

Qualitative analysis of nurses' performance and experiences in hospital management in the face of COVID-19

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Abstract *This study aimed to analyze the role of nurses in hospital management in the face of COVID-19. The study had a qualitative, descriptive, and exploratory approach. The setting was a hospital that was completely transformed to care for patients with COVID-19. At the time of data collection, ten nurses managed the services, and all participated in the semi-structured interview. After thematic analysis, the data were presented in three categories, representing the elements of Donabedian's triad: structure, process, and result. Category 1 highlighted the hospital structure re-configuration based on material and people management; category 2 addressed the work process restructuring to achieve goals with safety and quality; and category 3 focused on nurses' experiences in describing the results achieved and expected. The analysis highlighted the importance of teamwork, involvement, and adaptation of managers in the face of the challenges of a new and life-threatening disease, scarce resources, and the complexity of human relationships in the crisis. In transformational leadership, these nurses encouraged behavior change, professional growth, and resilience.*

Key words *Hospitals, SARS-CoV-2 Infection, Donabedian Model, Head Nurse, Organization and Administration*

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Introduction

The great demand for care and the management complexity linked to the collapse of the health system due to COVID-19 (acronym originating from Coronavirus Disease 2019) highlighted the role of nurse managers, who needed to plan and implement emergency strategies, such as restructuring general hospitals and creating field hospitals, based on staff recruitment, training, care flow review, new protocol and routine development, material resource management, mainly in relation to equipment, supplies and beds, among other aspects of human resources that needed to be adequate for this assistance reality^{1,2}.

As a nurse manager, we assumed the definition that recognizes in this professional the technical and social skills and abilities necessary to address organizational challenges and provide responses with rigor, efficiency and effectiveness, which, like the demands generated by the COVID-19 pandemic, bring together strategies for safety and quality of care provided³.

There were many challenges experienced and that need to be investigated, considering the perception of the professionals involved, such as nurse managers, who acted as mentors given the team's sense of responsibility and motivation⁴. Deliberations in the health field needed to be aligned with quality management precepts, in order to maintain service standards in response to the new demands generated by the COVID-19 pandemic. The restructuring processes of healthcare institutions, such as reference hospitals, can be discussed in light of Donabedian's triad for healthcare assessment: structure, process and result⁵.

The structure comprises the factors relating to the conditions under which care is provided, encompassing the physical structure, material, human and financial resources. The process refers to the steps that constitute healthcare, i.e., the activities carried out by professionals in patient care. The result comprises changes, desirable or undesirable, in patients', individuals' or populations' health condition⁵.

Considering the assumption that there is a causal relationship between structure, process and result, so that the available structure needs to be sufficient to support the execution of the processes inherent to the plans, which trigger different results⁵, the question emerged: How did nurse managers perform in the restructuring of a hospital institution to exclusively care for patients with COVID-19?

To answer this question, we aimed to analyze the role of nurses in hospital management in the face of COVID-19.

Methods

This is a descriptive and exploratory, qualitative research, guided by the COnsolidated criteria for REporting Qualitative research to organize the writing of methodological aspects. The qualitative approach was justified in the face of objectives achievable by subjective views on the phenomenon, which involve opinions, values and beliefs, constructed from the experience lived by each individual, i.e., which starts from the personal reflection of what has been and is being experienced, in the act of thinking, feeling, relating and acting for nursing care management^{6,7}.

The study setting was a municipal hospital, located in northern Rio de Janeiro, Brazil. This unit originally provided care to the most diverse specialties; however, with the pandemic, it began to exclusively assist patients with COVID-19, increasing the number of beds from 269 to 432, of which 207 are medical clinics and 225 are intensive care. This number was changed a few times due to the constant expansion of beds according to the demand for care in the different cycles of the pandemic.

Data collection took place between January and May 2021. Sampling was intentional due to exhaustion so that all ten nurse managers participated in the study, who met the inclusion criteria of being nurses with employment of any nature in the scenario, working in the managerial dimension of the nursing work process during the COVID-19 pandemic. No nurse manager was away on leave of any nature or vacation during the data collection period. The length of time professionals had been working in the position was not applied as a criterion, considering that some were hired in accordance with the hospital restructuring or were reassigned to management.

