstracted their experiences, as well as providing an opportunity to reflect on the profession, especially professional practice based on transformational leadership for the construction of the professional identity of perioperative nurses.

It is important to note that the theoretical model discovered was initially interpreted in the context of symbolic interactionism. In general, symbolic interaction is a theoretical perspective that enables an understanding of how individuals interpret objects and other people with whom they interact and how this process of interpretation leads to individual behaviour in specific situations. Concepts of symbolic interaction include symbol, self, mind, taking on the role of the other, human action and social interaction[21].

Results

Participant characteristics

Nineteen participants were involved in the study, with a gender distribution of 17 women and two men. The participants' average age was 42.5 years and their average length of employment was 16 years. Ten of the participants worked in public institutions, seven in private institutions and two in philanthropic institutions, located in cities in the northern, northwestern, southeastern and southern regions of Brazil.

Subprocess A: The COVID-19 pandemic has left nurses in unprepared surgical settings and feeling less confident

- A1: Dealing with the unknown
- A2: Perception of teams and patients exposed to COVID-19 in a surgical environment
  - A2.1: Hospitals not adopting a systemic approach to managing care
  - A2.2. Nurses facing lack of information and lack of physical and human resources every day
  - A2.3. Nurses in the surgery room now facing exposure to contaminated professionals and patients
- A3: Nurses in mental distress as the protagonists of a drama

Subprocess B: Nurses as protagonists of transformational leadership in the work process and in shaping their professional identity

- B1: Society portraying them as epic protagonists
- B2: Referring to science
- B3: Creating and reviewing protocols to ensure a safe work environment
- B4: Training their staff in the surgical unit and other units in the hospital

Subprocess C: Nurses reflecting on the impact of COVID-19 on their work process and professional identity while the pandemic continued

- C1: Pointing out negative aspects
  - C1.1: Causing dissatisfaction among nursing team members who were reassigned to other sectors due to the reduction of elective surgeries
  - C1.2: Mediating disagreements over protocols between medical teams
- C2: Considering the temporary contributions
  - C2.1: Improving the team's working conditions by reducing elective surgeries
  - C2.2: Observing the increase in worker safety
  - C2.3: Providing opportunities for structural reforms and equipment maintenance
  - C2.4: Assuming a depreciation of their professional role with the control of the pandemic

Figure 1: Subprocesses, categories and subcategories of Brazilian nurses' experience with the onset of the pandemic in 2020, with core category being 'from fragility to transitional overcoming in the epic protagonism of perioperative nurses during the COVID-19 pandemic: transformational leadership as an intervening component for professional identity'

The process experienced by perioperative nurses at the start of the COVID-19 pandemic

Data analysis based on grounded theory enabled an understanding of the perioperative nurses' interaction with the start of the COVID-19 pandemic and the establishment of theoretical relationships between the components (categories and subcategories). On that basis, we could develop the explanatory and analytical processes for the actions and interactions concerning the experience, represented by the core category.

A core category was discovered by reordering the components (categories and subcategories) using a combination of techniques, such as narrative, diagramming, classification and reviewing of the notes for the three subprocesses. The three subprocesses were:

A. The COVID-19 pandemic has left nurses in unprepared surgical settings and feeling less confident

B. Nurses as protagonists of transformational leadership in the work process and in shaping their professional identity

C. Nurses reflecting on the impact of COVID-19 on their work process and professional identity while the pandemic continues.

The core category was shown to encompass all components organised in the subprocesses, thus constituting the experience process entitled: From fragility to transitional overcoming in the epic protagonism of perioperative nurses during the COVID-19 pandemic: transformational leadership as an intervening component for professional identity. From these procedures the theoretical model that represents this experience was abstracted (see Figure 1).

Subprocess A: The COVID-19 pandemic has left nurses in unprepared surgical settings and feeling less confident

This represents the psychological burden experienced by perioperative nurses at the beginning of their work. The healthcare professional may feel surprised, unprepared or even confused when dealing with a dramatic scenario involving an emerging and unknown infectious disease. This is also true for the managers in healthcare institutions. The disease is now entering surgical scenarios under the professional's responsibility.

Subprocess A consists of three categories:

1. dealing with the unknown
2. perception of teams and patients exposed to COVID-19 in a surgical environment
3. nurses in mental distress as the protagonists of a drama.

