



QUALITATIVE STUDY

Exploring Front-line nurses' loyalty in Covid-19 Emergency wards: a Grounded Theory study

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Findings:

This study explored the psychosocial processes behind frontline nurses' loyalty to Covid-19 wards, identifying how shared experiences and supportive professional relationships shaped their evolving identity and long-term commitment.

ABSTRACT

BACKGROUND: Front-line Covid-19 nurses developed a sense of belonging and professional loyalty to the newly established Covid-19 wards, often resisting a return to their original wards after the first wave.

AIM: This study explores the psychosocial processes shaping their loyalty, with a focus on the evolution of their personal and professional identity.

METHODS: A qualitative study based on Strauss and Corbin's Grounded Theory was performed. Data were analysed using coding techniques, constant comparison and memo-writing. Interviews were conducted until data saturation was reached.

RESULTS: Analysis of 25 semi-structured interviews identified a theoretical model describing the process through which frontline nurses developed professional loyalty in Covid-19 wards. This model comprises four interconnected themes: "Awareness of the importance of their role", "Confidence acquired", "Satisfaction with the work accomplished" and 'Relationships established', which emerged as the core category. Findings indicate that professional relationships, characterized by mutual support, trust, and shared experiences, were central to fostering loyalty, reinforcing nurses' identification with their team and workplace, and shaping their long-term professional commitment.

CONCLUSIONS: These findings highlight the crucial role of a supportive work environment in strengthening team cohesion and long-term commitment. From a practical perspective, fostering strong peer relationships, structured support programs, and clear career progression pathways may enhance nurse retention and mitigate post-crisis attrition. Beyond immediate applications, this study contributes to the broader discussion on workforce resilience in healthcare, emphasizing the need for further research on the long-term impact of crisis deployments on career trajectories and healthcare systems worldwide.

KEYWORDS: *Grounded Theory, Nurse, Loyalty, Covid-19, Psychosocial adaptation, Job satisfaction*

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QUALITATIVE STUDY

La lealtà degli infermieri in prima linea nei reparti di emergenza Covid-19: uno studio qualitativo basato sulla Grounded Theory

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Riscontri:

Questo studio ha esplorato i processi psicosociali alla base della lealtà degli infermieri delle unità Covid-19, identificando come le esperienze condivise e le relazioni professionali di supporto abbiano plasmato la loro identità in evoluzione e il loro impegno a lungo termine.

ABSTRACT

BACKGROUND: Molti infermieri impegnati nei reparti Covid-19 hanno sviluppato un forte senso di appartenenza e lealtà professionale, arrivando talvolta a resistere al ritorno nei reparti di origine.

OBIETTIVO: Il presente studio esplora i processi che hanno alimentato questa lealtà, con particolare attenzione all'evoluzione dell'identità personale e professionale.

METODI: Studio qualitativo ispirato alla Grounded Theory di Strauss e Corbin. L'analisi dei dati è avvenuta attraverso codifica, confronto costante e scrittura di memo. Le interviste sono state effettuate fino al raggiungimento della saturazione dei dati.

RISULTATI: L'analisi di 25 interviste semi-strutturate ha portato all'elaborazione di un modello teorico che descrive il processo attraverso cui gli infermieri in prima linea hanno sviluppato un senso di lealtà professionale nei confronti dei reparti Covid-19. Il modello comprende quattro dimensioni interconnesse: "Consapevolezza dell'importanza del proprio ruolo", "Fiducia acquisita", "Soddisfazione per il lavoro svolto" e "Relazioni instaurate", quest'ultima identificata come categoria centrale. I risultati evidenziano che le relazioni professionali, basate su supporto reciproco, fiducia e condivisione dell'esperienza, sono state determinanti nel rafforzare l'identificazione con il team e il contesto lavorativo, contribuendo a consolidare l'impegno professionale nel lungo periodo.

CONCLUSIONI: Lo studio sottolinea il ruolo fondamentale di ambienti di lavoro supportivi nel promuovere la coesione del team e la fidelizzazione del personale. Programmi strutturati di supporto, relazioni tra pari e percorsi di crescita professionale possono contribuire a ridurre il turn-over post-crisi. I risultati offrono inoltre spunti rilevanti per riflettere sulla resilienza del personale sanitario e sugli effetti a lungo termine delle emergenze sulla carriera infermieristica.