An initial contact was made with the nursing superintendent, who made it possible for the researcher to be closer to nurse managers. This approach was carried out individually through WhatsApp®, a message platform, and later formalized by the invitation letter sent by email to each participant.

The invitation letter contained the project summary and a link to Google Form®, where participants were directed to the Informed Consent Form and chose to accept or not participate in

the research. If they accepted, the questionnaire continued with the characterization of their professional profile, and at the end, they chose to conduct an online or in-person interview. Everyone opted for the in-person interview, which was carried out individually at the hospital's study center, ensuring participant privacy and well-being.

The interviews were carried out by the first author, who received training in the application of this technique and was studying for an academic master's degree. The interviews were audio recorded with participants' permission, using the following script: "tell us a little about your experience working in a management position. How did you participate in nursing management to combat COVID-19? In which actions? What are the perceived difficulties in implementing and executing the contingency plan? And facilities? What challenges have you faced in nursing management? What is your view on how the hospital organized itself to face the pandemic?". Circular questions were asked whenever necessary to deepen the topic considering the proposed objective.

Although the interviews were carried out individually, all nurse managers, faced with the common reality, presented an intersubjective vision, which, through thematic content analysis, was objectified, going through the phases of pre-analysis, material exploration, and treatment of results, inference and interpretation⁶. All phases were carried out manually, with the presence of the authors in each of them, in a systematic and in-depth manner, to advance the process of deduction and induction, and develop the three thematic categories derived from the data themselves.

Thus, we emphasized that qualitative analysis sought to objectify knowledge, which was based on participants' subjective data and the authors' perspective on the collective narrative constructed by statements that were completed by shared experiences, facilitating the identification of saturation degree⁶. To structure the analysis, we applied Donabedian's triad (structure-process-result) concepts⁵.

The interviews lasted 2 hours and 50 minutes, with an average time of 17 minutes. They were transcribed in full and re-presented to each participant via email, all of which were validated without changing the content.

The study respected ethical guidelines, approved by the *Escola de Enfermagem Anna Nery* Research Ethics Committee in December 2020,

under Opinion 4.447.739. Informed Consent Form was obtained from all study participants in writing. Statements were identified by codes (P = participants, followed by the number of interviews in order).

Results

Table 1 presents the characterization of the participant professional profile.

Participants' job tenure varied between two months and 18 years, and in a management position, between two months and five years, with an average of 56 months. All participants reported working 40 hours a week. Seven had only this employment relationship, and the others had the second employment relationship but without management-related functions.

Three categories emerged from thematic analysis (Chart 1), organized according to the concepts of Donabedian's triad, with category 1 being related to structure, category 2 to process, and category 3 to results. These data were presented at the 12th Ibero-American Congress of Qualitative Research (CIAIQ) in the form of abstract⁸.

Based on frequent topics, we highlight the components that relate to nursing management in each element of Donabedian's triad (Figure 1).

Category 1: Hospital structure reconfiguration to exclusively care for patients with COVID-19

The hospital underwent reorganizations, including the transfer of all patients who did not have COVID-19 to other hospitals in the network, as the institution became exclusive for this demand.

In a few days, we transferred all patients who did not have COVID-19. At the time, we had around 109 patients. We had a maternity ward, neonatal ICU, mental health, surgical clinic, outpatient clinic [...]. Before the pandemic, we only had 18 intensive care beds, and now we have 225. It was hard work, motivated by responsibility (P6).

The increase in demand and the change in the service profile required nurses to act in people management on a much larger scale, in addition to professional qualification demands, as many had no prior experience.

I had a team of 70 employees, and I ended up embracing a team of 388. We received employees from field hospitals, federal hospitals, or the ECU

Table 1. Participant characterization (n=10).

