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Experiences of healthcare providers from a working week during the first wave of the COVID-19 outbreak

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Abstract. *Background and aim of the work*: The delivery of care to patients with COVID-19 enhanced many psychological issues among healthcare workers (HCWs), exacerbating the risk of burnout and compromising the efficacy and quality of services provided to patients. In this context, the peculiarities regarding professional roles in delivering care to patients with COVID-19 might reflect daily lived experiences that could impact psychological outcomes in specific professional groups. However, daily lived experiences considering different groups of HCWs have been poorly investigated, especially with a longitudinal qualitative study. Accordingly, our study aims firstly to longitudinally explore perceptions and experiences of HCWs about their daily working life during the initial COVID-19 outbreak, highlighting the specific lived experiences of physicians, nurses, radiology technicians, and healthcare assistants. *Methods*: A longitudinal qualitative content analysis was conducted to analyse the comments and quotations made on a daily diary lasting seven days by physicians, nurses, radiology technicians, and healthcare assistants during the first wave of the COVID-19 outbreak. According to Elo and Kyngäs recommendation, the data analysis process was developed in three main phases: preparation, organising, and reporting. *Results*: Four main generic categories emerged by data analysis: 'Clinical practice in COVID-19 patients'; 'The importance of relationship'; 'Navigating by sight'; and 'Good always pays off'. Several differences emerged from the sentences of the HCWs, which require further investigation. *Conclusions*: Understanding the profession-specific experiences of the involved HCWs in facing the challenges of the COVID-19 pandemic is key for boosting reflections, research, and actions to adequately support each professional group. *Keywords*: COVID-19 outbreak; Healthcare workers; Perceptions and experiences; Qualitative content analysis

Key words: COVID-19, mental health, stigma

Introduction

The COVID-19 pandemic is currently a worldwide public health emergency (1), with serious consequences for the global population (2,3), and especially on the health status of healthcare workers (HCWs). Providing care to patients with COVID-19 has increased levels of anxiety, depression, stress (4), and sleep problems (5), consequently exacerbating the risk of burnout (6,7) and compromising the efficacy

and quality of care (8). Previous qualitative research found that the work against the COVID-19 pandemic drained HCWs physically and emotionally (9), causing significant psychological distress (10). For instance, HCWs experienced a fear of being infected, exacerbated by the lack of knowledge of the virus and COVID-19 disease and the feeling of vulnerability due to insufficient availability of personal protective equipment (11).

In this regard, the understanding of peculiarities regarding professional roles in dealing with the challenges brought by managing patients with COVID-19 could be strategic in framing a precise knowledge regarding HCWs' psychological issues, acknowledging the potential role of profession-specific patterns in determining negative mental health outcomes due to the plausible role of specific profession-related burdens (12,13): physicians, nurses, technicians, and healthcare assistants perform different daily tasks and activities in the care pathways to COVID-19 patients, having specific responsibilities. Radiology technicians, for example, have advanced competence in the specific radiology sector (14), physicians guide the entire diagnosis and therapy pathway (15), the nursing role includes the total care of patient needs (16).

As a result, the uniqueness of HCWs' competencies may influence their experience and psychosocial outcomes while caring for patients with COVID-19, but the literature available is scarce. Some recent studies that had stratification their professional role were focused especially on mental health outcomes among HCWs in the front lines of COVID-19 and using quantitative methods. (17,18), For instance, Matsuo and colleagues (19) investigated burnout during the COVID-19 pandemic by comparing job categories and their associated risk factors, discovering a higher prevalence of burnout among non-physicians associated with lower dimensions of control (skill discretion and decision authority) (19). As a result, additional insights to improve the available knowledge on these aspects could be strategic in developing tailored support paths and interventions that match the different specific needs of each professional category.

To our knowledge, no longitudinal qualitative studies have been conducted to investigate the lived experiences of the various involved professions in dealing with the challenges brought by the COVID-19 pandemic. Qualitative research could open a scenario that is still little explored, providing initial knowledge on the topic. This approach may help provide insights to decision-makers and researchers as its findings might be insightful to the larger multi-professional community of public health specialists (20).

Material and methods

Aims

Therefore, this study aims firstly to longitudinally explore perceptions and experiences of HCWs about their daily working life during the initial COVID-19 outbreak. Secondly, the study highlights perceptions and experiences peculiar to physicians, nurses, radiology technicians, and healthcare assistants.

