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## Research paper

# 'Who will do it if I don't?' Nurse anaesthetists' experiences of working in the intensive care unit during the COVID-19 pandemic



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## ABSTRACT

**Background:** During the COVID-19 pandemic, the workload on the intensive care unit (ICU) increased nationally in Sweden as well as globally. Certified registered nurse anaesthetists (CRNAs) in Sweden were transferred at short notice to work with seriously ill patients with COVID-19 in the ICU, which is not part of the CRNAs' specialist area. However, limited research has shed light on healthcare professionals' experiences of the pandemic.

**Objectives:** This study illuminates CRNAs' experiences of working in the ICU during the COVID-19 pandemic.

**Methods:** This study used a qualitative method with an inductive approach to interview nurse anaesthetists who worked in the ICU during the COVID-19 pandemic.

**Findings:** The participants experienced ambivalent feelings towards their work in the ICU. They also lacked information, which created feelings of uncertainty and resulted in expectations that did not correspond to the reality. They described that owing to an inadequate introduction, they could only provide "sufficient" care, which in many cases caused ethical stress. Not being able to get to know their new colleagues well enough to create effective cooperation created frustration. Even though the participants experienced the work in the ICU as demanding and challenging, overall, they enjoyed their time in the ICU and were treated well by their colleagues.

**Conclusions:** Although CRNAs cannot replace intensive care nurses, they are a useful resource in the ICU in the care of patients with COVID-19. Healthcare workers who are allocated from their ordinary units to the ICU need adequate information and support from their work managers to be able to provide the best possible care and to stay healthy themselves.

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## 1. Introduction

As of June 2021, more than 176.3 million coronavirus cases (SARS-CoV-2) and more than 3.8 million deaths have been confirmed globally.<sup>1</sup> In Sweden, more than 1.08 million cases have been confirmed and 14 500 inhabitants have died from the SARS-CoV-2.<sup>2</sup> In one region in the southwest of Sweden, 2400 persons have been cared for at the regional hospitals and, among them, 185 have been cared for in the intensive care units (ICUs).<sup>3</sup>

Hence, the COVID-19 pandemic has caused a large number of patients suffering from a new virus. Through the massive arrival of

critically ill patients to the hospitals, the COVID-19 pandemic has radically changed professional practice in ICUs.<sup>4</sup> For example, many patients require advanced care interventions, such as oxygenation with low-flow and high-flow systems and intubation, to be performed quickly. With their expertise, certified registered nurse anaesthetists (CRNAs) usually play an important role in intubation management in anaesthesia and resuscitation. When many patients with COVID-19 require oxygenation and intubation at the ICUs, reorganisations in CRNAs' job functions have been applied to use their expertise within ICU care. Thus, such reorganisations have made it possible for ICUs to receive an increased number of patients and thus respond to the rapidly emerging global need for advanced care.<sup>5</sup>

SARS-CoV-2 is a newly discovered virus that is under continuous research, which means that knowledge about its pathology and

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treatment guidelines may change at short notice.<sup>6</sup> In their study, Rana et al claimed that healthcare workers who participate in the care of patients with COVID-19 have to deal with both the risk of being infected by the SARS-CoV-2 themselves and the risk of suffering from mental health problems such as feeling scared or worried.<sup>7</sup> Research has found that 37.5% of 557 critical care and emergency nurses, representing 26 public hospitals in the region of Madrid, are working with the fear of becoming infected from treating patients with COVID-19.<sup>7,8</sup> In another study, Cannavò et al.<sup>9</sup> claimed that nurses should have adequate personal protective equipment (PPE, i.e., protective gowns or gloves) to build their trust, motivation, and self-confidence. Moreover, among the 557 critical care and emergency nurses in the region of Madrid, 28.3% experience elevated workloads with decreased opportunities to rest while taking on more responsibilities caring for patients with COVID-19.<sup>8</sup> Mental health issues, such as depression, anxiety, stigma, and panic, are more frequently experienced among nurses than before the pandemic.<sup>7</sup> COVID-19–related anxiety is to a higher extent reported by healthcare professionals who use social networks regularly, compared with healthcare professionals who use such networks to a smaller extent.<sup>9</sup> According to a Spanish study including 92 nurses representing two hospitals, the emotional work and workload during the pandemic are a risk for nurses' psychosocial health, whereas the resources, measures, and information available are a protective factor for their psychosocial health. In the same study, further research is proposed to broaden the knowledge about how to protect and care for nurses during their work in a pandemic.<sup>10</sup>