Category	Variable	Number of participants
Sex	Female	7
	Male	3
Age range	Between 30 and 39 years	7
	Between 40 and 49 years	3
Position and sector of activity	Intensive care coordinator	4
	Medical clinic coordinator	5
	Superintendent/general nursing coordinator	1
Lato Sensu specialization	Surgery center	1
	Material and sterilization center	1
	Emergency	1
	Dermatological nursing	1
	Neonatal nursing	1
	Obstetric nursing	1
	Health management	2
	Intensive therapy	3
Stricto Sensu specialization	Family health	1
	Master's degree in Epidemiology and Control of Infectious Agents	1
Management area degree	Graduate degree/specialization	2
	Extension/training courses	5
	Master of Business Administration	1
	None	2
Type of work contract	Consolidation of Labor Laws	5
	Temporary/emergency contract	4
	Statutory/public contest	1

Source: Authors.

[Emergency Care Unit]. We had a call from the candidates [...]. I'm always receiving new employees, sometimes with no experience, and every day we are training someone (P2).

Among the challenges amid the transformations, both of structures and of people themselves, the worsening of the pandemic, the new "waves" resulting from the emergence of new variants of the virus, a reflection of low adherence to social distancing, which consequently increased the number of infected people who required hospital care, reflected the need for reorientations in the hospital care network's tactical and operational planning for patients with COVID-19.

Category 2: Nursing work process restructuring for exclusive care for patients with COVID-19

The Hospital Infection Control Commission (HICC) coordinated nurse managers' education so that each one could replicate the knowledge with their teams on site. Nurse managers were responsible for knowledge management, education planning, team resilience and motivation.

We learned to act when a patient arrived, with the protocols that we trained, updated and trained again. And the biggest challenge is training the entire team [...]. We were building and learning, because we were talking about a pandemic, in which there were many updates and modifications to protocols, so as we did, we learned how to deal with the disease and all the unit's protocols (P6).

Regardless of the leadership style, to face the situation, it was necessary to balance, trust and know how to recognize limits, especially emotional ones.

The biggest challenge as management is maintaining the team's emotional balance, where many have fallen ill, and are still falling ill, being able to provide quality care in the face of so many losses, including professionals. And above all, be balanced mentally and physically. It's about being able to

Chart 1. Thematic categories. Rio de Janeiro-RJ, Brazil, 2021.

Category 1	Category 2	Category 3
Hospital structure reconfiguration for exclusive care for patients with COVID-19	Nursing work process restructuring for exclusive care for patients with COVID-19	Nurse managers' experiences in hospital restructuring: reports of results achieved

Source: Authors.