KEYWORDS: *Grounded Theory, Infermieri, Lealtà, Covid-19, Adattamento psicosociale, Soddisfazione lavorativa*

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BACKGROUND

Respiratory infectious diseases, particularly those caused by emerging viruses, pose significant threats to global health systems and communities [1]. Among these, coronavirus diseases have had a profound impact on public health, with Covid-19 emerging as the most disruptive pandemic in recent history [2, 3]. Caused by the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), Covid-19 placed an unprecedented strain on healthcare infrastructures, overwhelming hospitals and depleting available resources. The pandemic necessitated urgent adaptations in health services, including the rapid reorganization of hospital wards, the implementation of emergency care protocols, and the redeployment of healthcare personnel [4-8].

Nurses played a crucial role in managing the Covid-19 crisis, often working in high-intensity environments such as intensive care units (ICUs) and emergency wards. Many were reassigned from their original positions to frontline Covid-19 units, where they faced not only a high risk of infection but also extreme physical and psychological stress. This large-scale workforce mobilization was essential to address the increasing demand for critical care but had profound implications for nurses' professional identity, emotional well-being, and job satisfaction [3, 9-11].

Several studies have documented the psychological distress experienced by frontline nurses during the pandemic, highlighting increased rates of anxiety, burnout [8-10], compassion fatigue, and post-traumatic stress disorder [12-16]. However, alongside these challenges, a recent systematic review highlighted that many healthcare professionals exhibited notable levels of resilience, self-efficacy, and adaptive coping strategies (*manuscript submitted*). While resilience was initially lower among nurses compared to other healthcare workers, it improved across

successive pandemic waves, correlating with reduced psychological distress and anxiety. Nurses employed various problem-focused coping strategies, such as active coping, planning, and positive reframing, which facilitated psychological adaptation, though they also posed a risk for burnout. Emotion-focused strategies, including humor and acceptance, provided temporary relief, whereas avoidant strategies like denial and self-distraction negatively impacted mental health and work efficiency.

Beyond psychological adaptation, the pandemic also influenced nurses' professional loyalty, a multidimensional concept encompassing commitment to the profession, the workplace, and the healthcare system [17, 18]. Loyalty in nursing is often defined as the sense of duty, responsibility, and attachment to one's professional role and organization [19], influencing decisions to remain in or return to a specific work setting. During the Covid-19 crisis, many nurses exhibited strong professional loyalty, persevering in high-risk environments, often beyond their usual scope of practice, despite personal fears and ethical dilemmas [17, 18, 20]. However, this loyalty was also challenged by physical exhaustion, emotional distress, and dissatisfaction with institutional support, leading some professionals to reconsider their long-term engagement in frontline care [20, 21]. The factors influencing nurses' decisions to remain in or return to emergency settings after the crisis remain insufficiently explored, particularly concerning the interplay between professional identity, workplace experiences, and psychological adaptation.

Understanding how frontline nurses navigate these transitions is crucial for developing policies that support their well-being and professional fulfillment. This study aims to examine the psychosocial adaptation process of nurses engaged in frontline Covid-19 care, with a specific focus on their evolving professional identity and sense of loyalty. The





research seeks to answer the following question: "What happens to the personal and professional identity of nurses engaged in front-line Covid-19 care during a large-scale health emergency?"

METHODS

Study design

This qualitative study employed Grounded Theory (GT) under the "interpretative paradigm" [20] to explore, in-depth, the process through which nurses developed loyalty to Covid-19 emergency wards. Grounded Theory was chosen over content analysis because it allows for the generation of a theoretical framework rather than merely describing or categorizing data. Given the complexity of the psychosocial process under investigation, GT provided a systematic, inductive, and comparative approach that was instrumental in identifying emergent themes, conceptual categories, and their interconnections. This study adopted the Strauss and Corbin [22, 23] approach, which emphasizes a structured yet flexible methodology to systematically develop theory from data while allowing for constant comparison and theoretical sampling. Furthermore, GT is particularly suitable when exploring dynamic social interactions and evolving professional identities, making it the most appropriate approach for this study. To ensure methodological rigor, the consolidated criteria for reporting qualitative studies (COREQ) 32-item checklist [24] was followed.

Recruitment and participants

This study was conducted in a large hospital in Northern Italy, one of the major healthcare institutions actively involved in the Covid-19 response [9]. A theoretical sampling approach was employed, which is a hallmark of GT studies.

Inclusion Criteria:

- Registered nurses (RNs) with at least 20 consecutive days of experience in Covid-19 emergency wards during the pandemic.
- Nurses who actively provided direct patient care in these units.
- Participants with varied years of professional experience to capture perspectives from both junior and senior nurses.
- Nurses who volunteered to participate after being informed about the study's purpose.

Exclusion Criteria:

- Nurses who declined participation or withdrew consent at any stage of the study.
- Nurses with any prior professional or personal relationship with the study authors.