Under normal circumstances, ICU nurses (i.e., nurse with a 1-year master's programme and certification requirements for the ICU) are responsible for the care of seriously ill patients in the ICU in Sweden.<sup>11</sup> During the COVID-19 pandemic, however, the workload in the ICU increased nationally in Sweden, which meant that many CRNAs (i.e., nurse with a 1-year master's programme and specialist degree in anaesthetics and critical care) were transferred at short notice to work with seriously ill patients with COVID-19 in the ICU, an area outside the CRNAs' specialist focus. The ICU nurse and CRNAs' role differs in several aspects, for example; the ICU nurse handles the care of the patient throughout the day and develop short- and long-term plans for the care to be provided with physicians and assistant nurses, whereas CRNAs have shorter patient meetings and are thus less accustomed to developing long-term plans for nursing.<sup>12</sup> CRNAs are also unaccustomed to working with and treating infectious diseases on a daily basis.<sup>13</sup> Similar to ICU nurses, however, CRNAs are responsible for informing and supporting relatives.<sup>12</sup> Since the beginning of 2020, the COVID-19 pandemic has placed great demand on health care and its workers, and CRNAs may be seen as both an important and vulnerable population in the current global society. Currently, limited research sheds light on healthcare professionals' experiences of the pandemic. Therefore, further exploration of their experiences with the COVID-19 pandemic is needed. Hence, this study illuminates CRNAs' experiences of working in the ICU during the COVID-19 pandemic.

## 2. Methods

### 2.1. Design

An inductive qualitative descriptive design was conducted using semistructured individual interviews to obtain CRNAs' experiences of working in the ICU during the COVID-19 pandemic.

### 2.2. Setting and participants

The study was conducted in a medium-sized hospital with one ICU in southwestern Sweden. Written approval was obtained from

the responsible ICU manager. Purposive sampling was used to recruit CRNAs normally working in surgical units at the included hospital. Inclusion criteria were experiences of at least five work shifts in the ICU working with patients with COVID-19 between March and August 2020. Information about the study aim and invitations to participate and to contact the authors [MK, DL] if interested in participating were sent by email to CRNAs. Twelve CRNAs reported their interest in participating. However, owing to heavy workloads, four declined, resulting in receiving oral and written consent to participate from eight CRNAs.

### 2.3. Data collection

During autumn 2020, data were collected using video links owing to pandemic restrictions. The participants chose to remain in their homes. Two pilot interviews with persons with experience of the subject were conducted to validate the interview questions that were further included in a semistructured interview guide (Table 1). Each interview lasted approximately 1 h and was audiorecorded and transcribed verbatim by [MK, DL].

### 2.4. Data analysis

The material was analysed through content analysis,<sup>14</sup> performed in three main phases: preparation, organising, and reporting. Each transcribed interview was read by [MK, DL] several times to understand the essential meaning. Text that responded to the study aim was marked, divided into meaning units, and further condensed and labelled with codes. Differences and similarities among the codes were compared and further merged into sub-categories and categories describing the manifest content. Lastly, an interpretative and solid theme emerged that captured the latent underlying meaning of the content. Trustworthiness of the study was established by using the framework in accordance with Lincoln and Guba.<sup>15</sup> To strengthen credibility, the analysis was characterised by iterative movements in which there was transparency throughout the analysis by reflexion on each meaning and returning to the transcripts if necessary, until agreement emerged among all authors. The intention was to form categories that covered the data and reflected the study aim.<sup>14</sup> To illustrate the original data and enhance the description of the categories, the results section shares some excerpts from the interviews. To strengthen credibility, the analysis was characterised by iterative movements in which there was transparency throughout the analysis by reflexion on each meaning and returning to the transcripts if necessary, until agreement emerged among all authors.