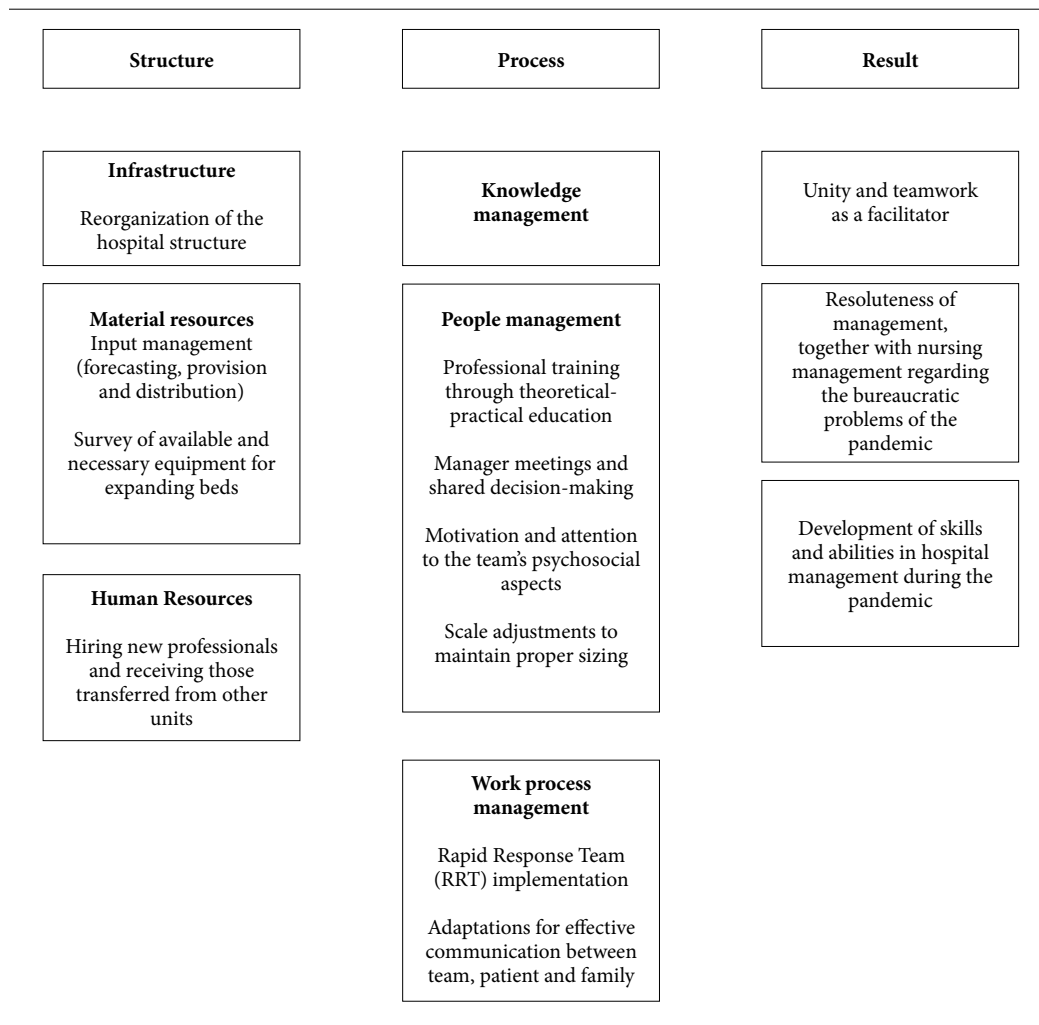


Figure 1. Framing of Results according to Donabedian' triad.

Source: Authors.

structure yourself within a totally new demand, which we didn't expect [...] (P8).

Although patients arrive at the hospital through the vacancy regulation center with guidance on whether they should go to a clinical bed or intensive care, the rapid evolution of the disease required care with greater technological density. Therefore, a Rapid Response Team (RRT) was implemented.

[...] we identified the need to perform the RRT, which admits patients in a correct flow, where they arrive and undergo a blood gas analysis and a tomography. We have a multidisciplinary team of anesthetist, surgeon, clinician, nurse, nursing technician and physiotherapy, who carry out clinical stabilization of patients and transfer them to the sector they came to, regulated or not, seeking

to guarantee patient safety and improve bed management (P6).

The communication routine with the family also needed to be revised. Nurse managers, together with the healthcare team, tested different communication flows, until they reached a model that empirically brought good results.

And how does the information reach the family? We thought about three different flows, and then when we started, one didn't work, we tried another, it didn't work, until we arrived at a flow that assisted the family better (P4).

Thus, the hospital had an exclusive line for communicating with families, which operated 24 hours a day, providing information on the clinical picture individually.

Category 3: Nurse managers' experiences in hospital restructuring: reports of results achieved

Teamwork facilitated nurse managers' work, including because they count on the partnership of the general management, which also made efforts to facilitate processes, reduce bureaucracy and speed up responses.

The ease here is the team issue, this applies to HICC, the patient safety center, the coordination [...]. Here we have always had a very united team, so, if we are going to set up a new ICU, it would not be the coordination that would set it up, but rather 'let's set it up' all together! I think the biggest facilitator was this unity that the team demonstrated [...] (P7).

As the hospital originally had another profile, most of nurse managers found themselves in a different reality than the one they were adapted to.

As a manager, it is my first opportunity, I had a care career here, and I had been working in continuing education for a few months. Then the coordination opportunity arose, it was certainly the biggest challenge to be learning and practicing at the same time (P3).