Category A1: Dealing with the unknown

This translates the symbolic meaning attributed to caring for people with COVID-19. This can contribute to an atmosphere of organisational insecurity and make nurses feel confused about how to proceed with patients and team members who are contaminated or potentially contaminated in the surgical setting, as well as about protecting their families. The best scientific evidence for the management of an emerging infectious-contagious disease, which is highly transmissible and has uncertain development, is currently unclear. This can contribute to the feeling of not being in control of something intangible. Perioperative nurses reported:

> The current situation is challenging as we face an unknown enemy, leaving us uncertain ...
>
> N11

> Staff members struggle to adapt to daily changes and are concerned about contracting the virus and transmitting it to their families ...
>
> N12

Category A2: Perception of teams and patients exposed to COVID-19 in a surgical environment

Despite initial numbness, nurses perceived that staff and patients may be exposed to the virus in surgical settings. These risks were indicated in three subcategories:

- A2.1 Hospitals not adopting a systemic approach to care management.
- A2.2 Nurses facing a lack of information and lack of physical and human resources every day.
- A2.3 Nurses in the surgery room now facing exposure to contaminated professionals and patients.

The first threat arises from the nurse's reflection on the hospital's failure to adopt a systemic approach to care management (A2.1). The nurse considers it to be a managerial failure that jeopardises their own, their teams' and their patients' safety not to involve all hospital units, or at least those with the potential for a direct relationship with the patient, in the planning of information, material and human resources, as has happened in isolated units, such as intensive care units (ICUs). As participants said:

> ... in the ICU where patients diagnosed with COVID-19 are treated ... all the staff are properly dressed; they know what they are dealing with and how to deal with these patients ... The operating room staff does not have all personal protective equipment (PPE); we only wear an N95 mask when transporting all patients ...
>
> N13

Due to inadequate planning, nurses faced a lack of information and a lack of physical and human resources every day (A2.2). This violated the principles of standard precautions and jeopardised the safety of nurses and teams as well as patients. However, these challenges suggest that decisions had to be made in the middle of a chaotic environment. These decisions could include the development of safety protocols, negotiation with managers to ensure safety and provide the necessary supplies, such as PPE, as well as the search for people who are prepared to meet the demands of the surgical setting. Participants reported:

> We are currently experiencing a new environment that presents daily challenges in ensuring the safety of professionals and addressing patient issues.
>
> N5

> The current negotiation aims to review and improve the working conditions of nurses, focusing on safety.
>
> N18

Amid the challenges of coping with the pandemic, perioperative nurses also faced exposure to contaminated professionals and patients (A2.3). Participants said:

> Even here in [the perioperative setting], the staff have already been dismissed because they had COVID-19, but they also work in the hospitals mentioned for COVID-19 patients ...
>
> N8

> In the surgical centre, all staff were tested and two nurses were asymptomatic ...
>
> N16

Category A3: Nurses in mental distress as the protagonists of a drama

Mental distress for nurses resulted from the conflict between their experiences at work and their being symbolically acclaimed as epic protagonists on the front line of the COVID-19 pandemic battle. This could be challenging as they interacted with the narratives of society. It is important to recognise and address these challenges. In this context, nurses are seen as protagonists who lack the necessary security to fulfil their role within a society that appreciates them. They are fighting this battle amid scenarios with working conditions that inadequately safeguard their safety, as well as those of their team members and the patients for whom they are professionally responsible. This elicits fear due to awareness of threatening situations, which generates insecurities, uncertainties and feelings of being unprotected. Participants reported:

> The current work situation creates pressure and uncertainty, which affects the work process ...
>
> N6

> This is evident even in [the perioperative setting], as reported by professionals. The reduced PPE stock causes tension among all professionals ...
>
> N2

> Nursing appears to be gaining prominence on the social media and television ...
>
> N15

> However, what made nurses heroes was the fact that they had to face the improvised care during the pandemic in terms of PPE. It was humiliating! ... I realised that in precarious working conditions, nurses became heroes for something they had never considered, whether in [surgery] or any other area. They are professionals trained to be there, not heroes ...
>
> N18

Subprocess B: Nurses as protagonists of transformational leadership in the work process and in shaping their professional identity

Based on the symbolism established by the media, nurses entered the second subprocess of their experience, which is referred to as the emergence of nurses as protagonists of transformational leadership in the work process and in shaping their professional identity. This subprocess involved a series of actions, related to their professional role, aimed at re-establishing their own safety as well as that of team members and perioperative patients. It was a movement towards professional practice based on scientific evidence. The aim was to reorganise work processes to make them safer and to break away from the symbolic conception of the epic-type protagonist that is ingrained in society.

