Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

Archives of Psychiatric Nursing 41 (2022) 27–34

Contents lists available at ScienceDirect

Archives of Psychiatric Nursing

journal homepage: www.elsevier.com/locate/apnu

The psychological impact on frontline nurses in Spain of caring for people with COVID-19☆

Beatriz Rodríguez-Martín [a], José María Ramírez-Moreno [b,c,d,*], Pedro Ángel Caro-Alonso [a], André Novo [e], María Martínez-Andrés [f], María Zoraida Clavijo-Chamorro [g], Julián Rodríguez-Almagro [h,**], Fidel López-Espuela [i]

[a] Department of Physiotherapy and Occupational Therapy, Faculty of Health Sciences, University of Castilla-La Mancha, Talavera de la Reina, Toledo, Spain
[b] Department of Biomedical Sciences, Extremadura University Medical School, University of Extremadura, Badajoz, Spain
[c] Neurology Department, Hospital Universitario Infanta Cristina, Stroke Center, Badajoz, Spain
[d] Multidisciplinary Research Group GRIMEX, Extremadura, Spain
[e] Instituto Politécnico de Bragança, CINTESIS: NursID, Portugal
[f] Department of Physiotherapy and Occupational Therapy, Faculty of Nursing, University of Castilla-La Mancha, Albacete, Spain
[g] Department of Nursing, Faculty of Nursing and Occupational Therapy, University of Extremadura, Extremadura, Spain
[h] Department of Nursing, Physiotherapy and Occupational Therapy, Faculty of Nursing, University of Castilla La-Mancha, Ciudad Real, Spain
[i] Metabolic Bone Diseases Research Group, Department of Nursing, Faculty of Nursing and Occupational Therapy, University of Extremadura, Extremadura, Spain

ARTICLE INFO

Keywords:
Coping
COVID-19
Nurse
SARS-COV-2
Psychological
Qualitative research

ABSTRACT

Aim: To understand the perceptions of National Health System nurses who have been working on the frontline of the psychological impact of caring for people with COVID-19 during the first and second waves.
Methods: A qualitative study, the design and analysis of which was based on phenomenology. For data collection, a semi-structured interview was administered to a sample of nurses who worked on the frontline in public hospitals in Extremadura and Madrid, Spain. The interviews, which followed a script including various topics, were conducted between May and November 2020 so as to include the experiences of the first and second waves of the pandemic. Sample collection continued until data saturation. The data were analysed following the phenomenological method of Giorgi with the help of the Atlas-Ti software.
Results: Two main themes emerged from the data analysis that explained the nurses' perceptions: (i) the main psychological repercussions of being frontline carers (anxiety, fear, stress, impotence, frustration, and an increase in obsessions and obsessive behaviours) and (ii) psychological coping strategies (collapse in the face of the situation, dissociative amnesia, leaning on colleagues and working as a team, resigning oneself, perceiving the situation as a war, and being aware of psychological repercussions).
Discussion: Caring as the first line causes great psychological repercussions for nurses. It is necessary to implement psychological and emotional support programmes to address the post-traumatic stress that nurses can suffer.

Introduction

The COVID-19 pandemic has spread rapidly throughout the world, with >200 countries affected by June 2021 (World Health Organization, 2021a), being the most extensive pandemic in a century (Yin et al., 2021). Spain is one of the countries most affected in relation to the number of cases and deaths, causing the pandemic the collapse and ineffective functioning of the health system (Hidalgo et al., 2020; Wang

☆ **Copyright Questionnaire:** The questionnaire used is self-made and does not contain scales or other measuring instruments of third-party authors who have copyright.Ethical and legal considerations: The study was approved by the Ethics Committee on Research of Caceres (Spain) with number CEIM20/278.

* Corresponding author at: Department of Neurology, University Hospital of Badajoz, Av. de Elvas, s/n, Badajoz CP: 06080, Spain.
** Corresponding author.
E-mail addresses: Beatriz.Rmartin@uclm.es (B. Rodríguez-Martín), jramrez@unex.es (J.M. Ramírez-Moreno), PedroA.Caro@uclm.es (P.Á. Caro-Alonso), andre@ipb.pt (A. Novo), maria.martinezandres@uclm.es (M. Martínez-Andrés), zoraidacc@unex.es (M.Z. Clavijo-Chamorro), julianj.rodriguez@uclm.es (J. Rodríguez-Almagro), fidellopez@unex.es (F. López-Espuela).

https://doi.org/10.1016/j.apnu.2022.07.022
Received 24 March 2022; Received in revised form 31 May 2022; Accepted 10 July 2022
Available online 19 July 2022

et al., 2020), which has negatively affected health professionals.

Nurses have been on the frontline during this pandemic and through experience have acquired the necessary skills and competencies (Eghbali et al., 2020; Karimi et al., 2020). At the beginning, there was hardly any information on the risk of contagion or specific pharmacological treatments, making it necessary to adapt the action protocols to the constant changes (Centers for Diseases Control and Prevention, 2020; Eghbali et al., 2020; Guo et al., 2020). During the COVID-19 pandemic nurses working on the frontline have been concerned about direct exposure to the virus, emerging feelings of guilt due to the high number of deaths, and their feelings of helplessness in the face of the situation. Added to this is the care pressure derived from intense and long working hours, the lack of material resources (personal protective equipment), the improvised locations of intensive care units (ICUs), and the recruitment of nurses to cover shifts who sometimes have limited or no critical care experience and have to suddenly adapt to a new way of working. Moreover, the nurses have exposed to serious risk and even death while caring (Liu et al., 2020; Schwartz et al., 2020). These factors have contributed to the psychological and emotional impact suffered by nurses (Centers for Diseases Control and Prevention, 2020; Fang et al., 2021; Kackin et al., 2020).