Study design

A longitudinal qualitative content analysis was conducted (21) to analyse the comments and quotations made on a daily diary lasting seven days by physicians, nurses, radiology technicians, and healthcare assistants during the first wave of the COVID-19 outbreak.

Qualitative content analysis, in particular, is one of the several research methods used to analyse qualitative data (22). It precisely aims to achieve a condensed and broad description of the phenomenon, and the analytical process outcomes are concepts or categories describing the phenomenon (21). Because knowledge regarding the profession-specific burden in dealing with the COVID-19 demands is still limited, an inductive approach was used within the qualitative content analysis method to perform data analysis and develop the categories reflecting the meaning of the explored experiences and perceptions. The choice of the inductive data analysis allows the authors to move from the specific to the general, observe particular instances, and then combine them into a larger whole or general statements to be informative to the broader multi-professional arena (23).

Participants and data collection

The sampling procedure was designed to collect HCWs' perceptions and experiences during the first wave of the COVID-19 pandemic (March-April 2020) in three main research Hospitals in northern Italy by filling out a diary with free thoughts daily for seven days. Two sampling managers (GV, FD) identified among authors for their experience in qualitative research, purposefully recruited participants using the following inclusion criteria: (a) to be a physician, nurse, radiology technician, or healthcare assistant, and (b) to care patients affected by COVID-19 infections, (c) at least for a month in the first wave of the COVID-19 pandemic. Additionally, personal motivation and the willingness to be enrolled in the study were crucial to defining the final sample, as participants had to be motivated to fill the diary daily.

Overall, 76 HCWs were invited to participate in this study, but 73 were accepted and enrolled in data collection. After identifying eligible participants, two sampling managers explained the study's purpose, the confidentiality disclosure, the data collection, and the analytical procedure for the daily diary compiled during the seven days of data collection. In particular, after signing the informed consent, all participants were given a seven-day-daily diary, in which the HCWs must describe their thoughts and reflections at the end of each shift for at least seven shifts. HWCs' sociodemographic and professional characteristics were also collected to characterize the sample. After signing the informed consent form, each participant was given an ID code to guarantee their anonymity.

Data analysis process

According to Elo and Kyngäs recommendation (21,24), the qualitative content analysis was developed in three main phases (i.e., preparation, organising, and reporting) to classify the main words or sentences of the seven consecutive days diaries into much smaller content categories (25). After the data collection, two researchers (FD, GV) proceeded independently with the preparation phase (phase one) to provide an initial framing of the sense of the data, selecting the unit of analysis through the creations of open coding, categories, and abstraction. Disagreements were solved by a third researcher (DFM) in all stages of the data analysis process, using the triangulation strategy. Notably, the goal of the analytic process in this phase was to obtain a sense of the whole (21).

The repeated readings from the daily diaries were guided by the questions 'who is telling?', 'where is this happening?', 'when did it happen?', 'what is happening?'; 'why?' (26). This approach allowed researchers to immerse themselves in the data and become intimately acquainted with it (27).

The second phase (i.e., organising) aimed to organise the qualitative data through open coding and creating categories (21). This phase provided a means of describing the phenomenon in order to increase understanding knowledge generation. Content-characteristic words, in particular, guided the development of each category. Similar events (i.e., sub-categories) were then grouped into categories, which were then further subdivided into main categories and consequently grouped into main categories (21).

Finally, in the reporting phase, researchers used an inductive approach to describe the results by the content of the categories describing the HCWs' perceptions and experiences about their daily working life during the first wave of the COVID-19 outbreak in Italy (21) (Figure 1). All phases of the data analysis process were performed manually by the researchers, without the use of electronic software. The size of the project, the available funds and time, and the inclination and expertise of the researchers were the reasons underpinning the choice of the manual methods to code data depended (28).

Trustworthiness

Our qualitative content analysis has been guided by the elements for determining the trustworthiness of research: credibility, transferability, dependability, confirmability, and authenticity (29). Researchers ensured trustworthiness at each stage of the three-phase data analysis process regarding the qualitative content analysis (21). During the planning stages, trustworthiness guided the data collection method, sampling strategy, and selection of appropriate analysis units. It was then necessary to develop appropriate categories

and thorough interpretation to ensure trustworthiness in the phase of the organisation. Finally, the pillars of reporting trustworthiness have been identified as transferability, conformability, and credibility. As a result, researchers had to report results systematically and meticulously. In the current study, we followed the available checklists to improve the trustworthiness of this content analysis study at each stage.