### 2.5. Ethical considerations

The study was designed, planned, and performed according to Swedish law, stating that ethical approval is not needed when healthcare professionals are asked to participate in research about

**Table 1**  
Semistructured interview guide.

Key questions
1. Please describe how you were informed that you would work in the ICU.
2. What expectations did you have?
3. What working task did you receive?
4. Please describe your working environment?
5. How did the collaboration with the other staff in the ICU work out?
6. What is the difference in work content and responsibility between CRNAs and ICU nurses?

ICU, intensive care unit; CRNA, certified registered nurse anaesthetist.

work-related questions.<sup>16</sup> The study followed national ethical regulations and the Declaration of Helsinki.<sup>17</sup> All participants were informed orally and in writing about the study aim and that participation was voluntary and could be withdrawn at any time without any negative consequences. This study was compliant with the CONSolidated criteria for REporting Qualitative research (COREQ) checklist.<sup>18</sup>

### 3. Findings

Eight participants were interviewed, five women and three men, who varied in age (30–54 years) and working experience (1–22 years). One latent theme, four main categories, and ten subcategories emerged from the analysis (Table 2).

#### 3.1. An emotional process from unpredictability and uncertainty to comprehensibility

An emotional process from unpredictability and uncertainty to comprehensibility is the latent theme that emerged and ran as a common thread throughout the result. Initially, the participants experienced ambivalent feelings and uncertainty before working at the ICU. These feelings changed over time. As the participants became acquainted with the environment at the ICU and the work continued, valuable experiences were created and feelings of belonging in the workplace were expressed. This could be likened to an emotional process, from feelings of unpredictability and uncertainty to comprehensibility.

#### 3.2. Being assigned to a new department during a pandemic

The participants described feeling ambivalent when they were informed of their relocation to the ICU. They experienced feelings of excitement, nervousness, and a lack of information, which facilitated a feeling of powerlessness and being treated like an object.

##### 3.2.1. Ambivalent feelings and lack of information

The participants were interested in participating in the care of patients with COVID-19, but they also felt insecure because of limited knowledge available about the virus and how it is spread. Hence, there was ambivalence between the willingness to

contribute to the care of patients with COVID-19 and a fear of the new virus that caused serious illness.

*A part of me figured that 'this is going to be very instructive'. But I was also a little nervous about everything I had read. It was so new when we got there, but you still had time to read and hear about what Stockholm was like. So you felt, what should I add?*

The participants understood that they, as CRNAs, were asked to work in the ICU, as the unit was expected to be heavily burdened. Some expressed uncertainty about what they could contribute to the ICU. As many received their schedule with only a few days' notice, high demands were placed on their ability to adjust and prepare mentally.

##### 3.2.2. The feeling of being treated like an object

The participants described that high demands were placed on them both as professionals and as private individuals to adapt their lives to their employer's needs, which evoked a feeling of powerlessness. They also expressed a wish to become more involved in the planning and to have access to information right from the start. From this, the participants described feeling as though they were being treated like an object.

*That someone just treats you as an object and moves you on. Now you should be here. Now you should ... take patient responsibility. No one asks how you feel or if you want to be somewhere else. You just have to find yourself in it, and it has cost a lot of energy.*

Although the participants accepted their relocation to the ICU, they felt unable to influence their situation. Witnessing colleagues feeling bad, stressed, and negatively affected strengthened the feeling of being treated like an object. The perceived lack of support from managers led to a feeling of dissatisfaction among the participants, which had a negative effect on their wellbeing.

#### 3.3. Expectations did not correspond to reality

The participants had expectations of functioning as a helping hand for the ICU nurses as they had been informed of by their managers, which did not correspond to reality, and stress related to patient responsibility arose.

##### 3.3.1. Helping the ICU nurse

The participants had heard stories and seen pictures via television and radio showing seriously ill patients with COVID-19 and a heavily burdened care service, which created expectations that they would work in conditions similar to those of a catastrophe but without sufficient resources. Others expected a well-planned and structured organisation and thought they would contribute by assisting the ICU nurse with delegated tasks, but routines on how the introduction and transfer of CRNAs to the ICU would work out were insufficient.