The initial purposive sampling included 15 nurses, selected based on their direct experience in Covid-19 emergency wards. As data collection progressed, an additional 10 nurses were recruited to ensure saturation of emerging categories and refine the theoretical model [25, 26].

Participants were recruited through hospital communications, direct invitations from nursing supervisors, and professional networks. Theoretical sampling allowed for continuous iteration between data collection and analysis, ensuring that participant selection was driven by evolving themes and gaps identified during coding rather than predetermined criteria alone [23].

Data collection

Data were collected between August and November 2020 through semi-structured interviews, each lasting approximately 50 minutes. All interviews were conducted in-person in a private and quiet space within the hospital, separate from the Covid-19





emergency wards, to ensure confidentiality and minimize workplace interruptions. Given the demanding nature of the participants' roles, providing a calm and neutral setting was essential to facilitate open and reflective discussions. All interviews were audio-recorded and transcribed verbatim to ensure accuracy and completeness of data.

All participants were interviewed only once, and interviews were conducted by a single researcher with expertise in qualitative research methods and GT. Before participation, all nurses received detailed information about the study and signed an informed consent form, which included permission for audio recording and the use of anonymized data for research purposes.

A semi-structured interview guide was developed based on the study objectives and existing literature on professional identity and workforce loyalty in crisis settings. The guide included open-ended questions to encourage participants to narrate their experiences and reflections [27]. Key topics explored in the interviews included: initial experience in the Covid-19 emergency ward, adaptation and role perception, interpersonal relationships and teamwork, psychosocial impact and professional growth, loyalty to the Covid-19 ward. The interview guide is detailed in Appendix 1.

Memoing was systematically used throughout data collection and analysis. The researcher-maintained field notes and analytic memos to document emerging themes, reflections, and potential connections between participants' narratives. These memos supported theoretical coding and model development, ensuring the rigor of the GT approach. While direct observation was not used as a primary data collection method, participants frequently reflected on their interactions, team dynamics, and emotional responses, which were captured in the interviews. Observations made during the interview

process (e.g., body language, pauses, emotional expressions) were noted in the memos to enrich data interpretation.

Data analysis

Interviews were transcribed verbatim and analysed concurrently, fostering a collaborative and iterative approach among the research team. Discussions were held until full consensus was reached, ensuring a comprehensive and nuanced interpretation of the data. Data analysis was conducted through three progressively abstractive coding phases using the paradigm scheme of Strauss and Corbin [22, 23].

Each recorded interview was independently transcribed, read and analysed by two researchers enhancing methodological rigor and reducing potential bias. To ensure accuracy, recorded interviews were re-listened to and cross-checked against the transcriptions and field notes.

Data analysis followed the three-stage coding process characteristic of GT, allowing for a systematic and iterative approach to identifying emerging themes and developing a theoretical framework. In the initial coding phase, a line-by-line analysis was performed, where each segment of the text was assigned a specific label and colour, ensuring that participants' experiences were captured with the highest level of accuracy and fidelity. To maintain the authenticity and emotional intensity of the narratives, in-vivo coding was prioritized, allowing the direct use of participants' words rather than paraphrasing, which could risk altering their original meaning. Additionally, observational notes taken during interviews were integrated into the analysis, further enriching the interpretation of verbal data by considering non-verbal cues and contextual elements.

As the process progressed to the focused coding phase, broader conceptual categories began to emerge. At this stage, recurring and conceptually





significant themes were grouped together, allowing for a more structured synthesis of the data. The analysis focused on organizing, refining, and distilling the findings, ensuring that the most relevant aspects of participants' experiences were highlighted. A data-driven approach was fundamental in this phase, guiding the analytical process in a way that remained rooted in the participants' narratives rather than being influenced by preconceived theoretical constructs. The final stage, selective coding, focused on establishing relationships between the conceptual categories, leading to a higher level of theoretical abstraction. This phase was crucial in integrating the findings into a cohesive explanatory model. Ultimately, the process culminated in the identification of a core category, which served as the central theme around which all other categories were interconnected, forming the theoretical foundation of the study.

Rigor

To ensure the rigor and trustworthiness of this study, we followed established qualitative research criteria, including credibility, dependability, confirmability, and transferability. Credibility was achieved through data triangulation, which involved cross-verifying findings from semi-structured interviews, memoing, and team discussions. Additionally, theoretical saturation was ensured by continuing data collection until no new themes emerged. Dependability was maintained by documenting the research process in detail, including the sampling strategy, interview procedures, coding framework, and analytical decisions. A transparent audit trail was kept throughout the study. Confirmability was strengthened by employing memoing during data analysis, allowing the research team to reflect on emerging interpretations while minimizing bias. Additionally, independent coding was performed by two researchers, and discrepancies were discussed until consensus was reached. Transferability was

supported by providing a rich description of the study context, participant characteristics, and recruitment strategy, enabling other researchers to assess the applicability of the findings to similar healthcare settings. Following the COREQ 32-item checklist, we ensured methodological rigor and enhanced the validity of the study results.

