




BMJ Open COVID-19 pandemic: a qualitative study with an opportunity-centric approach from an ICU perspective in a teaching hospital. Upsides worth to secure?

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ABSTRACT

Objectives During the COVID-19 pandemic, the staff in the intensive care unit (ICU) was materially, physically and emotionally challenged. This qualitative study investigated the effects that ICU staff experienced and were considered of value to be permanently implemented.

Setting ICU in an university medical centre during the first wave of the COVID-19 pandemic.

Design An opportunity-centric approach was applied in individual semi-structured interviews to optimise the achieved results and was guided by the theoretical model of appreciative inquiry (AI).

Participants Fifteen ICU staff members (8 nurses and 7 intensivists) participated.

Results Working during the COVID-19 pandemic catalysed interprofessional collaboration and team learning in the ICU on an individual and team level, centred around a common goal: taking care of critically ill patients with COVID-19. The effect of interprofessional collaboration was that provisions were taken care of quicker than usual, without bureaucratic delays. However, this effect was experienced to be transient. Also, ICU staff perceived limited possibilities to help patients and families around the palliative phase, and they perceived a lack of appreciation from higher management. This is a point of future attention: how to make this perceived lack of appreciation more visible to all (ICU) staff.

Conclusion Regarding our primary question, the ICU staff voiced that the direct communication and collaboration are the most important elements of the COVID-19 peak they would like to preserve. Furthermore, it was learnt that consolation and support for family members should not be forgotten. Considering the results, we believe that further research concerning team reflexivity might contribute to (or enhance) our knowledge about working together during and after a crisis.

OBJECTIVES

The COVID-19 pandemic has an ongoing worldwide impact on healthcare. In February 2020, the first patient was admitted to the

STRENGTHS AND LIMITATIONS OF THIS STUDY

- ⇒ We used appreciative inquiry as the basis of our interview guide since this method is suitable to emphasise the positive lessons learnt without neglecting the negative experiences.
- ⇒ Another strength of this study is the mixed group of intensive care unit (ICU) staff (both nurses and intensivists) we have interviewed.
- ⇒ Also, the ICU was an unique environment during the COVID-19 pandemic since the impact of the COVID-19 pandemic was very high on both patients and ICU staff.
- ⇒ A limitation of this study is that the interviews were only held in one single centre.
- ⇒ Another limitation is that the interviews were limited to ICU staff.

intensive care unit (ICU) in the Netherlands, whereas a month later, this number had increased to over 1100 patients nationwide.¹ As the pandemic spread, personnel in the ICU were materially, physically and emotionally challenged. Several studies underlined the high risk of viral contamination necessitating the wearing of personal protective equipment (PPE), which further intensified the work.^{2,3} In addition, ICU personnel worked long days under high work pressure while having concerns about their health and their families and colleagues.⁴⁻⁷ Because of the shortage of ICU staff in relation to the working conditions and workload, elective medical and surgical procedures were suspended, critical care trained staff working in other departments or retired personnel were reclaimed and trainees, as well as temporary healthcare workers, were redeployed.⁸ Participation in other than standard team compositions and interactions, collaboration

and communication between colleagues who were not usually working together provided a real challenge.^{9–11} Communication with and between patients and their families likewise changed. Bedside visits by family members were no longer allowed; video conferencing enabled family members to communicate with their relatives and (para)medical staff. The operational structure of the ICU unit was thus reshaped, and processes were rapidly adapted, as previously shown by other studies.^{12–15} Whereas the mental and physical effects of the pandemic on healthcare workers, family members and patients and lessons learnt have extensively been studied,^{7–9 16–18} it remains unclear which organisational changes benefited work pressure and workload for ICU professionals during (one of) the COVID-19 peaks, and which changes were experienced so valuable that they are worthwhile to maintain implemented permanently, on ICU level or hospital level.

Therefore, we aimed to evaluate which temporary changes in the ICU's organisational structure (eg, different staffing and changed processes during the COVID-19 pandemic) were considered worthwhile to preserve as perceived by the ICU staff.