*I had been told that we would be an extended hand to the ICU nurses, so maybe I really did not worry so much about it. I thought I would go there, and do what I could, work more as a nurse or something.*

Shortly after receiving a schedule of working hours, they were introduced to ICU work and they realised that they would face much greater responsibility than expected, although they felt it was unclear what role they would take in the care. After a short and sometimes unstructured introduction, including a few individual

**Table 2**  
Overview of theme, main categories, and subcategories.

Theme	
<i>An emotional process from unpredictability and uncertainty to comprehensibility</i>	
Main categories	Subcategories
Being assigned to a new department during a pandemic	Ambivalent feelings and lack of information The feeling of being treated like an object
Expectations did not correspond to reality	Helping the ICU nurse Patient responsibility facilitated feelings of stress and inadequacy
Patient work during a pandemic	Caring for the fragile COVID-19 patient Working with PPE The pursuit of person-centred care
Feeling of having contributed, despite lacking some knowledge	CRNAs competence contributed to feeling an asset The time in the ICU created lessons learned and feelings of pride

ICU, intensive care unit; PPE, personal protective equipment; CRNA, certified registered nurse anaesthetics.

sessions, they learned the most basic routines around the care in which they would be involved.

### 3.3.2. Patient responsibility facilitated feelings of stress and inadequacy

The participants experienced a rapid increase in responsibility that most did not feel completely ready for when they had to take patient responsibility for several seriously ill patients with COVID-19 after only a few work shifts. Doubts about one's own competence evoked a fear of missing something that could cause patient injury, leading to a 'tunnel vision' for some, which meant they developed a behaviour of double-checking themselves and the patient's medical status over and over again. Some felt vulnerable and alone in situations where they were unsure whether their skills were sufficient to care for patients with COVID-19 in a safe way.

*This intense feeling that it may be something you do not even see, that you do not understand that you need to ask about. So, I feel slightly higher stress if I am responsible for patients. You want to do a good job. You get a little performance anxiety that you have to cope with as well. So, you put more energy into examining the patient, you may do it more than once to be on the safe side.*

The CRNAs with previous experience of ICU care and those who had worked for a long time and with seriously ill patients described less stress related to patient responsibility. They saw the ICU nurse as a resource, took the help they needed, and felt secure in their assessments of patients.

## 3.4. Patient work during a pandemic

As the participants learned to care for fragile patients with COVID-19, they felt more secure and performed care more equivalent to person-centred care, despite the PPE. Getting to know their new colleagues eased the work and enabled a better quality of care and continuity in the work.

### 3.4.1. Caring for the fragile patient with COVID-19

According to the participants, patients receiving treatment for COVID-19 in the ICU suffered from severe illness and fragility. Despite having met many seriously ill patients before and heard the media's description of patients with COVID-19, the participants reacted with shock when witnessing how seriously ill the patients were. Some described how the patients deteriorated rapidly after small changes in body position, which was stressful for the participants. By understanding that many patients with COVID-19 had similar symptoms and behaved in a similar way, their experiences helped to develop nursing strategies, for example, change in body position and breathing difficulties.

*It's a little scary, I think, since you have got used to it a bit over time ... the fact that they are so bad ... when you turn [the patient], they desaturate down to 70 or something, and then maybe you know the patient, you have seen it for a few days and you know the patient is recovering, so clearly you can feel much calmer in it now ... the patients with COVID. They look the same.*

Patients who were awake or only superficially sedated expressed considerable worry and anxiety related to air hunger and being afraid of dying from the disease, which the participants found difficult to witness. Moreover, the participants found it hard to witness how treatment in a respirator for a long time effected the patients' general condition.

### 3.4.2. Working with PPE

When being introduced to the work in the ICU, the participants needed to learn about current hygiene routines to care for patients with COVID-19 in a safe way. Initially, the participants found the PPE hot and awkward. The face visor caused headaches, and some participants described how the respiratory protection gave a feeling of shortness of breath. Initially, they experienced a fear of becoming polluted and infecting themselves, as they felt uncertain about the PPE.

*At first, I thought it was a lot of work and I thought like, 'How should I be able to breathe?' It itched and you sweated and it flowed .... Then I decided that before I went home, I should take a shower because I think it feels good not to bring anything [virus] home.*

Caring for patients for several hours in the PPE was described as stressful and made communication difficult, as it was difficult to hear others and they had to speak louder to communicate. This led to initial feelings of anxiety, which disappeared when the work became routine: 'Firstly, I shout [to be heard] when I am dressed in the equipment. They cannot see my facial expressions. I cannot put a hand on their shoulder; I cannot stand physically close to them'.