Ethical approval

Ethical approval was granted by the Romagna Ethical Committee (approval number 2542). All participants provided written informed consent, including permission for audio recording and anonymous data use.

RESULTS

The participant characteristics are presented in Table 1.

The theoretical model obtained from this study describes the process through which nurses working in Covid-19 wards during the initial emergency developed a sense of loyalty. This process is shaped by the interaction of four different conceptual categories. Among these, the central phenomenon (core category) is "Relationships established" (Figure 1).

As shown in Table 2, the codes that emerged from the analysis of the interviews were classified into sub-themes belonging to four fundamental concepts corresponding to the most relevant factors involved in the process leading up to the loyalty of the nurses on duty in the Covid-19 wards: a) "Awareness of the importance of their role", b) "Confidence acquired", c) "Satisfaction with the work accomplished", proving to be the 'core category' of the identified model. The category "Relationships established" emerged as the core category, encapsulating the essence of the theoretical model and reflecting its central role in the loyalty-building process.



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Table 1. Descriptive analysis of the study sample

Characteristics of Participants	N (%)
Age (mean \pm sd)	41.00 \pm 8.90
Gender	
Male	5 (20)
Working years (means \pm sd)	13.00 \pm 9.32
Educational level (in addition to a nursing bachelor)	
Master	6 (24)
None	17 (68)
Other titles	2 (8)
Nursing educational level *	
Degree	16 (64)
Diploma	2 (8)
Regional college	7 (28)
Setting	
Ward 'A'	10 (40)
Ward 'B'	15 (60)

* The nursing education system in Italy has undergone significant changes over time. Until 1992, nursing training was provided by regional schools, leading to a diploma in professional nursing. In 1992, a university diploma in nursing sciences was introduced, marking a transition towards higher education. Finally, in 2001, the university degree in nursing (Bachelor's degree) became the mandatory qualification for entering the profession. [28].

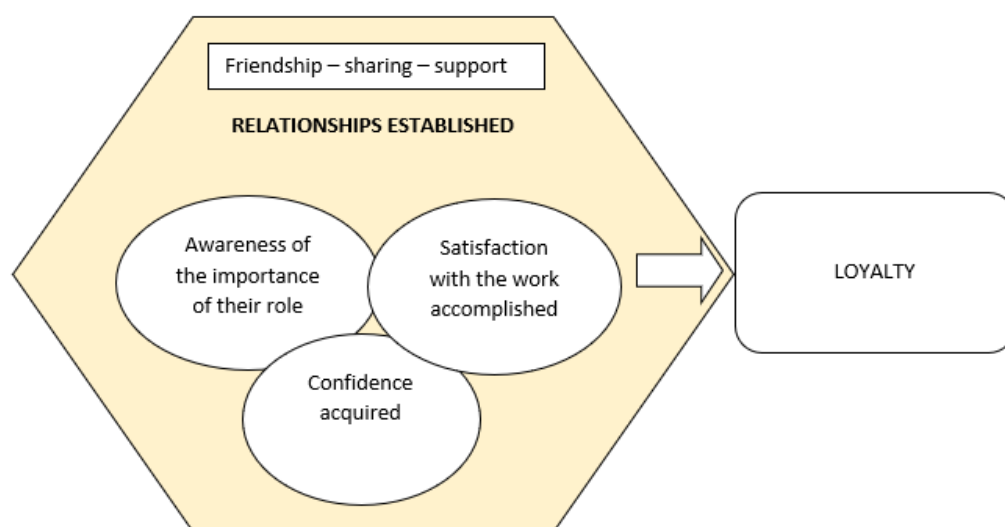


Figure 1. Graphic representation of the theoretical model in which the four conceptual categories are connected each other

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Specifically, the relationships built among colleagues and with patients played a crucial role in fostering a sense of belonging, trust, and mutual support, which in turn reinforced their professional commitment and

resilience. The emotional bonds formed during the shared experience of the emergency strengthened their identification with the team and the workplace, ultimately contributing to their sense of loyalty.