Ethical consideration

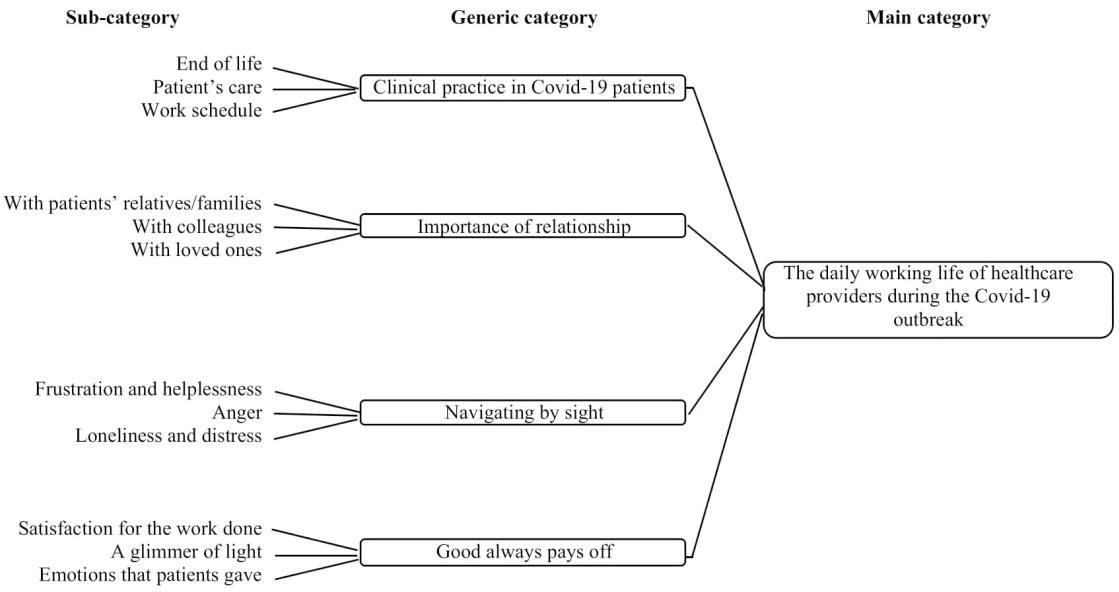
The institutional review board of the hospitals in which participants were enrolled approved the study (IRB approval number 37, 20/04/2020). The study was conducted following the Declaration of Helsinki. All participants were informed about the study aims and procedures as well as their right to participate and withdraw from the study at any time. Participants provided informed consent and a privacy statement. We also provided each participant with a unique identification code to guarantee data protection and confidentiality. We also assured the publication of studies in aggregate form to prevent the identification of each patient.

Findings

73 HCWs were enrolled in the study, but only 70 of them had completed the seven day-daily diaries: of these, ten were physicians, 29 nurses, 21 radiology technicians, and ten healthcare assistants. Most of the sample was female (n=40; 57%), with an average age of 38.68 years (range 24-58), living alone and without offspring (n=44; 63%). The working experience ranged from 1 to 39, with an average of 13.64. Most of the HCWs worked in the non-intensive area before the pandemic (n=50; 72%). After hospital reshaping caused by COVID-19 pandemic, some HCWs were assigned to COVID-19 intensive care unit (n=32; 46%) or COVID-19 non-intensive unit (n=38; 54%).

The open coding process of the HCWs' words brought out twelve transcripts, named "sub-categories" and subsequently combined in four "generic categories". Additionally, the research identified each involved profession in the study during the analysis process to highlight the profession-specific perceptions and experiences in caring for COVID-19 patients. Figure 1 describes the hierarchical structure that emerged at the end of data analysis, presenting the

Figure 1. The abstraction process of the results of qualitative content analysis



main categories arising from the daily working life of HCWs during the first COVID-19 outbreak in Italy. Table 1 presents examples of quotations for each category and each professional group.

First generic categories: Clinical practice in COVID-19 patients

The first 'Generic category' refers to HCWs' daily clinical practice in caring for COVID-19 patients. Three sub-categories were distinguished: (a) End of Life, (b) Patient Care, and (c) Rhythm of work. The care for COVID-19 patients intensively involves different professional categories, for which a multidimensional approach is a need and essential component of the care process. Physicians, nurses, radiology technicians, and healthcare assistants are dedicated to specific daily clinical activities. The daily diary analysis could bring out the most important and emotionally richer aspects of daily activities among the enrolled HCWs.