Previous studies that have analysed the repercussions for healthcare professionals who work on the frontline highlight feelings of irritation, anger, uncertainty, stress, nervousness, anxiety, lack of motivation, tiredness, sadness, depression, being overwhelmed, and difficulty sleeping or concentrating (Centers for Diseases Control and Prevention, 2020; Santabárbara et al., 2021). In addition, these negative effects can lead to unhealthy behaviours such as drug abuse, thus reducing the work performance of professionals (Centers for Diseases Control and Prevention, 2020; Pollock et al., 2020).

To date, few qualitative studies have analysed nurses' experience in caring for patients with COVID-19 (Bennett et al., 2020; Kackin et al., 2020; Karimi et al., 2020; Lee & Lee, 2020; Liu et al., 2020; Schwartz et al., 2020; Sun et al., 2020; Yin et al., 2021). Some of them only include staff nurses and not ICU nurses (Lee & Lee, 2020), others include the perceptions of nurses who have been caring only for a short time (Karimi et al., 2020; Liu et al., 2020) or who do not voluntarily choose to care for these patients (Sun et al., 2020). Other studies analyse the perceptions of various healthcare professionals (doctors, physiotherapists, and nurses) (Bennett et al., 2020). Furthermore, most of the previous studies have only investigated the experiences of nurses in the first wave of the pandemic, despite the fact that a large part of the psychological repercussions emerge after a meaningful period of time.

Understanding the distress of nurses who have been caring on the frontline can provide key information to know how to better cope with possible future pandemics and prevent the trauma suffered by these professionals (Banerjee, 2020; Fang et al., 2021).

However, the experiences of nurses may change according to the resources, political strategies, health systems, and sociocultural environment of each country, so it is necessary to investigate this phenomenon in different sociocultural contexts (Lee & Lee, 2020).

The objective of this study was to uncover the perceptions of National Health System nurses who have worked on the frontline, of the psychological impact of caring for people with COVID-19 during the first and second waves.

Material & methods

Design and participants

A qualitative study designed and with analysis following the descriptive phenomenological approach of Giorgi (Willig & Rogers, 2017), that intends to describe the meanings of the phenomenon from the person's life experience (Giorgi, 1997). This approach was chosen to describe the nurses' experiences about the psychological impact of caring for people with COVID-19 through a psychological phenomenological analysis of (and in) their own words (Willig & Rogers, 2017).

Data collection and data sources

For data collection, semi-structured interviews were used on a theoretical sample of nurses from hospitals of the public health system of Extremadura and Madrid, two Spanish communities with a high prevalence of cases, who cared for people admitted with COVID-19 during the first and second waves of the pandemic. Semi-structured interviews were chosen for providing a 'naïve description' of this phenomenon in the participants' own words (Englander, 2012). The interviews were conducted between May and November 2020. Sample collection continued until the data was saturated (14 interviews) (Saunders et al., 2018).

For the selection of participants, the following inclusion and exclusion criteria were used. Inclusion criteria: (1) nurses working actively during the first and second waves of COVID-19; (2) nurses who work in hospital units or intensive care units of the Madrid or Extremadura Health Services. Exclusion criteria: (1) nurses who had been on sick leave in that period; (2) nurses who had worked for less than two months with COVID-19 patients (Table 1).

The interviews were conducted in a comfortable and private place by the main researcher (blinded to review), who had a script of topics that could appear openly during the interview and that was refined throughout the study (Table 2). All interviews were recorded. Most of the interviews were conducted in person, but four participants preferred videoconference, without finding significant differences. The interviews had an average duration of 66 min (range 36–116 min).

Researcher reflexivity

The interviewer was an expert in qualitative research and had extensive experience in the semi-structured interview technique. He has a background in Public Health and no clinical experience in the field of psychiatry. The position of the interviewer is a strength of this study, which prevented the interviewer from knowing too much about the phenomenon under study. Moreover, none of the authors knew the participants.

Table 1
Main characteristics of participants.

Variables		n
Age	<30 years old	2
	30–39 years old	8
	40–49 years old	2
	>50 years old	2
Gender	Male	3
	Female	11
Highest academic qualification	Registered nurse	6
	Expecialist	1
	Master	6
	PhD	1
Type of work	Temporary employment	9
	Fixed-term contract	3
	Permanent contract	2
Type of unit	Intensive care	6
	Emergency	2
	Medical unit	6
Change of unit during COVID-19 crisis	Yes	3
	No	11
Total working experience	0–4 years	2
	5–10 years	5
	11–15 years	3
	>25 years	4

Table 2
Interview guide.

How is a working day with COVID patients.
Kind of feelings that he/she had during the workday and when he/she going home.
Changes in his/her life (labour, social and family).
Perceptions about positive and negative things about this vital experience.
Coping strategies?
Perceptions regarding the pandemic.