Table 2. The process of abstraction through the three processes of synthesis that details the four categories

Focused coding	Concepts	Model Category
THE CHANGES AND UNCERTAINTIES OF THE NEW SITUATION AND ITS UNKNOWN ASPECTS	Initial disorientation and fear (25 out of 25 respondents)	Awareness of the importance of their role
APPLICATION FOR PLACEMENT IN AN EMERGENCY WARD	Voluntary application for Covid-19 wards (22 out of 25 respondents)	
RECOGNITION OF EMERGENCY AND LOCKDOWN SITUATION	Awareness of global emergency and social isolation (18 out of 25 respondents)	
PSYCHOLOGICAL IMPACT	Emotional response: fear, doubts, and enthusiasm (23 out of 25 respondents)	
AWARENESS OF THE IMPORTANCE OF THEIR CONTRIBUTION DURING THE PANDEMIC	Awareness of professional role and self-limitations (25 out of 25 respondents)	
AWARENESS OF THE PATIENTS' SITUATION AND SENSE OF HELPLESSNESS	Emotional distress due to patient suffering (20 out of 25 respondents)	
MOTIVATION FOR FURTHER EXPERIENCE	Increased motivation for future challenges (25 out of 25 respondents)	Confidence acquired
PERSONAL AND PROFESSIONAL CONFIDENCE	Growth in self-efficacy and resilience (25 out of 25 respondents)	
EXPANDING OF KNOWLEDGE/SKILLS	Acquisition of advanced clinical skills (21 out of 25 respondents)	
SELF-ESTEEM AND SATISFACTION WITH ROLE PLAYED	Professional pride and job satisfaction (24 out of 25 respondents)	Satisfaction with work accomplished
CARE METHODOLOGY	Shift from relational to task-based care (18 out of 25 respondents)	
COMPARISON TO PREVIOUS WORKPLACES	Comparison with pre-COVID work settings (20 out of 25 respondents)	
PROFESSIONAL RELATIONSHIPS IN COVID WARDS	Strengthened teamwork and peer support (25 out of 25 respondents)	Relationships established (core category)
PATIENT RELATIONSHIPS	Evolution of patient interaction and frustration (20 out of 25 respondents)	
EMOTIONAL REACTIONS ON CLOSURE OF WARDS AT THE END OF THE EMERGENCY	Mixed emotions: relief, nostalgia, and loss (24 out of 25 respondents)	

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Awareness of the importance of their role

The process originates from this conceptual category. The analysis of the respondents' contributions demonstrates that many nurses applied to be transferred to the emergency ward, driven by a sense of duty to contribute during the crisis and provide their professional support.

...As a professional I felt the need to, as it involved the field of my studies and my work experience, participate in this experience... (int. 13)

...I decided to work in the covid unit, so I was proactive and positive regarding it... (Int. 3)

Even those who had not directly applied for placement/transfer felt it their duty to collaborate, feeling the moral and professional responsibility of their role. They wanted to make their contribution to the fight against the pandemic.

... I felt... happy in the beginning, I knew that I could make a difference... (Int. 15)

... I wanted to be involved, at that moment I felt the need to give my contribution, I had a feeling... (Int. 17)

The totally different background and experience, in addition to the different care approaches in the nurses' previous positions, meant their new placement was not easy from a psychological point of view; they had feelings of hesitation, apprehension and bewilderment, fear and uncertainty of the new situation they would be facing.

...When I received that call, some concerns started arising... (Int. 20)

...because I was looking at how the situation was being handled in this critical condition with a lot of fear... (Int. 2)

The promptness and rapidity of the placements gave the nurse little time to process the situation and fully realise the importance of their forthcoming task.

...It was morning... and not even 2 hours after I was called to take a shift in the afternoon, I accepted it and I was catapulted in it... (Int. 7)

During the early stages of their placement, there was a sense of alienation towards what should have been their professional contribution. Care methodology was totally different from the actual care role and this unexpected impact prolonged the feeling of uncertainty.

... in this reality where we didn't know who or what we were fighting against...and we also didn't know how to fight it... (Int. 3)

Added to this was the frustration of the nurses in being unable to maintain a relationship with their patients, who remained isolated, alone in the rooms in which they were obliged to stay; the nurses felt powerless and perceived that their caring role had partially failed since a method to provide safe assistance was yet unknown.

...the patients were lonely, I mean the fact that they could only see us, and that when they would see us our faces were covered...this aspect maybe made me feel bad... especially seeing them dying abandon by themselves... (Int. 9)

...It was difficult for me not being able to do what I wanted to do in the way that I work... (Int. 23)

Subsequently, nurses finally rediscovered the innermost sense of their mission and the ability to establish more complete care relationships with patients, leading to reacquired job satisfaction.