### 3.4.3. The pursuit of person-centred care

The participants found that all the ICU staff members strived to provide person-centred care. Pictures of relatives, teddy bears, and other gifts left by relatives were given a central place next to the patient. Each patient had a diary in which the staff wrote about how the care progressed and posted pictures of the patient so they could describe the patient's time in the ICU afterwards.

According to the participants, every staff member did his/her utmost to care for the patients, and they described how some meetings affected them emotionally and stayed with them for some time. Situations were particularly difficult when witnessing relatives having to say goodbye to their loved ones by telephone or video link. In these situations, the participants felt inadequate and experienced great difficulty in providing the support they wanted.

*But what I think is most difficult are the meetings with relatives via video link or via telephones .... I had relatives who would say goodbye to their father and you know, I almost start crying when I think about it. I think it's so awful that you have to, in front of a screen, tell what the person has meant to you.*

Before the COVID-19 pandemic, relatives were welcome in the ICU 24 h a day. Owing to restrictions, most of the contact with relatives was by telephone, which was sometimes challenging, as it was difficult to describe a patient's wellbeing over the telephone.

As the participants lacked experience and sufficient knowledge of the care provided in the ICU, they sometimes found it difficult to provide up-to-date information about clinical responses to treatment or patient progress to the relatives.

### 3.4.4. The value of getting to know your colleagues

The participants described that nurses with and without specialist training, as well as assistant nurses from several workplaces, were also called up for duty in the ICU during the COVID-19 pandemic. Many were introduced at the same time and did not know each other previously. Having to meet new individuals before each work shift was described as unsettling, having a negative impact on the efficiency and quality of the collaboration. The collaboration improved when they got to know each other.

*If we worked three nights together, the third night was good. The ICU-staff knew what to expect from me and I knew how they worked. We developed good collaboration, and I felt safe in the routines. But when you met a new ICU nurse who does things differently, it became difficult because I did not have my own routine.*

The participants described a desire to work in a permanent team to get to know each other well and thus achieve continuity, better cooperation, and a safer way of working. The participants also felt that they had been welcomed well; even though the ICU staff had been heavily burdened, they showed an understanding of the complexities of working in a new workplace with little introduction.

### 3.5. Feeling of having contributed, despite lacking some knowledge

As CRNAs, the participants were an asset in the care of patients with COVID-19 in the ICU. They described that several tasks were similar to those they performed in the surgical room. When the lack of specific ICU knowledge arose, they relied on previous surgical room experiences to support their ICU work, for example, their habit of being responsible for and monitoring respiration and circulation.

#### 3.5.1. CRNAs' competence contributed to feeling an asset

The participants experienced that their competence as CRNAs contributed to the care of patients with COVID-19 in the ICU. Being responsible for the patient's breathing and managing the airway was something that was perceived as manageable and safe, as this is a basic competence in their regular work.

*To check the ventilation .... I felt safe with that. Then there were a few different machines, but still you felt at intubation that it was just as familiar.*

The conditions of many patients with COVID-19 required them to be placed in an abdominal body position, which the participants felt safe with, as it is also a common body position during surgery. The participants were also familiar with many of the medications used in the care of patients with COVID-19, which made them feel secure even though the medical indications and doses were different from those they were used to. They also felt that they could contribute to assisting the anaesthesiologist when patients needed to be anaesthetised or intubated. However, some felt that anaesthesia in the ICU was significantly different from that performed during surgery and that the ICU nurse was a significantly better and safer assistant to the anaesthesiologist in the ICU environment.

#### 3.5.2. The time in the ICU created lessons learned and feelings of pride

When summing up their time in the ICU, the participants felt proud of what they had contributed during the COVID-19 pandemic. Working and helping in a global crisis made them realise that they were able to do more than they thought they could before.

Although the work in the ICU was at times perceived as stressful and energy-intensive, the participants gained a lot of lessons learned and experiences for their future work. They felt more secure as CRNAs and became accustomed to handling fragile patients with vascular access devices, tracheostomy tubes, and respirators.