However, it is clear that, after just over a year since the start of the pandemic, all learning has consolidated structural and constantly developing knowledge to adjust plans to the different cycles of the pandemic.

We were facing an unknown and today we are a little more used to it. We know what contaminates, what doesn't contaminate, of course things evolve very quickly, we are always learning something different with COVID-19. But imagine a year ago, a team where we were all in a comfort zone, where the hospital was not a reference for COVID-19 [...]. And we had to study, read, pay attention to all the rules. But I believe that today the team is better trained, a year has already passed, and we are experiencing a lot of things, all completely different, even from what we experienced in 2020 (P10).

The COVID-19 pandemic brought the most diverse types of emotions and experiences, which was an important contribution to professional development, resilience and qualification of work processes.

Discussion

The hospital restructuring to exclusively care for patients with COVID-19 required a complete

infrastructure rearrangement, such as reconfiguration of beds and conversion of non-clinical spaces to clinical spaces. This work was planned and executed together with nurse managers, with team readjustment and resilience being key elements to highlight the ability to adapt, especially given the transformation taking place in 100% of spaces, even those previously obscured and in a short space of time^{9,10}.

Although nurse managers found it difficult to maintain balance and be a mirror for the team, and thus motivate them, teamwork was able to mitigate negative feelings, supported by partnership, equity, responsibility and professional expertise^{11,12}.

This transformation highlights the pillar of a service 'structure', in which the availability of material and human resources in sufficient quantity and quality is directly related to the success of the operation. The greater the efforts to adapt the available structure, the greater the losses in the human chain, marked by exhaustion, illness, ethical conflicts and low professional satisfaction^{5,13}, which could be highlighted in our data.

For front-line professionals, the lack of supplies has had devastating consequences, which increases the complexity of relationships and challenges experienced by managers, because it involves psycho-emotional vulnerabilities, bringing to light a series of disorders that can affect productivity and the level professional satisfaction¹⁴.

With temporary hiring authorized, nurse managers began to observe that many of the new employees were accumulating contracts, causing burnout, overload and premature interruption of employment contracts.

Among the actions to optimize the use of resources, assistance and professional safety, nurse managers took responsibility for the constant processes of nursing team's education and knowledge management, based on dialogue and significant learning in daily work, in alignment with the conceptual framework of continuing education. This attribution is elementary to the profession and the position, since in crisis situations nurses are one of the first professionals to manage its consequences, although they may often not feel prepared for this¹³.

To properly plan care, it was necessary to rethink the work process, prioritizing, for instance, the internal audit of hospital responses to identify what constantly needed to be improved¹⁵. Operationally, we highlighted RRT, which already presented evidence of good practices for effective

response in a timely manner^{16,17}. A RRT included the active participation of nurse managers, who demarcated space for professional action in flow and routine development.

Taking into account the specificities of a disease with still little known clinical management such as COVID-19 (especially in the first year of the pandemic), the adjustment of the flows established for patient admission by RRT contributed to systematization of this activity, positively impacting the use of resources^{16,17}.

Although patients arrived with vacancies determined by the regulatory center, whether clinical or intensive care, many became unstable on the way or even during the initial minutes of their hospitalization, requiring a change in the indication of therapy since its initial assessment, and this disrupted the service dynamics, especially intensive care bed management, posing a risk to patients.

In addition to RRT, nurse managers also actively participated in communication plan with family members, requiring the adaptation of measures, until it was actually feasible, achieving the objectives in a humanized manner. We highlighted, empirically, the role of nurse managers in assessing the strategies adopted and in family members' and patients' satisfaction.

In the scope of expertise, the unexpected nature of events meant that nurses, who, until then, may not have had experience in management, had to reinvent themselves and take on new roles, being trained throughout the course of their actions, and the problem lies in this axis: the gap in education.

The events and death rate from COVID-19 have announced that pandemics cannot be primary places of learning. Although they are important in the spectrum of education and experience, professionals need to be minimally prepared beforehand and not just during. However, given the situation, the entire workforce was well committed, and even if some were not adequately prepared, they reported that they were successful in managing their processes and resources.