...When the tablets arrived, I was reborn, I could stop wasting my time on calling the families even if I understood the importance of that... (Int. 19)

Confidence acquired

The concatenation of the awareness of the importance of the role played in this emergency, the results obtained, but above all, the result of the





relationships established among healthcare professionals, have given them confidence, both professional, through the expansion of specific knowledge and techniques, and personal, such as the acquisition of confidence in facing situations that until recently they did not feel able to deal with.

...I was telling myself... "I can do it", this brought out of me something new, from a professional and humanistic view point, that I didn't see for a long time...when you start this routine, some energies, that were sopite wake up and you almost forget that you have them...(Int. 19)

The increased perception of individual and psychological growth necessary to deal with situations previously considered unfeasible, is evident; a human enrichment from many points of view.

...for me, it was a challenge...before this, I had a lot of uncertainties... but after this, it brought back in me the willingness to study... for me it was a good stimulus...(Int. 9)

...now I feel more confident and I also I gained more confidence from a job perspective... (Int.11)

...It enriched me from a professional aspect, because I also learned new things that I have never done before... (Int. 24)

Satisfaction with the work accomplished

The professional experience gained in these contexts defined and aroused positive emotions evoking a strong sense of achievement.

...I felt good, I felt fulfil from what I was doing... (Int. 5)

...I can state now that it was a positive experience... for how we faced it... (Int.14)

A sense of fulfilment and pride combined with the feeling of being part of a team working together for a project of fundamental importance led to the desire to further the experience, both professionally and personally. These aspects have created promptness in facing new health emergencies with determination

and enthusiasm; the lack of which had previously held them back.

...I would be happy to do it again with the team that I met it would be amazing... (Int. 10)

...feeling part of something big and being able to make a difference in a positive way, it was incredible... (Int. 22)

Hesitancy and melancholy in leaving their new ward at the end of the emergency.

...I was sad to leave the group as I felt a I was at home with them, I felt satisfied ... (Int.5)

...I was sad as I realised that I wasn't going to meet my colleagues anymore after sharing so many experiences... (Int. 20)

Relationships established

The relationships established among healthcare professionals during the crisis proved not only to be effective and efficient in fostering rapid interactions among individuals who were initially strangers, but also to be instrumental in creating a sense of belonging, trust, and mutual support that transcended traditional team formation. These dynamics went well beyond a simple formation of a patient-centered team. Instead, they facilitated a deep-seated loyalty rooted in emotional engagement, shared purpose, and an extraordinary collaborative spirit.

Data indicate that these relationships were characterized by feelings of familiarity, complicity and empathy, which allowed the professionals to overcome common fears and challenges through collective strength. Participants reflected:

... I think that all of us were on the same boat and your colleagues are like a family, or even your psychologist and they can understand what you go through...(Int. 7)

...I imagine it as if your arm was the extension of someone else, with everyone, we are all helped each other... (Int. 8)





This emergent relational framework not only promoted operational collaboration but also established robust emotional bonds that were essential for effectively addressing the crisis. The depth of these bonds is further highlighted by the poignant reflections on the closure of the Covid-19 ward, where participants expressed a bittersweet mixture of relief and sorrow at the dissolution of their uniquely bonded group. For example:

... regarding this experience, I found a second family... (Int. 21)

... the support from one another gave us the strength to continue... (Int. 5)

From the outset, the environment promoted a dynamic in which traditional roles blurred, *... in that moment we were just people...there was no doctor or nurse, we were exactly all on the same level ... (Int. 3)*, underscoring that the established relationships transcended conventional professional boundaries and fostered a collective identity beyond formal roles.

Initially, the caregivers' relationships with patients evoked profound emotions, such as helplessness and sorrow, yet these encounters also reinforced a reawakened sense of care, the very essence of their professional commitment. While these relationships carried an inherent emotional burden, they also underscored the intrinsic connection between professional duty and personal engagement during a crisis. This duality, although leaving indelible psychological marks, underlined the intrinsic link between professional duty and the personal connections forged during the crisis:

... I felt like crying many times seeing the patients alone by themselves, without their families... (Int. 13)

The strength of these relationships lies in their multifaceted nature, encompassing both the structural aspects of team formation and the emotional, loyalty-enhancing bonds that emerged in an extraordinary

context. The experience, although intense and transient, imparted a lasting sense of camaraderie and resilience among colleagues:

...I had a strong feeling of melancholy because of how intense the experience was... (Int. 15)

...I felt sorry, a veil of melancholy, because we created an amazing group and I felt sorry to leave it... (Int. 18)

DISCUSSION

This study highlights how nurses' experiences in Covid-19 emergency wards transformed initial stress into professional confidence and deepened workplace relationships, ultimately fostering loyalty. Unlike previous studies emphasizing burnout and distress [12-16, 29-35], our findings reveal a process of positive psychosocial transformations within emergency settings. The study identified four interrelated themes that contributed to nurses' loyalty to Covid-19 emergency wards: awareness of the importance of their role, confidence acquired, satisfaction with the work accomplished, and relationships established (core category).