*One thing I take with me is that, even though it was hard, I'm pretty proud that I made it. That I have stood there and done an okay job and that my colleagues there think they have done a good job. I will*

*remind myself that I did a good job. Then I take with me that in a new situation, this is probably possible.*

The participants believed that their experiences would lead to better collaboration between the ICU and surgery staff, as they now have a better understanding of each other's work.

## 4. Discussion

This study focuses on CRNAs' experiences of working in the ICU during the COVID-19 pandemic. The participants initially experienced feelings of ambivalence and uncertainty about working in the ICU; high demands were placed on them as professionals to adapt to their employer's needs. The participants described a lack of information from their managers and a short and unstructured introduction to ICU work, which gave rise to feelings of powerlessness. Before the introduction, they expected to assist the ICU nurses; however, in reality, they had to assume patient responsibility for seriously ill patients with COVID-19. Previous research shows that communication between frontline working nurses and their managers is key to ensuring efficient care management in times of crisis.<sup>8</sup> Furthermore, a structured internship programme has been described as helpful for new graduate nurses when orienting to a critical care area.<sup>19</sup> When healthcare professionals are forced by their organisations to change workplaces, research suggests that professional training of ICU staff with a focus on teamwork may facilitate their ability to cope with particularly acute situations.<sup>4</sup> The participants in this study expressed a desire to work in permanent teams, get to know their colleagues, and gain continuity in the collaboration but reported that teamwork was lacking. The participants had different approaches related to their experiences of working with seriously ill patients. CRNAs with less experience double-checked themselves and the patients repeatedly to avoid missing anything. CRNAs with broader experience saw ICU nurses as resources and took help from them when needed. These differences indicate that CRNAs need individualised introductions when they are relocated to work in the ICU at short notice.

In this study, all participants reported feeling insecure, as there was limited knowledge about the COVID-19 virus and how it was spread; they experienced a fear of becoming infected themselves and uncertainty related to the security of the PPE. In comparison, González-Gil et al.<sup>8</sup> showed that only 37.5% of critical care and emergency nurses are working with a fear of becoming infected from working with patients with COVID-19. Cannavò et al.<sup>9</sup> claimed that nurses should have adequate PPE to build their trust, motivation and self-confidence. In the introduction to the work in the ICU, the CRNAs in this study needed to learn about current hygiene routines to be able to feel secure. During their work in the ICU, the participants became accustomed to wearing PPE. For clinical practice, González-Gil et al.<sup>8</sup> argued that it is crucial to provide nurses with sufficient PPE, training and clinical practice guidelines with clear and precise instructions. These aspects can strengthen nurses' opportunities to work in line with national guidelines and decrease their fear of infection.

The results show that the participants felt stressed about several aspects of working in the ICU; the patients with COVID-19 were more fragile than patients they usually care for in their ordinary workplace and they could deteriorate rapidly from small changes in body position. The workload was high and left little time to give 'a little extra' to the patients. The PPE was found to hinder the care, as patients could not see the CRNAs' facial expressions and CRNAs had to shout to be heard. Another aspect was the difficulty of caring for relatives and describing a patient's wellbeing over the telephone. Stress is the state in which individuals can end up when their

resources are insufficient to manage their surroundings.<sup>20</sup> According to the World Health Organization,<sup>21</sup> every patient should be offered the best possible care and treatment, even when resources need to be redistributed and, in some places, rationed, as in a crisis such as the COVID-19 pandemic. Situations such as these, when resources are perceived as scarce, can give rise to nurses experiencing ethical stress,<sup>2,22</sup> a feeling of inadequacy that arises when healthcare professionals feel unable to provide the best possible care to the patient.<sup>23</sup> It seems as a risk that optimal care cannot be given if caregivers are stressed in various ways. It could be understood that if the participants in the current study experienced ethical stress, further exploration is needed to broaden such knowledge.