Data analysis

Once literally transcribed and anonymized, the interviews were analysed following the steps of the Giorgi's phenomenological method: (1) collecting and describing phenomenological data, (2) reading the whole description, (3) breaking descriptions into units of meaning, (4) transforming units of meaning, (5) identifying the essential structure of the phenomenon, and (6) integrating features into the essential structure of the phenomenon (Giorgi, 2009).

Two researchers (FLE and BRM) independently performed the data analysis, subsequently agreeing on the results; in case of disagreement, a third researcher (JRA) reviewed it and gave feedback for revision of the themes. The research team examined the codes and themes to formulate the categories and final themes.

The Atlas-ti 8.0 software was used as an aid in this phase.

Trustworthiness

To ensure the credibility two researchers (FLE and BRM) read transcripts and analysed them separately in order to eliminate the interpretation of the researcher. In addition, we used reflexivity, research triangulation, and return to interviewees. With regards to confirmability, we have tried to be very transparent with our research process and discussing sessions about the codes, categories and themes a consensus was achieved to decide on emerging themes. To ensure the dependability of the study, the research design and its implementation, data collection and data analysis were provided in detail. Finally, to ensure the transferability, we have meticulously described the participants' characteristics, and the environment where the research was developed (Guba & Lincoln, 1989). The Consolidated Criteria for Reporting Qualitative Research (COREQ) recommendations (Tong et al., 2007) were followed to guarantee the quality of the study.

Ethical and legal considerations

This study was conducted in accordance with the Declaration of Helsinki and the European General Data Protection Regulation (EU 2016/679) and was approved by the Ethics Committee on Research with Human Beings of (blinded to review). All participants signed the informed consent document after a complete and adequate explanation of the study. All interviews were audio-recorded, verbatim transcribed and anonymised before being analysed. The recordings of the interviews were kept by the principal investigator.

Results

Two main themes explained the nurses' perceptions: the main psychological repercussions of caring on the frontline and the psychological coping strategies used by nurses (Table 3). The categories and verbatims are presented in Tables 4 and 5, including the participant's code, gender, and age.

Main psychological repercussions of caring on the frontline

Caring on the frontline led to anxiety, fear, stress, helplessness, and frustration in nurses and an increase in obsessions and obsessive behaviours (Table 4).

Table 3
Main themes, categories, subcategories and codes.

Themes	Categories	Subcategories	Codes
Main psychological repercussions of caring in the first line.	Anxiety	Causes of anxiety	- Initial uncertainty. - Unknown enemy. - Lack of preparation (facilities and training). - Patient demands. - Not being able to do anything. - Not knowing when the situation would end and its evolution. - Questioning of competences and interventions.
		Repercussions of anxiety	- Leave from work due to illness.
	Afraid	Types of fear	- Facing an unknown and unexpected work situation. - Get sick. - Death. - Spread your loved ones or patients. - Cabin syndrome. - Enoclophobia. - Evolution and new waves.
		Causes	- Lack of approved protective equipment and information on its correct use. - Scarce and changing information on the virus and the management of people with COVID-19.
	Stress	Causes	- Sudden situation. - Tense work environment. - Increased work pressure. - Isolation from family members.
	Helplessness and frustration	Causes	- Magnitude of the pandemic. - Absence of treatments or positive results. - Suffering and death of patients. - Appearance of new waves.
	Obsessive behaviours	Types	- Monitor the appearance of symptoms of COVID-19. - Cleaning and disinfection.
Psychological coping strategies.	Collapse.	Causes	- Suffering, loneliness and death of patients. - Progress of the pandemic.
		Consequences	- Cry alone. - Cry with colleagues.
	Dissociative amnesia		

(continued on next page)

Table 3 (*continued*)

Themes	Categories	Subcategories	Codes
	Lean on peers Resignation. Perceive the situation as a war.		
	Be aware of the psychological repercussions	- Realize the psychological affectation. - Need for psychological help.	

Anxiety

The main psychological impact perceived by the nurses was anxiety, described as a feeling of anguish or of being overwhelmed. Initial uncertainty, the fear of an unknown enemy, and the lack of preparation for the first wave were highlighted to be among its causes. These perceptions were due both to the lack of information and training, as well as adequate facilities and means of protection.

At other times, anxiety emerged from not being able to meet the demands of patients or to do anything else in the face of suffering, the sudden worsening, or deaths of patients.

In addition, the nurses would question their own professional competencies and the interventions they carried out, especially at the beginning of the pandemic, generating anxiety among them.

Finally, not knowing when the pandemic would end or how it would evolve generated anxiety among the nurses.

Afraid

Fear has also been very prevalent in nurses, especially the fear of facing an unknown and unexpected work situation, of becoming ill, of death, and of infecting their loved ones or patients.

The fear of contagion increased as there was more information about the disease and its repercussions. Moreover, as the pandemic progressed, the participants highlighted their fear of its evolution and new waves.

In some participants, fear became chronic, also affecting their personal lives. Some nurses expressed a fear of leaving home or socialising when the confinement measures began to relax (cabin syndrome). In addition, in some cases, they developed enoclophobia (fear of crowds).

Among the causes of fear at the beginning of the pandemic, the lack of approved personal protective equipment (PPE) and information on its correct use stood out, as well as the scarce and changing information about the virus and the care of people with COVID-19.