End of Life. HCWs have often delivered care to COVID-19 patients at the end of their life. End-of-life care or palliative care are components of the HCWs' daily activities. However, these aspects seemed to have a new meaning during the COVID-19 era, with an extraordinary impact on the HCWs' experiences. Nurses and healthcare assistants seem to be the two most affected by this situation, while technicians do not consider it. "*[…] unfortunately we still had deaths today. […] The worst thing is that they die alone without the affection of their families and we are the last people they see"* (017_D_healthcare assistant).

Patient's care. The seven day-daily diaries collected the set of clinical activities performed during the COVID-19 outbreak. Healthcare emergency and care priority change had profoundly modified the daily routine, recognising the need to meet the basic and physiological needs of patients with COVID-19. Thus, HWCs had to remodel their routine work to deliver tailored care, especially described by nurses and healthcare assistants. *"I focused more on the patient's need when she was collaborative and wake. I wanted her to feel more good-looking, I took care of her (washed her hair, cleaned her up), and this made me feel better and proud of me"* (006_D _nurse).

Work schedule. The high clinical complexity of COVID-19 patients inevitably leads the HCWs to face intense rhythms of work and high care intensity. This sub-category depicted experiences for all the professional groups, underlining descriptions of work rhythms and their associated difficulties. *"We have to do, do do. Working so much and dressed up in this way, with a lot of new colleagues: it is so unreal!"* (008_R _nurse).

Second generic categories: Importance of relationship

The second 'Generic category' focuses on the HCWs' relationships with patients' families, colleagues, and their own families. Relationships were considered one of the pillars for phycology wellbeing, providing life energy that nurtures HCWs from within. This aspect was also important in working relationships. Thus, the role of relationships during the COVID-19 pandemic amplified the required energy for delivering care. The diversity of comments that emerged between the different professions was fascinating: physicians did not describe the relationship, little sentences of radiology technicians appeared in the diaries, while relationships among nurses and healthcare assistants appeared to be reported as prevalent sentences.

With patients' families. Nurses described in detail the experience related to relationships between patients and their family members. In contrast, this sub-category did not appear in the descriptions of technicians and healthcare assistants. The relationships with the patients' families seemed to track the daily work of nurses significantly. It was clear that the nursing staff and caring for the patients' needs also took care of involved families. *"[...] It was touching to see a man of almost 70 years old crying like a child for having seen his wife again from a glass after almost a month! I felt like I was part of the story, part of that patient's journey... as if I had "detached" a piece of his life to attach it to mine"* (024_R_nurse).

With colleagues. HCWs often described the relationship with their colleagues, even describing situations of conflict or great cooperation. *"The time that is lost in this hospital on useless things is much. It is always*