Subprocess B includes four categories:

1. society portraying them as epic protagonists
2. referring to science
3. creating and reviewing protocols to ensure a safe work environment
4. training their staff in the surgical unit and other units in the hospital.

Category B1: Society portraying them as epic protagonists

Nurses were annoyed by the symbolism ingrained in society that portrays them as epic protagonists. This type of protagonist is only visible in tragic contexts, such as the COVID-19 pandemic and does not interest them. Society praises nurses for their altruistic role rather than their professional one. It is not sufficient for professionals to be praised by society for their selflessness; they also desire intellectual and financial recognition. Therefore, it is assumed that the high profile of professionals will persist after the pandemic. This is a secularised phenomenon, as protagonists said:

> It is not wise for people to speak without knowledge and risk making mistakes. Initially, nurses were applauded, which I considered superfluous, since nursing is a professional field like any other and its duty is to provide care, which is intrinsic to your profession, as it has been since Florence [Nightingale]'s time ...
>
> N18

> I feel uncomfortable when I see nurses being praised by the media and society for being on the front line of a pandemic as heroes, while I feel as if I were in the trenches of a war without the ammunition needed to defend against the hidden enemy. What society and the media need to defend are better working conditions for the largest working class in health care in Brazil and in the world. I have experienced epidemics before, such as the 'flu, and what has changed? Nothing, apart from the advent of vaccines, but the precariousness of nursing work continues ...
>
> N13

> My initial assumption was that healthcare professionals, including nurses and physicians, would gain more visibility due to the attention they received. Although health professionals have a leading role, political issues can divert attention and focus away from health care over time ...
>
> N15

Category B2: Referring to science

This meant that nurses were moving away from the secularised conception of epic, selfless and altruistic actors and, instead, becoming health professionals with practices based on scientific evidence. The aim was to establish new perioperative protocols. The first sources of information to consult were those made available by the WHO, the National Health Surveillance Agency (ANVISA) and the main trade bodies in the surgical specialty. As participant N14 reported:

> We quickly got together with the hospital infection control service and based [protocols] on WHO resolutions, the main world trade bodies and articles with reliable methodologies; that is how we started to draw up and restructure perioperative protocols.
>
> N14

Category B3: Creating and reviewing protocols to ensure a safe work environment

Nurses used scientific methods to implement their leadership skills by creating and reviewing protocols to ensure a safe work environment. At this stage, it was deduced that the biosafety protocols recommended in the literature were suitable for their needs. These protocols are designed to contain the spread of the virus in the environment if they are implemented with the available PPE and if team members adhere to them. As participant N14 stated:

> When [re]structuring the protocols, we realised that many of the actions we were adopting were already implemented in the hospital and were sufficient to deal with this virus. It was recognised that many things were not reinvented, but an opportunity to maintain and follow the same protocols during and after the pandemic. It became apparent that complete adherence to PPE use had not yet been achieved.
>
> N14

Category B4: training their staff in the surgical unit and other units in the hospital

After developing the protocols, the nurses moved on to the next stage, training their staff in the surgical unit and other units in the hospital to make them co-responsible for safe care. According to participant N15:

> ... [surgical unit] was the most efficient structured unit and, therefore, nurses from that unit provided training to other units' staff, primarily on procedures involving the airways, dressing and undressing.
>
> N15

Subprocess C: Nurses reflecting on the impact of COVID-19 on their work process and professional identity while the pandemic continued

After completing the process of reorganising work in response to the pandemic, nurses proceeded to the third subprocess of reflecting on the impact of COVID-19 on their work process and professional identity while the pandemic continued. This reflection resulted in both positive and negative conclusions. The pandemic brought benefits to their work process, but there was uncertainty as to whether these benefits would last.

Weighing the positive aspects against the negative ones, nurses concluded that the pandemic was having more positive than negative effects on the nursing work process. Positive and negative comments

about the pandemic experience were grouped into two categories:

1. pointing out negative aspects
2. considering only temporary contributions.