In teamwork, nurse managers commonly assumed the role of leader. We reinforced with our data that, although there are several types of leadership, a good leader does not have a unique style, but rather a style that can be adjusted to the need. In public health crises, such as COVID-19, some leader skills were extremely important such as: conflict resolution; strategic, tactical and operational planning; decision-making; situation-

al diagnosis; communication; establishment of networks; planning and organization of material and human resources; and team education and motivation¹⁴.

Nurse managers who provided support and communication through transformational leadership contributed positively to nursing professionals' work involvement and, thus, improved organizational results, following a line of intervention based on strategic planning and situational diagnosis, mainly to print a common goal and a sense of responsibility among those involved.

Nurse managers assumed motivational stances, seeking team perceptions about their practices, balancing the workforce based on different skills and physical and mental conditioning, when considering, for instance, scales with experienced professionals and recent graduates, and among those with an employment relationship and others with more. It is a person-centered management centered that is dealing, in a relationship of mutual protection, with transformational nursing, despite the challenges of the poor structure^{14,18}.

The pandemic showed the extreme fragility of health systems in general, highlighting the need for reformulations in various areas, whether structural reforms, care models, financing mechanisms, workforce investment, among others¹⁹. But even in light of this situation, nurse managers' experiences certainly bring a subjective relationship that demonstrates that the greater the development and competence in the field of management, the greater the ability to deal with difficult situations^{20,21}.

And based on the processes described in the hospital restructuring, we highlighted, based on the experiences lived by nurse managers, possible indicators of results, such as: (i) patients' and family members' satisfaction regarding communication strategies; (ii) the constant updating of standards, routines and care protocols, following the evolution of scientific knowledge and legal and official regulations; (iii) and the positive impact of early and careful clinical assessment of patients by a RRT for adequate bed management and safety.

Final considerations

Nurse managers' statements, in their entirety, highlighted their collaboration in the operation of hospital restructuring to exclusively care for

patients with COVID-19 in the second largest Brazilian municipality in terms of population density. They highlighted the constant inspiration for self-motivation, and mainly, team motivation to maintain focus, in the necessary cycle of action-reflection-action in the face of the situation, which was only possible through the application of qualitative approach.

Thus, we highlighted the importance of qualitative approach to reveal nurse managers' self-perception as fundamental pieces for this hospital restructuring, based on lived experiences as a foundation for understanding the actions developed and the prominent place of these professionals in the field of management in the face of the challenges of the COVID-19 pandemic.

With the COVID-19 pandemic already underway, the lack of time to think about the contingency plan was one of the greatest challenges, with the ability to make decisions and react quickly to changes being fundamental, which required emotional intelligence, resilience, sense of collectivity and commitment to the managed team and the population.

Changes in the hospital's care profile, which implied specific technical expertise for performance, such as in intensive care, required nurse

managers to have knowledge of the managed team for better staffing and attention to psycho-emotional aspects, based on transformational leadership to motivate, reduce turnover and ensure safety through knowledge management and education.

Among the processes developed, RRT and communication flow between professionals, patients and families were positive. In both examples, teamwork made the difference in terms of resolution and quality. In crisis situations, the results pointed to the importance of interprofessional work, continuing education, knowledge management, transformational leadership, and the application of the structure-process-result triad principles in nursing and health management.

This study had limitations because it was carried out only with nurse managers, since we understand that their actions impacted the entire functioning of the hospital, with the lack of vision from those who were impacted, and who also operationalized processes, being limiting. Despite its strategic role, the choice of a single scenario presented another limitation, as it does not allow the generalization of results, in addition to the necessary criticism that all understanding is incomplete.

Collaborations

PD Rebello: study design, data collection, data analysis and interpretation of results, article writing and critical review, approval of the final version to be published. MM Silva: study design, data analysis and interpretation of results, article writing and critical review, approval of the final version to be published. SCM Duarte and JL Araújo: data analysis and interpretation of results, article writing and critical review, approval of the final version to be published. CL Baixinho and A Costa: article writing and critical review, approval of the final version to be published.

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