Table 1. Categories, subcategories and quotetions among healthcare workers

	1st category			2nd category			3rd category			4st category		
	Clinical Practice in COVID-19 Patients			Importance of Relationship			Navigating by Sight			Good Always Pays Off		
	End of life	**Patient's care**	**Work schedule**	**With patients' relatives/ families**	**With colleagues**	**With loved ones**	**Frustration and helplessness**	**Anger**	**Loneliness and distress**	**Satisfaction for the work done**	**A glimmer of light**	**The given emotions by patients**
Physicians	A patient is dead (004_G)		In this hospital lot of time is wasted on meaningless things, and it is hard to get help or make yourself understood when something important occurs (020_D)		The time that is lost in this hospital on useless things is much. It is always difficult to be understood and to obtain the necessary help (020_D)		Difficulty in accepting what I cannot change. (002_G) Feeling of inadequacy for the very stressful job we are doing. (002_G)	Anger because the general thought is that nothing has ever happened, and I keep thinking about the families of patients who didn't make it (019_D)	This hospital could be managed better if people listened more. (020_D) I wonder why we are now back to browsing on sight and not being heard anymore (020_D) Fear that the situation could still worsen as in recent days. (002_G)	I turn around and see what a great job we have done (020_D)	I felt a little relieved that there were fewer hospitalizations and fewer serious conditions. (019_D)	
Nurses	It is a word of consolation, a look, the corroboration that he is dead without any suffering, I want to give dignity to the act of dying (009_R) A patient who was likely to be dismissed yesterday, died today and I had this thought for the entire day (0161_D) I dealt with the death of a patient of 54 years who had non-comorbidity but obesity. We stayed with him until he passed away. (023_D) One of the patients I have been taking in charge is dying; he had already undergone an urgency but had recovered later: I came to his room at different times to hold his hands so that he would not be dying alone. 034_R	This morning I was welcomed with a ringing "Goodmorning!" It was a patient I had been following in the last weeks [...]. For me, it was a boost of good humour and motivated me to keep going (022_R) I almost cried when I helped my colleagues bring a patient back to her bed, and she was coming from the ICU as well [...] she kept saying:" You see, I made it, I made it!" You cannot be indifferent to such things. 034_R I focused more on the patient's needs when she was collaborative and woke. I wanted her to feel more good-looking. I took care of her (washed her hair, cleaned her up), and this made me feel better and proud of myself (006_D)	Personally, the job is less motivating from the health caring perspective, and it is physically and mentally burdensome: there are patients with dramatic stories (034_R) Today for medical organizational issues, we have worked tirelessly, like an assembly line (034_R) Do, do do. Working so much and dressed up in this way, with a lot of new colleagues: it is so surreal. (008_R)	An elderly patient, who had been admitted to us for a long time, wanted to hear from her daughter, so I had her make the video call with our ward tablets (018_D) [...] It was touching to see a man of almost 70 years old crying like a child for having seen his wife again from a glass after almost a month! I felt like I was part of the story, part of that patient's journey...as if I had "detached" a piece of his life to attach it to mine. (024_R)	Having coworkers like my shift workers is great; today, they made me laugh, and I made them laugh, we supported each other, we even "argued" constructively; it almost felt like a normal day at work. I thought, "a laugh destroys the covid". (007_G) Unfortunately, a situation occurred where one of the two co-workers close to me did not lift a finger to help me when I clearly needed it. (034_R) Today was a moderately quiet day in ICU. This made the team focus on being together and joking around, on talking more with awake patients. I enjoyed observing them. It was interesting to see how they wanted to be together, get to know each other, and share.	I get home, try to rest a bit after a very tiring day, and my mind goes to my parents, far away from me. These days they haven't shown their worries and anxieties, but I could only imagine their feelings. So I always try to keep a strong and calm tone of voice when I am on the phone, I try to find the right words to make them understand that everything is fine and that days go by peacefully, especially with them, but I try not to give up and I try to make them feel reassured as much as possible (024_R) I was filled with feelings of gratitude to my loved ones for the support they always give me.(020_R)	What have so many years of work been worth? What was all my experience for? (007_G) I felt whipped today as if my supervisors did not hear me. I thought several times today that I was no longer able to handle this situation and this pressure. I haven't had that in years, but I had anxiety about coming to work. (017_G)	I feel angry at the management of patients with COVID and other end-stage pathologies. These are people who needed customized management in the wards that should have been created and shared by the caregivers of the COVID department. (022_R)	Anguish, I had the feeling of having much less patience. I look forward to the end of the workday. (006_D) Today was a very busy day. [...]. From a human point of view, very heartbreaking. (014_D)	The hope, however, of having made the patient's life better, even if slightly, is always alive. (008_G) After 54 days of hospitalization, we accompanied a patient out of the ward in a wheelchair. He, at the sight of the sunlight, was moved to the point of crying with happiness. (012_R)	Today we glimpse a very small glimmer of light, finally good news, after about twenty days, one of the patients is leaving. (018_D It was a very quiet day. We feel that by now, the pressure on the hospital and on our department has significantly decreased. (002_R)) Today, however, I received a call, I was informed that my work in the covid department is finished.	I felt joy when a patient was able to get out of bed and was able to greet her family by looking out the window. (022_R) So much joy for a patient who was discharged after so much suffering (026_D) Even today was an emotionally strong and heartfelt day. [..] I asked her how she recognized me.