A common thread throughout the responses was that CRNAs experienced an emotional process working in the ICU during the COVID-19 pandemic. Initial feelings of unpredictability and uncertainty changed to comprehensibility. In a previous study, many nurses reported stress from their workplace in the pandemic,<sup>24</sup> and a positive relationship has been shown between ICU nurses' stress, anxiety, insomnia, and depression.<sup>25</sup> Women experience higher scores for depression, stress, and anxiety than men.<sup>26</sup> Although men and women participated in our study, more research is needed to draw conclusions regarding such possible gender-related symptoms. However, nurses who are resilient and perceive higher organisational support have lower anxiety related to working with patients with COVID-19.<sup>27</sup> Therefore, healthcare organisations should create opportunities for nurses to reflect on and discuss their experiences of work during a pandemic, as doing so enables them to provide each other with support and suggest workplace adaptations to a pandemic.<sup>24</sup> According to El-Hage et al.,<sup>28</sup> the COVID-19 pandemic should be seen as a wake-up call for public health managers in their work to improve society's preparedness for global health crisis situations. To protect the mental health of nurses' and other healthcare professionals, education, including e-learning, might be helpful to improve communication skills and ability to possess teamwork, when handling psychological problems occurring from treating patients with COVID-19.<sup>29</sup>

#### 4.1. Strengths and limitations

As research about CRNAs' experiences in caring for patients with COVID-19 in the ICU is lacking, the inductive approach was a strength of this study. Although exploring the phenomenon with descriptions from only eight ICU nurses can be seen as a limitation, the data material was rich in nuances and details from their everyday work in the ICU. To achieve credibility, every attempt was made to involve participants with a maximum level of diversity of experience to obtain rich descriptions, which is important for the transferability of the results. To perform the data collection via video link is a strength because the informant could choose where to connect; it was also a way to conduct the data collection without the risk of spreading SARS-CoV-2, but it can also be seen as a limitation, as eye contact is reduced.

#### 4.2. Implications

- This study can be used to anticipate the needs of staff in similar future scenarios, when staff members need to be relocated from their regular unit.
- Connections exist between the experience of being well-informed and the motivation to contribute and help. Even if the information available is sparse and risks change quickly, communicating information early can reduce the risk of

spreading rumours and minimise the creation of false expectations.

- Working in teams where the staff members know each other can contribute to better and more efficient care, with benefits for staff, patients, and relatives.
- The results of the current study suggest that for CRNAs to feel secure from being infected with the COVID-19 virus during their work in the ICU, managers should provide them with adequate PPE with instructions for how to use it and clear hygiene routines for self-protection.
- Nurses' competence and skills develop through work experience and specialist nurse education. It is therefore not possible to replace one nurse directly with another without risking possible consequences for the nurse's health, patient safety, and quality of care. Therefore, introductions should be based on the nurses' general and individual experiences and needs.
- During crisis situations, when specialist competence needs to be transferred from one specialty unit to another to cover staffing needs, it is important to provide a well-structured introduction to reduce the feelings of stress and inadequacy that can be experienced by nurses working outside their specialist area.

## 5. Conclusions

During their work in the ICU, the participants experienced an emotional process; their feelings changed from unpredictability and uncertainty to comprehensibility as they became acquainted with the environment of the ICU. When the work continued, they obtained valuable experiences, which strengthened their feelings of belonging in the workplace.

CRNAs are an important yet vulnerable population in healthcare organisations. When their working environment rapidly changes from a secure place where they have specific knowledge and well-known colleagues to an unknown place where they have to work with patients suffering from a new virus, the lack of information and unfamiliar colleagues may affect the nurses' health, patient safety, and quality of care.

With their anaesthesia nursing competence, CRNAs can be helpful in the care of patients with COVID-19 in the ICU, but they cannot replace ICU nurses in their work.

The results of this study contribute knowledge about CRNAs' experiences of the COVID-19 pandemic, which healthcare organisations and managers in charge of CRNAs could use in their organisation of staff resources and support to CRNAs in situations of crisis.

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#### Conflict of Interest

The authors declare that they have no competing interests.

#### CRedit authorship contribution statement

**Jenny Hallgren:** Conceptualisation, Supervision, Writing - Original Draft. **Margaretha Larsson:** Writing - Original Draft. **Malin Kjellén:** Conceptualisation, Methodology, Investigation, Formal analysis, Writing - Original Draft. **David Lagerroth:** Conceptualisation, Methodology, Investigation, Formal analysis, Writing - Original Draft. **Caroline Bäckström:** Writing - Original Draft.

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