Stress

Another great repercussion was the stress due to the new and dramatic situation that appeared suddenly, leading to an increase in the workload and a tense work environment.

Although nurses in special services, such as ICU, considered themselves to be used to working in stressful environments, they perceived the situation during the pandemic as one with the greatest work pressure.

Another source of stress for the nurses was their physical separation from family members as a safety measure.

Helplessness and frustration

Due to the absence of effective treatments at the beginning of the pandemic, nurses expressed feelings of helplessness and frustration in the face of the suffering of patients and their families, the sudden patients' deterioration and the 'bad deaths', and the lack of positive results. In addition, in the second wave, the feeling of helplessness re-emerged for a situation that could have been avoided.

Table 4
Theme 1: main psychological repercussions of caring on the frontline.

Categories	Verbatims
Anxiety	We dedicated ourselves above all to searching the Internet for the management of these patients, the experiences of colleagues from Madrid, who would tell us how they were coping, that it worked, it failed … It generated a lot of anxiety for me because in a short time I wanted to get the situation under control (P·07F32). At first a lot of uncertainty and a feeling of helplessness, of not knowing what was going to come. We did not know what it was, what we were going to find. You would come to work one day and say 'let's see what happens today'. [I felt] Uncertainty of not knowing, of going towards the unknown (P·10F30). A horrible anxiety at not being able to meet all the demands or not being able to do something else (P·06F52). I do not consider myself a super anxious person, but I was concerned about: did I do things well? Did I take off my PPE well? Did I have the appropriate protection measures? … Then you normalise, you get used to it a bit work like this (P.01 M24). The feeling of going home and not knowing if this was going to end or how it is going to move forward. You were thinking, will this ever end? Will we be able to have the family close again? (P·03F38). That first night in Internal Medicine, we were supposedly three nurses and two assistants. Then my partner arrived and when she saw the situation, she became very overwhelmed and said 'I think I have symptoms, that I have caught it' and she left … There are people who are not trained for certain stressful situations (P·04F46). A lot of people who were working and found all the mess left due to anxiety, because they did not see themselves as capable of doing it. And then many people, after going through the hardest, have had many psychological consequences and they had to be discharged for that reason (P.01 M24).
Afraid	The pandemic has caused me to create many fears, many of them. Before, I was braver, more forward … specially to get sick, to make my loved ones sick, to work as well, to see where I am going to go, to change again (P·13F33). It is the fear of something unknown. I think this continues to surprise, there is a lot of news, you don't know what is true, you don't know if the virus mutates, if there is less viral load (P·09F52). Very afraid, not of getting it yourself, but of taking it home (P.04 M46). Every day when I went to the hospital I thought, you are going to die! … You have many chances for you to die, because I am no more, nor do I believe myself more than the person who is lying there in a bed or in an armchair (P·13F33). Fear of how people continue to act when a time has passed … that [the situation] creeps over time and be[comes] something indefinite (P·02F45). Fear of repeating this or something similar … to go back again (P.08 M32). I am more afraid of catching the virus now than before. Because before it was that you have fatigue, a fever, a cough … but now you say, what if I catch COVID? I know cases of people who are 35 years old and have been fatigued for months (P·11F36). The restrictions were lifted, and they gave me a week's vacation and I could go see my mother, my dog, my family. I had cabin syndrome. I had an atrocious fear of moving out of my comfort zone, of infecting my mother and all the paranoia (P·13F33). Fear of going out. When there are many crowds… I am afraid (P·06F52). People entered with great fear because at first they thought I don't know what I'm dealing with, I know it's something big, it's respiratory, but I don't know if it's something else (P·02F45).

(*continued on next page*)

Table 4 (*continued*)

Categories	Verbatims
	We were very afraid because we saw ourselves without protection and with patients that you did not know how to treat (P.08 M32).
	At the beginning we were very afraid, if you took off your PPE badly, you would get it … you couldn't walk down the hall, we couldn't touch each other, we couldn't even communicate with each other and sit down to have a coffee (P.05 M30).
Stress	At the beginning everything was very chaotic. We were seven hours into the shift with PPE on, making you dizzy, feeling hot, overwhelmed, stressed, afraid (P·07F32).
	The first days we started to see tension; we were all a little nervous. It was noticeable in the behaviour, in the shift changes… it was a rarefied environment, the environment was already tense (P·07F32).
	That tension grew, from one hour to another … That tension added to the circumstances of work has weighed on us all (P·09F52).
	I thought that at ICU we were used to work[ing] under pressure, on a very fine line between life and death, but no. The atmosphere was … I don't know, it was a very strange situation (P·07F32).
	The stress for what I was living and the feeling of missing your family and the contact with your loved ones on a daily basis (P·04F46).
Helplessness and frustration	I have cried a lot because of the impotence of knowing that you were not taking care of them as you should because at first, they were like patients who were hopeless (P·07F32).
	Sudden deaths, many deaths in a few days… the situation [being] so dramatic that we lived and that we were not used to … The emotional impact of everything we have experienced, the pain of seeing families suffer who lose two or three relatives in days (P.01 M24).
	I saw so many people suffer, so much death, so much helplessness. You always have the frustration of [not being able to have] done more (P·06F52).
	It was frustrating, because you put a lot of effort into getting them ahead and in the end we didn't get anything (P·12F32).
	The impotence [of saying] why haven't we prevented this from happening, with all the measures that exist to prevent it? (P·02F45).
Increased obsessive behaviours	Obsession of looking at my temperature, if I cough because of the allergy or the COVID (P·11F36).
	I had a habit of going into [my home] and leaving my sneakers, taking off my clothes. I always had the same three sets of clothes that I later threw away. I got to wash clothes at 60 degrees as the protocol said, I aired everything, everything was paranoia. I have come to have many rituals like everyone else … Antibacterial, antifungal, anti everything and that was to save my life, to throw everywhere, I got hands that dripped blood. I haven't used my hands to open the doorknobs, [instead they are all opened] with toilet paper or with elbows (P·13F33).