	[...] A mother of 85 years found the telephone number of the ward where her son (60 years with COVID) had been admitted; she called to ask if the nurse on duty could have said hello to her son…. But her son died the day after… many of these moments stay forever in your memory (014_D)	When the pandemic spread, I never doubted my decision to stay in the frontline, taking care of the most vulnerable and helping them relieve their pain. The loveliness of these patients was the worst thing. (014_D) Everything was going well. The patient at bed n. 8 was accompanied for a walk in the fresh air; the equestrian center La Cascina is really a beautiful sight. He was happy but also scared. It was a big consolation for us because he was going to be another patient dismissed. (009_R)	I felt impelled to know the feature of the ward (assistance and organizational) to be able to manage them and anticipate their needs. (016_R)	A 47-year-old male patient was admitted to the ICU. When he arrived, he was already intubated and sedated. I was struck by the fact that in evaluating him, I found a drawing of his daughter under his sheet that said, "come back soon, daddy". (008_D)	I hope I always remember how important these moments are for a group as well. I feel peaceful! (001_R) The working group, nurses and support staff is great. They are all very close-knit, I must recognize the great ability to adapt: I expected myself to face conflict [...] but no, we work side by side, we call each other, we look for each other, there is only one motto "one for all, all for one". (009_R)	I come home from a gruelling night shift...you feel like talking to someone... but you feel the need to share your night shift with someone...good thing I come home to my house where my husband and two kids are waiting for me, and they are there to listen to me. (014_D)	The feeling of not being able to positively impact the patient's outcome through my work is an overwhelming feeling for me and weighs on me being at work. (023_D)			We managed to extubate the first patient hospitalized in the COVID ICU. Although the patient was slightly sedated, I saw happiness and gratitude in her eyes. (008_D)	I felt immense joy, I realized that something was really changing, that the light at the end of the tunnel was beginning to glimpse. (018_D)	Her answer surprised me as she told me that she recognizes us from her eyes, from the gaze of each of us. At that moment, I stopped reflecting and I realized that among the frenzy, suffering and worries of these patients, they managed to go beyond that gown and mask (018_D)
Radiology technicians			I was working on the ER, and I noticed that the majority of the cases were classified on yellow/green codes; this means that the ER is being used more conscientiously and I feel useful (036_R)		Many colleagues and people who work with me are always ready to cheer up and compliment me on how I deal with and manage certain situations. I should learn from them and also be ready to value those around me with a word or a gesture, a small gesture to create collaboration, improve relationships and push everyone to always give something more. (043_R) We have become a team! I didn't think I'd end up doing well in such a difficult environment, with new people (035_R)					Today a patient came specifically to look for me to tell me that she has been thinking about me a lot in the last two months. I am glad that, despite everything, a kind thought was addressed to me. (045_R)	Today was an overall satisfying and happy working day, I did not feel the anxiety and the workload at all. (048_R)	I finally heard the voice of an extubated patient; he is getting better and better. It is certainly the most beautiful feeling of the last two months. (044_R)

Table 1 (continued)

	1st category			2nd category			3rd category			4st category		
	Clinical Practice in COVID-19 Patients			Importance of Relationship			Navigating by Sight			Good Always Pays Off		
	End of life	**Patient's care**	**Work schedule**	**With patients' relatives/ families**	**With colleagues**	**With loved ones**	**Frustration and helplessness**	**Anger**	**Loneliness and distress**	**Satisfaction for the work done**	**A glimmer of light**	**The given emotions by patients**
Healthcare assistants	You are aware that in these circumstances, the patient's conditions can change in a moment. But still, you don't realize it until you see it with your eyes. [...] With resignation and a bit of bitterness, you see a patient leave, but the worst comes when you have to carry out the procedure to follow to recompose the body. Wrapping a person on a sheet full of disinfectant, putting him on a black bag is not normal; you feel sad because you think you die without dignity. (004_D) "[…] unfortunately we still had deaths today. […] The worst thing is that they die alone without warm hugs of their families and we are the last people they see" (017_D).	To me, we are neither heroes nor angels; we are simply people doing one of the most beautiful jobs, that is, taking care of the most vulnerable. (005_D)	Another work shift and compared to the previous ones, the situation does not change. I keep telling myself that they will pass. It weighs me to wear all the PPE, you can't breathe, you sweat, and they don't allow me to meet my needs (004_D).		Today, even the nurses seemed all nicer and more cooperative. We worked as a team and in sync. The patients were handled carefully and calmly; it was rewarding! Since I've been here, this is the first time I've been in such a good mood. (035_R)	Despite the external affections to date, I have a shell I have made myself impenetrable to survive, and this is also due to the detriment of my affections. (022_D)	Here we are; today, sadness also accompanies me during the shift. You know that in this circumstance, a patient's condition can change at any moment. But you don't get over it until you see it with your own eyes. (004_D)	Today's experience or emotion is that for the umpteenth time, we change shifts and departments. A mixture of sadness and, above all, anger assails me. I am very disappointed. (022_D) The only visible part of my body is the eyes, through which I recognize my colleagues. Yes, they are the great protagonists of this experience. Thanks to them, we have learned to perceive a smile covered by a mask, the fear and dismay that are with us on this journey. (005_D)	Loneliness and indifference are, unfortunately, the words that echo in my mind and heart. "He" staying alone in his bed, far from his loved ones, whereas around there was the general indifference things were carried out, especially when preparing the body. (021_D) I feel empty, alone, and it doesn't happen. Despite the external affections to date, I have a shell I have made myself impenetrable to survive, and this also comes at the expense of my affections. (022_D)	Today finally, a "lighter on an emotional level" shift. Patients have improved, you know they will get out of it, they are close to healing, and you feel happy. When a patient thanks you by expressing all his gratitude, you feel important, and you understand that even a small gesture addressed to them has a positive effect on yourself, and this is where I find the strength to go on and love my work. (004_D)	Today at the end of my shift, I finally learnt some good news. My department closes. Patients are dwindling, and the light at the end of the tunnel seems to be showing. The feeling is of happiness with the hope that soon we can return to normal. At the end of this health experience, I realize that I have been pulled into an experience greater than me, which has changed me inside. And I will not forget the dramatic scene my eyes have seen. (005_D)	