Category C1: Pointing out negative aspects

This category included two subcategories:

C1.1 Causing dissatisfaction among nursing team members who were reassigned to other areas due to the reduction of elective surgeries.

C12. Mediation of disagreements over protocols between medical teams.

Participants reported:

> To deal with a surplus of human resources, elective surgeries were reduced. As a result, employees were afraid of being transferred to other units with different routines ...
>
> N13

> Conflicts occurred between the medical and nursing surgical teams as to what they considered to be urgent procedures ...
>
> N2

> Furthermore, each specialty began to issue its own guidelines, leading to confusion ...
>
> N14

Category C2: Considering only temporary contributions

Data in this category fell into four subcategories:

C2.1. Improving the team's work conditions by reducing elective surgeries.

C2.2. Observing the increase in worker safety.

C2.3. Providing opportunities for structural reforms and equipment maintenance.

C2.4. Assuming a depreciation of one's professional role in the control of the pandemic.

Improving the team's work conditions by reducing elective surgeries (C2.1) leads to a reduction in workload, divided into four elements: performing only necessary surgeries (C2.1.1), investing in technical training (C2.1.2), providing psychological support to the nursing team (C2.1.3) and respecting the rights of nursing workers (C2.1.4). This includes considerations such as days off, the use of protective measures for high-risk groups and the employee's free will to undertake or not undertake the care of a person with COVID-19. Nurses reported that:

> Some surgeries were maintained, such as oncological surgeries ...
>
> N1

> ... and essential surgeries, such as emergencies and urgent situations ...
>
> N8

> To support our minds, we have been working on the team's resilience with help from psychology.
>
> N7

> With the reduction in workload, employees were able to take a break without being reassigned and those who remained had their lunch breaks respected.
>
> N10

> Employees in the high-risk group were granted leave even outside of their accrual period to avoid exposing them to risk ... Furthermore, employees from the high-risk group were not assigned to operating rooms with patients with COVID-19.
>
> N13

Additionally, it was observed that teams incorporated protocols with safer procedures into practice. An increase in work safety was observed (C2.2) when nurses adjusted quantitative and qualitative access to PPE through its rational use and ensured access to PPE for all employees involved in risky procedures. There were protocols for wearing PPE during surgery, for intubation and extubation, as well as masks being worn by patients in the operating room. COVID-19 tests were performed on all surgical personnel. As one participant stated:

> There has been an increase in access to special equipment for the team, allowing the use of masks and other PPE even in the absence of patients, in order to protect themselves and their colleagues. A separate operating room should be designated for patients with COVID-19 ...
>
> N5

Another temporary contribution was opportunities for structural reforms and equipment maintenance (C2.3) that the reduction in elective surgeries provided. As reported by a participant:

> ... we took the opportunity to contact the maintenance and engineering team to perform preventive maintenance, because we know that when the schedule is in progress, it becomes more difficult ...
>
> N1

However, nurses concluded their experience by expressing concern for the future quality of care and assumed that the value of their profession would be depreciated once the pandemic was controlled (C2.4). They stated:

> Once the pandemic is over, the losses will be immeasurable for patients and the institution, particularly in terms of optimising work, prioritising patients according to their risks and restoring the system to ground ...
>
> N1

> Negotiating better work conditions for nurses is necessary ...
>
> N18

> We are currently experiencing greater recognition from society, but it may not be permanent and it could be forgotten. It is important to be recognised for the work we do rather than being seen as heroes. Society must recognise the value of nursing.
>
> N14

Discussion

The experiential process of Brazilian perioperative nurses, at the beginning of the COVID-19 pandemic, moved from fragility to the transitory overcoming of epic protagonism. The intervening component of such overcoming occurred when those nurses adopted actions related to transformational leadership aligned with the reaffirmation of their professional identity.

According to the tenets of symbolic interaction, the actions of individuals are shaped by their interactions with themselves and others. These interactions lead individuals to make choices that ultimately determine the course of action. Consequently, actions are the consequence of an active decision-making process by the actor, which involves defining the situation and how the action will be carried out[21].

Nurses in unprepared surgical settings and feeling less confident

In this study, perioperative nurses delineated the circumstances under which they encountered the chaos depicted in subprocess A. They found their self-confidence in professional practice in a surgical environment that was not prepared for the severe commitment of the COVID-19 pandemic.