Nurses recognized their critical role in patient care during the pandemic, with many actively seeking placement in Covid-19 wards out of a strong sense of duty and professional responsibility. This aligns with previous studies indicating that frontline nurses perceive their work as a moral obligation, driven by ethical and humanitarian values [35, 36]. However, unlike findings that associate this moral duty predominantly with psychological distress and ethical dilemmas [17, 35-40], our study suggests that recognizing the significance of their role contributed to resilience and professional identity reinforcement over time.

Nurses reported significant personal and professional growth, acquiring new skills and developing resilience in high-pressure environments. This is consistent with studies on post-traumatic growth, which suggest that





extreme work conditions can foster increased self-efficacy and adaptability (*manuscript submitted*). Our findings indicate that confidence was not immediate but evolved progressively, particularly as nurses overcame initial uncertainty and adapted to emergency protocols. Unlike previous studies that emphasize the overwhelming burden and role strain of frontline nurses [41, 42], our results suggest that skill acquisition and experiential learning contributed to increased professional self-assurance over time.

Despite the high levels of stress and emotional exhaustion initially reported, many nurses derived deep fulfillment from their contributions, reinforcing their professional identity. This finding is in line with studies on compassion satisfaction, which highlight how meaningful patient interactions and the perceived impact of one's work can mitigate burnout [20, 42]. However, our study extends these findings by demonstrating that satisfaction was closely linked to the relational and organizational context rather than being an isolated psychological phenomenon. This suggests that fostering a sense of purpose within healthcare teams can serve as a protective factor against long-term emotional exhaustion and disengagement.

Strong bonds among healthcare teams emerged as the core category, shaping nurses' professional loyalty. The formation of trust-based relationships within emergency teams fostered collaboration, emotional support, and a shared sense of purpose, anchoring nurses' commitment to their work settings. Previous research has highlighted the importance of peer support and teamwork in mitigating occupational stress [42, 43], yet our study expands on this by showing that these relationships were not only a coping mechanism but also a central factor in professional identity development and workplace attachment. The intensity of shared experiences and the reliance on colleagues for emotional and technical

support played a crucial role in shaping nurses' long-term perceptions of their work environment.

Our findings suggest a progressive adaptation model, where initial stress and anxiety gradually transform into professional fulfillment and loyalty through the mediating role of workplace relationships. While previous studies have primarily focused on burnout and workforce attrition [36, 41, 42] (*manuscript submitted*), our model introduces a more nuanced perspective, emphasizing the potential for positive adaptation within high-stress healthcare environments. This supports theories on resilience and professional commitment, suggesting that psychosocial resources, such as workplace relationships and a sense of purpose, are crucial in shaping nurses' long-term career trajectories.

Understanding this loyalty-building process is crucial for workforce planning and retention strategies, particularly in the context of future health crises requiring rapid deployment. From a managerial perspective, recognizing the psychological and emotional dimensions of nurses' attachment to emergency settings can inform policies aimed at improving staff retention, job satisfaction, and overall workforce resilience.

To support nurses transitioning back to their original wards, hospital administrators should consider implementing: structured debriefing sessions to facilitate emotional processing; peer support programs to maintain professional bonds beyond emergency settings; targeted professional development initiatives that acknowledge and leverage crisis-acquired skills; psychological support and mentorship to ensure career progression aligns with the experiences gained in emergency settings. By integrating these insights into workforce management, healthcare institutions can optimize team cohesion, reduce turnover, and enhance nursing staff preparedness for future health emergencies. The





findings of this study provide a foundation for developing evidence-based strategies that balance operational efficiency with the well-being and professional fulfillment of healthcare workers.

Strengths and limitations of the study

This study has several strengths. To the best of our knowledge, it is one of the first qualitative studies that examines the psychosocial process of the development of nurses' reticence to return to their ward of origin within direct care settings in Italy. We employed rigorous qualitative research methods [23, 26, 27] and adhered to established standards for qualitative research [24], using techniques to enhance the study's rigor [25]. The data were transcribed verbatim and meticulously verified through double-checking of the audio recordings. Independent coding by two authors ensured that all data were given equal consideration, and reanalysis of the original data set after coding allowed for thorough collation of all coded items and careful review of themes.