difficult to be understood and to obtain the necessary help" (020_D_physician). *"The working group, nurses and support staff, is great. They are all very close-knit, I must recognize the great ability to adapt: I expected myself to face conflict [...], but no, we work side by side, we call each other, we look for each other, there is only one motto one for all, all for one"* (009_R _nurse).

With loved ones. Caring for COVID-19 patients was an essential and strong experience, and it pervaded the personal sphere, both positively and negatively. Relationships between HCWs and their family members were reported mostly by nurses and healthcare assistants. *"I was filled with feelings of gratitude to my loved ones for the support they always give me"* (020_R_nurse). *"Despite the external affections, to date, I have a shell I have made myself impenetrable to survive, and this is also due to the detriment of my affections"* (022_D_healthcare assistant).

Tirth generic categories: Navigating by sight

This 'Generic category' emphasised the difficulties faced by HCWs in the care of COVID-19 patients through their reflections and feelings. Frustration and helplessness caused by clinical and organisational situations, anger, loneliness, and distress characterise HCWs' daily working in the COVID-19 era. These negative aspects were unearthed primarily by nurses and healthcare assistants; in contrast, these aspects were less present among in diaries of physicians and technicians.

Frustration and helplessness. Frustration and helplessness were linked to a feeling of inadequacy and inability to change reality in facing what was happening; all HCWs manifested these feelings. *"Difficulty in accepting what I cannot change"* (002_G_physician); *"Here we are, today sadness also accompanies me during the shift. You know that in this circumstance, a patient's condition can change at any moment. But you don't get over it until you see it with your own eyes"* (004_D_healthcare assistant).

Anger. Anger seemed to belong more to physicians, nurses, and healthcare assistants. These feelings were related to the general public's thoughts, who refused to accept the lockdown's daily-life restrictions to prevent unfavourable epidemiological features of the infection's spread. *"Anger because the general thought is that nothing has ever happened and I keep thinking about the families of patients who didn't make it"* (019_D_physician).

Loneliness and distress. Feelings of loneliness and anguish referred to the experience of care and the lack of support from the organization. This experience was reported mainly by physicians and nurses. *"I feel empty, alone and it doesn't happen. Despite the external affections to date I have a shell I have made myself impenetrable to survive, and this also comes at the expense of my affections"* (022_D_healthcare assistant); *"I wonder why we are now back to browsing on sight and not being heard anymore"* (020_D_physician).

Fourth generic categories: Good always pays off

The last category reported a range of positive thoughts that emerged from the HCWs. Some of these thoughts were related to satisfaction experiences regarding the performed work and were hopefulness in perceiving a pandemic's slowing. Some emotions related to close contact with patients during treatment also emerged to be relevant.

Satisfaction with the work done. All the involved HCWs described some positive feelings of satisfaction linked to the progress of the patients. Seeing the patients' progression allowed HCWs to understand the effects of their work on patients and realise the great work they do. *"I turn around and see what a great job we have done"* (020_D_physician); *"The hope, however, of having made the patient's life better, even if slightly, is always alive"* (008_G_nurse).

A glimmer of light. Feelings of hope linked to the evolution of the pandemic were perceived from all professional categories. These experienced feelings generated a broad sense of relief among HCWs who compared positive achievements with previous times when the situation seemed completely uncontrolled. *"Today we glimpse a very small glimmer of light, finally good news, after about twenty days one of the patients is leaving"* (018_D_nurse); *"I felt a little relieved that there are fewer hospitalizations and fewer serious conditions"* (019_D_physician).