The nurses' mental suffering was largely attributable to the symbols that were established. Symbols are meaningful statements that are socially developed through interactions. They are arbitrarily established and altered by their actors' interaction. To be symbolic, the organism actively creates and manipulates symbols in interaction with others[21].

In this way, dealing with the unknown was one of the symbolic statements that contributed in some way to the initial numbness of both nurses and healthcare teams and institutions. The uncertainty surrounding the best scientific evidence for the management of an emerging infectious disease, which is highly transmissible and has an uncertain development, contributed to transforming the situation into a nebulous one, arousing fear in the face of the feeling of not being able to govern something that had not been tangible by science until that moment.

The findings in this study have been corroborated by research into nurses' experiences of the COVID-19 pandemic around the world. Korean nurses also reported fear of an unknown enemy, since they also cared for suspected or confirmed cases of COVID-19, using only PPE and with little epidemiological knowledge of the virus. The process was rapid, as if they had been taken by surprise and, thus, they did not have time to prepare. The guidelines were in constant flux, leading to the perception that they were being thrust into a combat zone without any preparation[25].

The period in question saw nurses around the world experience mental distress because of the fear they felt of having to sacrifice their personal safety and that of their families to care for patients infected with the new coronavirus. The lack of certainty surrounding the adequacy of available resources to face the challenges posed by the pandemic further compounded nurses' distress[26].

The experience of Brazilian perioperative nurses demonstrated that hospitals were not adequately prepared for the advent of a rapidly spreading pandemic. Nurses became aware of the risk of transporting patients from the ICU to the surgery room without a full dressing. This awareness served to highlight the fact that patient and staff safety protocols had been violated. Consequently, with the advent of the pandemic, the planning and operationalisation of information, material and human resources in the perioperative setting had yet to be implemented.

The global health and humanitarian crisis precipitated by the 2020 COVID-19 pandemic has highlighted the world's vulnerability to the occurrence and global spread of known and new contagious diseases. Furthermore, the pandemic has exposed weaknesses in the global response to epidemics and pandemics[27].

One of the weaknesses highlighted at the beginning of the COVID-19 pandemic was the lack of PPE. This shortage was compounded by several factors, including the high rate of virus transmission, the lack of adequate training in PPE use and disposal, the relaxation of guidelines for prolonged use, the re-use of equipment and restrictions on the export of health products. The collapse of the global PPE supply chain exposed healthcare workers on the front line, especially in low- and middle-income countries, due to inadequate healthcare infrastructure and socioeconomic disparity. The lack of effective action to maintain and equitably distribute existing PPE stocks exacerbated their scarcity, jeopardising effective coping with the pandemic[28].

Consequently, Brazilian perioperative nurses found themselves in a state of mental distress as the protagonists of a drama, in the face of the conflict of being hailed as epic protagonists by society and the media, which showed them in an exceptional way on the front line. In the context of the ongoing battle against the COVID-19 pandemic, those nurses faced inadequate work conditions that threatened their physical and mental wellbeing, as well as that of their patients, their families and the general society that had praised them.

Several Brazilian studies have explored the visibility achieved by nursing during the pandemic. The first study attributed the increase in visibility to the fact that nurses provided existential care, focussing on a practice based on relationships[29]. The second study linked the heroic image of nurses in the fight against COVID-19 to a primarily female profession. The images presented women who faced challenging work with the responsibility of organising chaos and, therefore, the primary role of bringing order to the front line of the battle[14]. A third study reflected on the dissatisfaction with the images of angels and heroes attributed to nurses, showing that reality was not as heroic as previously assumed. The experience of dealing with the COVID-19 pandemic served to signal the need for nurses to seek decent conditions to provide care, fair wages and recognition of professional work by society[30].

A critical analysis of the effects of the hero discourse on nurses facing the ongoing COVID-19 crisis from political, social, cultural and professional perspectives revealed that the hero discourse is not a neutral expression of appreciation and sentimentality. This finding emerged from a comprehensive qualitative analysis of data sources from the United States, Canada and the United Kingdom. The analysis encompassed a wide range of publications, including magazine and newspaper articles, news from general websites, information from trade bodies and videos. The analysis revealed that the discourse attributing a sense of heroism to nurses is a multifaceted tool employed to achieve a variety of objectives. These objectives encompass the normalisation of nurses' exposure to risk, the application of a

citizenship model and the preservation of existing power relations that impede the autonomy of front-line nurses in determining the conditions of their work[31].