Increased obsessive behaviours

This situation contributed to the increase in obsessions and obsessive behaviours by nurses, especially monitoring for the appearance of COVID-19 symptoms, cleaning, and disinfection.

Psychological coping strategies used by nurses

The main nurses' coping strategies were collapse, dissociative amnesia, relying on colleagues and teamwork, resigning themselves, perceiving the situation as a war, and being aware of the psychological repercussions (Table 5).

Collapse

Collapsing in harsh work situations was common, especially in the face of suffering, loneliness, and the death of patients. Moreover, at the beginning of the pandemic, nurses were psychologically stronger, but as time passed, they had an increased tendency to collapse.

This collapse caused the need to cry as a liberating mechanism. In some cases, crying in solitude was preferred, to be strong in front of their colleagues. While on other occasions nurses cried together during breaks, perceiving that the support of their colleagues was vital.

Dissociative amnesia of the negative

Another coping mechanism was forgetting and not thinking about the negative things experienced.

Table 5
Theme 2. Psychological coping strategies used by nurses.

Categories	Verbatims
Collapse	I try to avoid it myself because at the beginning I was very hard psychologically, very strong. But now that all this has happened you are falling apart (P·06F52).
	Every day I would cry at home because there were moments when you remembered what you had experienced, and it was a strange feeling. On the contrary, I never cried at work and entered singing because I knew there were colleagues who were having a terrible time (P·04F46).
	In the work shifts when you couldn't take it anymore, you had to cry, we went out to the terrace with another colleague, always accompanied and we supported each other (P·06F52).
Dissociative amnesia of the negative	The mind tries not to remember negative things (P·06F52).
Lean on colleagues and work as a team	The best of all this has been the companionship lived in this extreme situation, the confidence of being with the same staff, that we will be stronger because we will be together, knowing all that there is, and knowing that we need each other and that we have to support each other emotionally, that you don't go through this alone … professionally, that for me has been very gratifying, because they were very hard experiences (P·09F52).
	The phenomenal companionship, we all had the same fears, we endured the same stress. So perhaps it has united us much more, because you also depended a lot on another person (P·09F52).
Resignation	I went from anger to acceptance and resignation when I realised that it could not be done in any other way, that each one was working with the tools they had at that time, everything was on the fly … we had to try to save lives (P·13F33).
Perceiving the situation as a war	Having unprotected personnel is like sending them to war without a bulletproof vest or a rifle. We are fighting a war without weapons and without protection … It was a war in which the enemy was the virus (P.08 M32).
	The pandemic was like a war; I saw it that way and they told us: 'your mission is for your patient to survive one more day' (P·14F25).
	I felt like a submachine gun. I'm a submachine gun, right now I have it or I don't have it, I may be impregnated with viruses (P·02F24).
	Every day I thought I'm going to war to see what I live today. I have to fight. And you go as if you had armour (P·11F36).
	I came to imagine that I was in a war game and the only way to survive was trying to do the best I could with people who needed something (P·13F33).
Be aware of the psychological repercussions	I read an article that said that the third wave, and it is believed that the most important, is going to be the psychological wave. I think this is going to be difficult to overcome, I think you have to live with it and know that this will mark a before and after, at least in my case because of the loneliness and isolation that I suffered and not only on a physical level (P·13F33).
	There are colleagues who are thinking of going to psychologists because they do not come out of those bad feelings (P·11F36).

Lean on colleagues and work as a team

As in wars, colleagues were considered more important than ever, being essential teamwork and the support of colleagues to overcome many of the situations experienced.

Resignation

Resignation was also considered a coping mechanism for the situation.

Perceiving the situation as a war

There was a common simile likening the COVID-19 pandemic to an unexpected warlike conflict, in which the nurses had to fight day by day and fulfil missions, especially in the first moments, when they did not have adequate means of protection and the organization was chaotic.

Some participants even perceived themselves as weapons capable of spreading the virus.

Viewing the pandemic as a war helped the participants to experience the situation every day and to protect themselves emotionally to continue 'fighting' against the virus.

Be aware of the psychological repercussions

Once the initial phases of the pandemic had passed, the nurses were aware that the situation they experienced would leave them with significant psychological consequences and that they would need professional help to overcome them.

Discussion

The main psychological repercussions perceived by nurses who have cared for patients with COVID-19 during the first and second waves are anxiety, fear, stress, helplessness, and frustration and an increase in obsessions and obsessive behaviours. Regarding coping strategies, nurses highlight collapse, dissociative amnesia, leaning on colleagues and teamwork, resigning themselves, perceiving the situation as a war, and being aware of the psychological repercussions.