Some limitations need to be acknowledged, which may have influenced the interpretation of the findings. Despite the rigorous methodologies employed in the qualitative analysis, some degree of subjectivity in data interpretation remains possible. This is particularly true given that all researchers shared a nursing background, which may have subtly shaped their perspectives during the analytical process.

Relevance for clinical practice

Our findings may be useful as valuable guide for managerial decision-making in the planning, organisation and monitoring of both existing healthcare wards and future emergency units that may need to be established. This study contributes to the development of a theoretical model that provides an initial insight into the phenomenon of nurse loyalty to the organization, an area that has received limited

scientific attention. Furthermore, it lays a robust basis for further research, encouraging further exploration and deeper investigation into this critical aspect of healthcare workforce dynamics.

CONCLUSION

In conclusion, this study developed a theoretical model explaining how nurses working in Covid-19 emergency wards cultivated a sense of loyalty through professional awareness, confidence, job satisfaction, and relationships. These findings provide new insights into the psychosocial dynamics shaping nurses' attachment to crisis settings, emphasizing the importance of fostering a supportive work environment during and after emergencies.

From a practical perspective, these results have direct implications for nursing leadership and emergency ward management. Understanding the mechanisms that influence nurses' loyalty can help hospital administrators develop targeted strategies to enhance workplace retention, professional fulfillment, and team cohesion. For instance, fostering strong peer relationships, implementing structured support programs, and ensuring clear career progression pathways could mitigate the risk of nurse attrition following high-intensity deployments. Furthermore, integrating mentorship initiatives and psychosocial support systems can strengthen team dynamics and reinforce nurses' long-term commitment to crisis-response units.

Beyond these immediate practical applications, this study contributes to the broader discourse on workforce resilience and crisis adaptation in healthcare. Given the emerging nature of this phenomenon, further research is needed to explore how nurses' sense of loyalty evolves over time, whether it impacts long-term career trajectories and retention rates, and how these dynamics differ across various healthcare systems and cultural contexts. A more in-depth understanding of these factors will be





crucial for developing sustainable workforce policies in preparation for future health crises.

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CONFLICT OF INTEREST

The authors have no relevant financial or non-financial interests to disclose.

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ETHICS STATEMENT

Ethical approval was granted by the Romagna Ethical Committee (approval number 2542).

DATA AVAILABILITY STATEMENT

All data presented in this study, not yet publicly archived, shall be made available through the corresponding author on request.

AUTHOR CONTRIBUTIONS

Lara Pierboni: Conceptualization, Methodology, Data Curation, Formal analysis, Investigation, Writing - Original Draft, Writing - Review & Editing, Visualization, Project administration

Domenica Gazineo: Validation, Data Curation, Writing - Review & Editing, Visualization, Project administration.

Riccardo Triani: Term, Validation, Data Curation.

Pamela Bagli: Validation, Investigation, Resources.

Lea Godino: Writing - Validation, Review & Editing, Visualization, Supervision.

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APPENDICES

Appendix 1. Semi-Structured Interview Guide

Introduction to the Interview

In this initial phase, the Interviewer and the Observer introduce themselves, welcome the interviewee, and create a comfortable environment by expressing gratitude for their participation and offering to provide any necessary clarifications.

Example: “*Thank you for your availability...*”, “*If you have any doubts, please feel free to ask...*”

The Interviewer then kindly asks the interviewee to switch off or mute their mobile phone.

Opening Question

Reflecting on this work experience, in which you were placed or suddenly assigned, could you describe your journey from the beginning to the end, highlighting the key moments or significant aspects for you?

Social Interactions Area

Can you describe your experience in interacting with other professionals (doctors, coordinators, and other healthcare staff)?

Emotions and Social Interactions Area

Can you share how you felt before starting this experience?

Can you also describe how you feel now that you have been immersed in this new reality for some time?

What has working in these units meant to you?

(Reminder for the Interviewer: Pay attention to the words and symbols the interviewee uses to describe their experience, whether they feel satisfied or fulfilled. Also, note any associations or comparisons mentioned.)

Behavioral Area

What have you learned from this experience?

If a similar opportunity arose in the future, would you want to be part of a team like this again? (Reminder for the Interviewer: Ensure that the reasoning behind their response is clearly expressed.)

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What motivates you to stay in this unit rather than return to your original unit?

(Reminder for the Interviewer: Pay close attention to specific terms used by the interviewee that may serve as reference points for a comprehensive description.)

Final Question

Is there anything you would like to add that I have not asked?

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