Nurses as protagonists of transformational leadership in the work process and in shaping their professional identity

As previously mentioned, actions are the consequence of an active decision-making process by the actor, which involves defining the situation and how the action will be carried out[21]. The human mind uses symbols, manipulating them in active communication with oneself to inform an individual's attempt to act in his or her world. The mind transforms the world into a world of definitions; action is a response not to objects, but to the individual's active interpretation of these objects[21].

In this way, the second subprocess of the theoretical model constituted a method by which nurses were able to respond to themselves, and resignify their professional identity through actions based on transformational leadership. With this strategy, they sought not only to organise safer work processes, through improving information, human resources and materials, but also to build a professional identity. This was a response to the discomfort that nurses experienced when they were symbolically hailed by the media and society as epic protagonists, rather than as professionals on the front line of the pandemic battle, in need of better work conditions.

Transformational leadership involves leaders being models to follow, inspiring confidence and motivating their followers to work towards shared goals while knowing their followers needs and encouraging followers' creativity and participation in decision making[32]. A study conducted among Saudi Arabian nurses found that transformational leadership practice is positively correlated with organisational resilience and participation in the work of leaders[33].

The participants in this study were involved in a process of seeking evidence for the implementation of best practices. They used existing knowledge to develop a safer work process. Despite the paucity of in-depth knowledge on the effects of the then new coronavirus disease, the scientific nursing community developed specific guidelines to reorganise work processes in the operating room. These guidelines prioritised the safety of the teams working there as well as that of patients.

In Brazil, the Brazilian Association of Nurses in Surgical Centres, Anaesthesia Recovery and Material and Sterilisation Centre (SOBECC) stressed the importance of nurse leadership in the context of COVID-19, highlighting the need to redesign care models and train the team in real time[34]. These pronouncements on leadership responded to the resignification of the heroic-epic protagonism by nurses, who promoted transformation, now as protagonists, through the inherent leadership in their professional training. This protagonism manifested itself in nurses assuming a coordinating role in reorganisation actions, draughting and revising protocols for the safety of the work process and training their teams in the operating room and other hospital units.

Nurses reflecting on the impact of COVID-19 on their work process and professional identity while the pandemic continued

As the third subprocess of the experience emerged, nurses were observed contemplating the impact of the pandemic on their work processes and professional identity. In terms of work processes, numerous adaptations were immediately required, given the emergency context, to ensure the safety of professionals and quality of care for patients.

The nurses identified discontentment among members of the nursing team who had been reassigned to other areas due to the reduction in elective surgery. The suspension of elective surgery resulted in a significant reduction in the number of surgical procedures, which led to the reassignment of part of the nursing team to other units. Although this measure ensured a workforce to care for patients affected by COVID-19, it also generated anxiety and fear in these professionals, who had to adapt care routines different to those in the perioperative setting[35,36].

The need to mediate differences in protocols between medical teams was also identified as a negative impact of the pandemic. This action was characterised by the fragility of a conflictual interpersonal relationship. Nurses perceive themselves as underestimated and not valued by the medical team, as demonstrated in studies evaluating these variables[37].

In the context of a reduction in surgical procedures, the participants reported positive impacts on the work process in terms of labour rights and professional identity. However, perioperative nurses perceived these impacts as temporary, with the expectation that the benefit would cease once the pandemic ended.

A study that evaluated the context of health services in Brazil at the beginning of the COVID-19 pandemic reports that nursing professionals already faced challenges in their daily lives, such as overload, long working hours, physical and psychological exhaustion, low pay and professional devaluation. These challenges were compounded by the complexity of dealing with an unfamiliar disease. The findings of this investigation indicate that perioperative nurses began to improve their teams' working conditions when the pandemic resulted in elective surgery being reduced. This improvement was only possible because the volume of elective surgeries had been reduced by up to 60 per cent. This highlights the need for public policies to develop satisfactory and dignified work conditions for nursing professionals[38].