Main psychological repercussions

Our results coincide with another previous study showing that the abrupt and unpredictable situation is one of the causes of the nurses' lack of preparation for the pandemic (personal and organisational level) (Bennett et al., 2020). Moreover, in the initial chaos, nurses did not receive the training and suffered from constant changes in the action protocols (Liu et al., 2020). The initial confusion, nonspecific and changing guidelines create anxiety, stress and a decrease in confidence in their work as frontline nurses (Karimi et al., 2020; Lee & Lee, 2020; Maaskant et al., 2021; Tan et al., 2020).

Furthermore, nurses consider that removing PPE is a critical moment in the guarantee of their safety (Lee & Lee, 2020; World Health Organization, 2021b). This situation is lived with great anxiety and force the nurses to work together as a team, supporting each other to avoid mistakes.

The fear of an unknown enemy is one of the great psychological repercussions of attending on the frontline. At the beginning of the pandemic, there was no clear information causing nurses to fear for their own infection or even death (Liu et al., 2020; Schwartz et al., 2020). Moreover, in this phase of the pandemic, was common the obsessions of nurses related to increased vigilance for symptoms of infection (Lee & Lee, 2020). Moreover, the fear of infection was recurrent with regard to family members (Kackin et al., 2020; Liu et al., 2020), which in most cases led to physical separation from loved ones, increasing their stress (Karimi et al., 2020; Liu et al., 2020). Compared to studies that have only analysed the first wave, our results show the nurses perceive fear that the situation would repeat itself and their impotence due to not having been able to prevent new waves.

Our results follow the line of previous studies that show that working conditions (tension, lack of material), workload, the novelty of the situation (Lee & Lee, 2020; Liu et al., 2020), and working the entire shift with PPE (Liu et al., 2020; Maaskant et al., 2021; Tan et al., 2020), were causes of stress. In this case, including several waves, the pandemic continues to be a great source of stress and overload, indicating that working conditions have not improved for nurses, or that lessons have been learnt with regard to adjusting ratios or improving work distribution, as they should have been. Stress and work overload negatively affect the physical and mental health of nurses, and the quality of care, affecting patient safety (Karimi et al., 2020).

In the absence of effective treatments and action protocols, as in other new infectious diseases, the nurses perceived that they only can provide nursing care, causing impotence and frustration (Guo et al., 2020; Karimi et al., 2020). This study contributes as a novel finding that these feelings remain in the second wave.

Caring on the frontline has a brutal impact on nurses' lives and their social relationships because they voluntarily reduce or avoid contact with their family and friends (Bennett et al., 2020). In addition, our results show long-term repercussions on social and personal relationships such as cabin syndrome or enoclophobia. These effects have not been seen in other studies which have covered longer study periods.

Furthermore, the suffering and distress of patients and the feeling of waiting for death affects nurses emotionally (Liu et al., 2020). During the pandemic, nurses have been concerned about the wellbeing of patients and they have continued to provide comprehensive care, being aware of the need to take care of psychological aspects (Liu et al., 2020). In this sense, nurses have provided emotional care to patients by trying to calm problem of loneliness, anxiety, and depressive moods (Karimi et al., 2020; Shaban et al., 2020). The results of our study confirm that emotional involvement in the care of patients with COVID-19 has psycho-emotional repercussions for nurses (Lee & Lee, 2020; Sun et al., 2020).

Psychological coping strategies used by nurses

Caring on the frontline has physically and mentally exhausted nurses. The suffering of patients produces pity and grief and leads them to collapse. As in other traumatic situations, crying is a coping mechanism (Bennett et al., 2020). Other coping strategies demonstrated in other studies involve finding relaxing activities and moments of pause, disconnections that are considered necessary to maintain an optimal state of mind that allows for focussing on the fight against the pandemic (Liu et al., 2020). One novel finding is dissociative amnesia such as a coping strategy used by many nurses who do not want to speak or remember the negative and traumatic situations experienced.

As has been described in previous studies (Lee & Lee, 2020; Sun et al., 2020), nurses believe that the support of their colleagues is vital to face this very dramatic situation and helps them to move forward providing them with the energy to continue with the battle. Moreover, our results show that the support of colleagues is considered essential both in cases in which nurses worked in new work teams and in ones that were already established.

Following the line of other studies (Lee & Lee, 2020; Liu et al., 2020), nurses perceive that they are thrown into a battlefield without preparation, they are fighting against an invisible enemy when they are on the frontline, and some nurses even believe that they can become a weapon of destruction because they are potentially contagious.

As in a previous study (Lee & Lee, 2020), nurses express their resignation to the possibility of the situation repeating itself and new waves occurring due to the irresponsible behaviour of some individuals. Furthermore, Covid-19 has also affected commitment to institutions; in this sense not being affiliated with the institution is also one of the reasons for professionals' resignation (Duran et al., 2021).

The results of this study show that nurses are aware of the emotional cost and trauma derived from caring on the frontline (Bennett et al., 2020). The sustained exhaustion of mind and body during the pandemic

will bring not only physical repercussions, but also psychological repercussions such as depression, anxiety, phobias, and post-traumatic stress (Bennett et al., 2020; Sun et al., 2020). Although a previous study shows that certain hospitals have made psychological help and support systems available to professionals (Liu et al., 2020), in our study the nurses state that they had not had this help. Therefore, it is necessary that health authorities implement programmes aimed at protecting the mental health of frontline professionals in a health crisis (Adams & Walls, 2020).