The given emotions by patients. The emotions derived from caring for positive patients seemed to act as a driving force that supported the HCWs during their work. These emotions not only supported HCWs but also repaid them for their efforts. However, this sub-category was detected only among nurses and technicians. *"I finally heard the voice of an extubated patient, he is getting better and better. It is certainly the most beautiful feeling of the last two months"* (044_R_ radiology technicians).

Discussion

This qualitative research is the first study to describe the perceptions and experiences of HCWs about their daily working life during the initial phase of the COVID-19 pandemic to uncover some profession-specific peculiarities. Despite their various daily tasks and activities and specific responsibilities (15–17), physicians, nurses, radiology technicians, and healthcare assistants shared specific experiences alongside the care path of COVID-19 patients. It is reasonable to assume that these experiences impacted the quality of care provided and their psychosocial outcomes. Our results revealed four main generic categories derived from a seven consecutive days daily diary filled by 70 involved HCWs: 'Clinical practice in COVID-19 patients'; 'The importance of relationship'; 'Navigating by sight'; and 'Good always pays off'.

Several differences arose from the sentences of the HCWs, which deserve further investigation. HCWs involved in direct care, primarily nurses and healthcare assistants, had a more in-depth understanding of daily situations, including positive and negative fluctuations related to the patient's clinical evolution and organizational demands. The more HCWs feel involved in the patient's care pathway, the more they are exposed to the evolution of the patient's condition and, as a result, the experience associated with it; the greater the involvement, the stronger the feelings experienced. These experiences have also been described and classified as stressors and psychosocial risk factors in the literature (30).

The main category of relationships was found to be only related to a few HCWs. This category was not present in the thoughts of physicians, and the thoughts described by radiology technicians seemed to be more focused on aspects strictly related to their work and the positive course of the clinical evolution of patients. On the other hand, nurses and quotes from healthcare assistants often referred to the perceived support of their family members, with feelings of concerns related to the possible risk of being infected and spread the infection within their own families, as reported in other studies (9).

The level of competence of HCWs and, as a result, the views from caregivers regarding the profession-specific autonomy level in taking a decision seemed to be an element that can influence some thoughts related to care situations. Previous research suggests that such thoughts (11) and experiences (10) may predict the risk of psychological burden (9). In this regard, some distinctive profession-specific features emerged: these thoughts appeared to be associated with different types of performed work, and the commonalities of thoughts within a professional group were numerous, showing a kind of professional "fingerprint" in expressing thoughts among technicians (14), physicians (15), and nurses (31) and healthcare assistants (17). A similar profession-specific feature was reported in a recent burnout study (19). Overall, from the experiences reported in diaries seems that nurses and healthcare assistants were the HCWs who described more precisely and intensively stress-related symptoms.

This study presented some limitations, especially regarding the sample and setting, which were specific and unique, undermining the possibility to generalize the emerging results, even if the study portrayed insightful experiences. This study could be expanded to include other HCWs involved in patient care: such as physical therapists, psychologists, speech therapists, to better understand the emerging thoughts. Because the COVID-19 infection is a newly emerging pandemic, there are few references to similar studies, especially regarding the differentiation from HCWs. Another limitation was that this study was carried out solely through the analysis of written comments. Future research can triangulate findings by collecting quantitative data on psychological wellbeing, moral distress, coping, and other outcome variables like a sense of coherence. Overall, our findings could serve

as a starting point for future research focusing on psychological support for HCWs, taking into account differences related to gender (12,32), age, health system organisations (20,33–35), different levels of competencies (36–39) and values (40,41).

Conclusion

Our findings revealed significant differences in the professional roles of HCWs in the care of patients with COVID-19. Physicians, nurses, radiology technicians, and healthcare assistants, in particular, had experienced well-defined perceptions, feelings, and opinions on the frontline of the first COVID-19 epidemic wave in Italy. Understanding the profession-specific experiences of the involved HCWs in dealing with the COVID-19 pandemic is critical for boosting reflections, research, and actions to adequately support each professional group. Other quantitative and qualitative results should provide decision-makers with new insights and recommendations for assisting HCWs and ensuring adequate safety and effective care standards as this study represent an initial understanding of the lived experiences of several professional groups in delivering care to patients with COVID-19 in a working week during the first epidemic wave in Italy.

Conflict of Interest. Each author declares that he or she has no commercial associations (e.g. consultancies, stock ownership, equity interest, patent/licensing arrangement etc.) that might pose a conflict of interest in connection with the submitted article.

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