Even when considering temporary contributions, the participants in this study recognised the extent to which nursing work has achieved visibility, particularly on social media and television networks. When viewed through the lens of the Theory of Recognition, it becomes evident that there is a lack of clarity regarding the visibility of the nursing profession. This is because professional self-realisation is undermined by poor work conditions. This indicates that there are significant challenges to ensure effective recognition of that professional category[39].

The participants involved in this study lacked confidence that the positive visibility of the nursing profession will

endure. In this regard, a study conducted in Portugal examined social attitudes towards healthcare professionals before and during the pandemic. This study corroborated the sentiments expressed by our participants, highlighting the discrepancy between applause for nursing and the poor working conditions nurses endure[37].

It is important to note that, worldwide, nursing accounts for 59 per cent of health professionals. In the context of the global response to the COVID-19 pandemic, the WHO and the International Council of Nurses (ICN) collaborated to launch a campaign for the valorisation of the global nursing workforce, the Nursing Now Campaign[40]. This campaign defended nursing as one of the pillars on which nation states rely to provide access to universal health coverage and warned that no global health agenda could be achieved without long-term and articulated efforts to maximise the contribution of the nursing workforce and its role in multiprofessional health teams[40].

The WHO report, 'State of the world's nursing: Investing in education, jobs and leadership', highlights the need for policy interventions that optimise the scope of practice and leadership of nurses, along with increased investment in their education, training and work. However, the report revealed several obstacles, indicating that although nursing has expanded its scope and training, these advances are not uniform. The shortage of professionals is concentrated in developing countries, particularly in Africa. Asian and Latin American countries also face a critical situation. Brazil and Chile stand out in Latin America as having the largest number of professionals[41].

In Brazil, nursing represents 70 per cent of the health workforce[42]and 75 per cent of the nursing team consists of technicians and assistants with 25 per cent nurses[43]. Nurses are guaranteed the right to carry out all nursing activities and are exclusively responsible for:

- directing the nursing body that is part of the basic structure of the health institution, both public and private, and leading the nursing services and units[44]
- organising and directing nursing services and their technical and auxiliary activities in companies that provide these services[44]
- planning the aforementioned duties including the organisation, coordination, execution and evaluation of nursing care services; consultancy, auditing and issuing opinions on nursing matters; the delivery of nursing consultations; the prescription of nursing care; the direct nursing care of seriously ill patients; and the provision of more technically complex nursing care that requires scientific knowledge and the ability to make immediate decisions[44].

Although Brazil has a high density of professionals per inhabitant (1.3 nurses and 3.3 technicians and assistants per thousand inhabitants), the country performed poorly when evaluated in terms of regulations and work conditions, scoring only two points on a scale of one to six[35].

On 19 June 2023, there were 65 029 cases of COVID-19 reported among nursing professionals in Brazil, resulting in 872 deaths, giving a lethality rate of 2.27 per cent[45]

This study indicates that increasing a country's nursing workforce and investing in sporadic campaigns are insufficient to optimise nurses' scope and leadership. Permanent investment in education, training and work conditions is necessary. Furthermore, continuous and effective global policies to benefit mental and physical health are required to preserve the safety of health workers, particularly when new epidemics or pandemics are suspected, with a particular focus on members of the nursing team, who are most affected.

Finally, nursing faces many challenges in terms of establishing its professional identity. To do so, the profession must begin to consider its leadership role in creating quality work environments, implementing new care models and promoting health and wellbeing in an exhausted and overburdened nursing workforce. Leadership, in its various forms, is necessary to increase nurse satisfaction, recruitment and retention and ensure healthy work environments[46].

Strengths and limitations

One of the limitations of this study is that it did not include the experiences of other members of the nursing team, such as nursing assistants and technicians. At the end of this study, further questions were raised concerning the experiences of other professionals who make up the health team, as well as the comparison of the experiences of nurses from different levels of economic development in the country.

Conclusions

In conclusion, nurses used actions related to transformational leadership to overcome the need to reorganise for safer work. This helped to foster their professional identity, despite the discomfort of being portrayed as epic protagonists on the front line of the pandemic battle and the need for better work conditions. The theoretical model posits transformational leadership as a potential tool for reconstructing nurses' professional identities. Finally, this study recommends the formulation of global policy to support systematic, active and continuous organisational programs for the management of new epidemics and pandemics.

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