Despite the harshness and trauma caused by caring for people with COVID-19, like previous studies (Bennett et al., 2020; Liu et al., 2020; Sun et al., 2020), nurses consider that the work has been traumatic as well as rewarding (transcendence).

Limitations and strengths

The use of convenience sampling is a notable limitation. This study has analysed the perceptions of nurses who have worked on the frontline in hospitals units, emergency services, and intensive care units. Future studies should analyse this phenomenon in other locations.

One of the strengths of this study is having analysed the experiences of the 1st and 2nd waves, allowing comparisons to be made with frontline nurses in other countries and the information to be applied globally to health environments like ours.

Conclusion

Nurses' experiences show that caring on the frontline has serious psychological repercussions for nurses, highlighting anxiety, fear, stress, impotence, frustration, and an increase in obsessions and obsessive behaviours. Nurses have fought against this disease of unpredictable risks and have assumed their professional responsibilities, showing a high degree of commitment and courage, despite their fears and the potentially lethal risks to which they have been exposed.

Health policies should focus not only on patients, but also on health professionals, especially on nurses, who have spent more time on the frontline of care. It is necessary to implement psychological and emotional support programmes to address the nurses' post-traumatic stress. In future epidemics, psychological help programmes for professionals should be implemented from the first moment to minimise psychological repercussions.

Funding statement

This research received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors.

Declaration of competing interest

No conflict of interest has been declared by the author(s).

References

Adams, J. G., & Walls, R. M. (2020). Supporting the health care workforce during the COVID-19 global epidemic. *JAMA: The Journal of the American Medical Association, 323*(15), 1439–1440. https://doi.org/10.1001/jama.2020.3972. American Medical Association.

Banerjee, D. (2020). The COVID-19 outbreak: Crucial role the psychiatrists can play. *Asian Journal of Psychiatry, 50*. https://doi.org/10.1016/j.ajp.2020.102014. Elsevier B.V.

Bennett, P., Noble, S., Johnston, S., Jones, D., & Hunter, R. (2020). COVID-19 confessions: A qualitative exploration of healthcare workers experiences of working with COVID-19. *BMJ Open, 10*(12), 43949. https://doi.org/10.1136/bmjopen-2020-043949

Centers for Diseases Control and Prevention. (2020). *Employees: How to cope with job stress and build resilience during the COVID-19 pandemic*.

Duran, S., Celik, I., Ertugrul, B., Ok, S., & Albayrak, S. (2021). Factors affecting nurses' professional commitment during the covid-19 pandemic: A cross-sectional study. *Journal of Nursing Management, 29*(7), 1906–1915. https://doi.org/10.1111/jonm.13327

Eghbali, M., Negarandeh, R., & Froutan, R. (2020). COVID-19 epidemic: Hospital-level response. *Nursing Practice Today*. https://doi.org/10.18502/npt.v7i2.2728

Englander, M. (2012). The interview: Data collection in descriptive phenomenological human scientific research. *Journal of Phenomenological Psychology, 43*(1), 13–35. https://doi.org/10.1163/156916212X632943

Fang, X.-H., Wu, L., Lu, L.-S., Kan, X.-H., Wang, H., Xiong, Y.-J., Ma, D.-C., & Wu, G.-C. (2021). Mental health problems and social supports in the COVID-19 healthcare workers: A Chinese explanatory study. *BMC Psychiatry, 21*(1), 34. https://doi.org/10.1186/s12888-020-02998-y

Giorgi, A. (2009). *The descriptive phenomenological method in psychology: A modified Husserlian approach*. Duquesne University Press.

Giorgi, A. (1997). The theory, practice, and evaluation of the phenomenological method as a qualitative research procedure. *Journal of Phenomenological Psychology, 28*(2), 235–260. https://doi.org/10.1163/156916297X00103

Guba, E. G., & Lincoln, Y. S. (1989). *Fourth generation evaluation*. Sage.

Guo, Y.-R., Cao, Q.-D., Hong, Z.-S., Tan, Y.-Y., Chen, S.-D., Jin, H.-J., Tan, K.-S., Wang, D.-Y., & Yan, Y. (2020). The origin, transmission and clinical therapies on coronavirus disease 2019 (COVID-19) outbreak – An update on the status. *Military Medical Research, 7*(1), 11. https://doi.org/10.1186/s40779-020-00240-0

Hidalgo, M. D., Balluerka, N., Gorostiaga, A., Espada, J. P., Santed, M.Á., Padilla, J. L., & Gómez-Benito, J. (2020). The psychological consequences of COVID-19 and lockdown in the spanish population: An exploratory sequential design. *International Journal of Environmental Research and Public Health, 17*(22), 8578. https://doi.org/10.3390/ijerph17228578

Kackin, O., Ciydem, E., Aci, O. S., & Kutlu, F. Y. (2020). Experiences and psychosocial problems of nurses caring for patients diagnosed with COVID-19 in Turkey: A qualitative study. *International Journal of Social Psychiatry*. https://doi.org/10.1177/0020764020942788, 002076402094278.

Karimi, Z., Fereidouni, Z., Behnammoghadam, M., Alimohammadi, N., Mousavizadeh, A., Salehi, T., Mirzaee, M. S., & Mirzaee, S. (2020). The lived experience of nurses caring for patients with COVID-19 in Iran: A phenomenological study. *Risk Management and Healthcare Policy, 13*, 1271–1278. https://doi.org/10.2147/RMHP.S258785

Lee, N., & Lee, H.-J. (2020). South Korean nurses' experiences with patient care at a COVID-19-designated hospital: Growth after the frontline battle against an infectious disease pandemic. *International Journal of Environmental Research and Public Health, 17*(23), 9015. https://doi.org/10.3390/ijerph17239015

Liu, Q., Luo, D., Haase, J. E., Guo, Q., Wang, X. Q., Liu, S., Xia, L., Liu, Z., Yang, J., & Yang, B. X. (2020). The experiences of health-care providers during the COVID-19 crisis in China: A qualitative study. *The Lancet Global Health*. https://doi.org/10.1016/S2214-109X(20)30204-7

Maaskant, J. M., Jongerden, I. P., Bik, J., Joosten, M., Musters, S., Storm-Versloot, M. N., Wielenga, J., & Eskes, A. M. (2021). Strict isolation requires a different approach to the family of hospitalised patients with COVID-19: A rapid qualitative study. *International Journal of Nursing Studies, 117*, Article 103858. https://doi.org/10.1016/j.ijnurstu.2020.103858

Pollock, A., Campbell, P., Cheyne, J., Cowie, J., Davis, B., McCallum, J., McGill, K., Elders, A., Hagen, S., McClurg, D., Torrens, C., & Maxwell, M. (2020). Interventions to support the resilience and mental health of frontline health and social care professionals during and after a disease outbreak, epidemic or pandemic: A mixed methods systematic review. *Cochrane Database of Systematic Reviews*. https://doi.org/10.1002/14651858.CD013779

Santabárbara, J., Bueno-Notivol, J., Lipnicki, D. M., Olaya, B., Pérez-Moreno, M., Gracia-García, P., Idoiaga-Mondragon, N., & Ozamiz-Etxebarria, N. (2021). Prevalence of anxiety in health care professionals during the COVID-19 pandemic: A rapid systematic review (on published articles in Medline) with meta-analysis. *Prog. Neuro-Psychopharmacol. Biol. Psychiatry, 107*, Article 110244. https://doi.org/10.1016/j.pnpbp.2021.110244

Saunders, B., Sim, J., Kingstone, T., Baker, S., Waterfield, J., Bartlam, B., Burroughs, H., & Jinks, C. (2018). Saturation in qualitative research: Exploring its conceptualization and operationalization. *Qual. Quant., 52*(4), 1893–1907. https://doi.org/10.1007/s11135-017-0574-8

Schwartz, J., King, C.-C., & Yen, M.-Y. (2020). Protecting healthcare workers during the coronavirus disease 2019 (COVID-19) outbreak: Lessons from Taiwan's severe acute respiratory syndrome response. *Clinical Infectious Diseases, 71*(15), 858–860. https://doi.org/10.1093/cid/ciaa255

Shaban, R. Z., Nahidi, S., Sotomayor-Castillo, C., Li, C., Gilroy, N., O'Sullivan, M. V. N., Sorrell, T. C., White, E., Hackett, K., & Bag, S. (2020). SARS-CoV-2 infection and COVID-19: The lived experience and perceptions of patients in isolation and care in an australian healthcare setting. *American Journal of Infection Control, 48*(12), 1445–1450. https://doi.org/10.1016/j.ajic.2020.08.032

Sun, N., Wei, L., Shi, S., Jiao, D., Song, R., Ma, L., Wang, H., Wang, C., Wang, Z., You, Y., Liu, S., & Wang, H. (2020). A qualitative study on the psychological experience of caregivers of COVID-19 patients. *American Journal of Infection Control, 48*(6), 592–598. https://doi.org/10.1016/j.ajic.2020.03.018

Tan, R., Yu, T., Luo, K., Teng, F., Liu, Y., Luo, J., & Hu, D. (2020). Experiences of clinical first-line nurses treating patients with COVID-19: A qualitative study. *Journal of Nursing Management*, jonm.13095. https://doi.org/10.1111/jonm.13095

Tong, A., Sainsbury, P., & Craig, J. (2007). Consolidated criteria for reporting qualitative research (COREQ): A 32-item checklist for interviews and focus groups. *International Journal for Quality in Health Care, 19*(6), 349–357. https://doi.org/10.1093/intqhc/mzm042

Wang, C., Horby, P. W., Hayden, F. G., & Gao, G. F. (2020). A novel coronavirus outbreak of global health concern. *The Lancet, 395*(10223), 470–473. https://doi.org/10.1016/S0140-6736(20)30185-9

Willig, C., & Rogers, W. S. (2017). *The SAGE handbook of qualitative research in psychology*. Sage.
World Health Organization. (2021). *Coronavirus disease (COVID-19) pandemic. Geneva*.
World Health Organization. (2021). *Coronavirus Disease (COVID-19) Situation Report – 202*.
Yin, Y., Chu, X., Han, X., Cao, Y., Di, H., Zhang, Y., & Zeng, X. (2021). General practitioner trainees' career perspectives after COVID-19: A qualitative study in China. *BMC Family Practice, 22*(1), 18. https://doi.org/10.1186/s12875-020-01364-x