METHODS

Design

We executed a qualitative study using individual semi-structured face-to-face interviews among ICU staff active during the first peak (between February and July 2020) of the COVID-19 pandemic applying an opportunity-centric approach. We chose individual interviews since we were interested in the individual opinions of the ICU staff members and wanted to prevent possible peer pressure and hierarchical influences. Moreover, it was challenging to gather a larger group of staff at the same time due to busy schedules. The study period was between September and December 2020, just after the first peak. Furthermore, the COnsolidated criteria for REporting Qualitative research (COREQ) checklist for was used.¹⁹

Patients and public involvement

Patients and/or the public were not involved in the design, or conduct, or reporting, or dissemination plans of this research.

Opportunity-centric approach and theoretical model

An opportunity-centric approach was applied, which aims to optimise the achieved results. The theoretical model of appreciative inquiry (AI) was used to guide the opportunity-centric approach. AI has been developed to explore and discover possibilities and positively transform systems and teams in organisations towards a shared vision.²⁰ In its broadest focus, AI involves systematically discovering everything that supports a system when it is most active.^{21–23} AI focuses on a mindset of abundance (what does work) versus scarcity or the problem (what does not work).²⁴ AI is, therefore, valid during a pandemic

since it might just then reach its highest potential for impact in organisations and human systems. Resilience, even during a pandemic, can therefore grow.²⁵

Interview guide

The questions in the semi-structured interview guide were based on the theoretical background (AI); by positively framing these, they were compiled by WS (she/her) and DK (she/her).

The main questions we touched on during the interview were:

- ▶ What have you appreciated while working in the ICU during the COVID-19 pandemic?
- ▶ Which of these items would you like to be maintained in general?
- ▶ What has given you resilience?

Interviews

The interviews were conducted by an experienced researcher (WS) who took field notes during the interviews. The semi-structured interview questions were adapted and probed into rationales behind the answers applied where necessary during the interviews. The interviews were recorded and were held in the ICU or, with a few exceptions, digitally via Microsoft Teams.

Context and setting

The study was performed in the Maastricht UMC+, a university medical centre with 715 beds and a level 3 ICU (60 beds—of which 33 for paediatric/neonatal care) providing a regional coordinating function for ICU patients in the South-East of the Netherlands. During the first COVID-19 wave, the ICU had 56 beds for adult patients with COVID-19 and 16 beds for regular care operational. Usually the patient staff ratio is 1:1, during this peak it was 1:2 during the day and 1:3 during the night. These temporary extra ICU beds were scattered over different departments within the hospital to take care of these high number of severely ill patients with COVID-19.

Participants and sampling

All ICU staff employed during this first peak of the COVID-19 pandemic in the ICU in Maastricht UMC+ between February and July 2020 were eligible for inclusion. Inclusion was performed using convenience sampling combined with purposive sampling to achieve diversity regarding the staff's position (nurse and physicians, respectively), age, gender, experience, expertise and (if applicable) speciality. Inclusion was continued till data saturation was reached.

Invitations to participate were sent by email. We used two lists (one for the nurses and one for the intensivists), which consisted of all staff who had worked in the ICU between February and July 2020. Then we picked every fifth name on the list and compiled a new list. In this new list, we checked whether there was enough variation regarding gender, work experience and age. First, we approached 14 ICU staff members for participation in

our study. After the first invitation, three staff members agreed to participate in the study. The others were sent a reminder but without any success. After that, another group of 15 staff members were invited to participate (by compiling a new list in the same manner as described before). This resulted in another six candidates. As the inclusion faltered, we decided to adjust our sampling from convenience sampling to purposive sampling. We then approached six potential participants personally. They were all willing to participate. In total, we invited 35 candidates.

Data collection and data analysis

We collected demographic data including age, gender and work experience. The recorded interviews were transcribed verbatim and anonymised by trained (medical) students who signed a confidentiality agreement. The participants checked the transcripts for correctness and completeness (member checking). Afterwards, the anonymised interviews were read and independently coded by three female researchers (WS/BM/DK). Differences in coding were resolved by consensus. The data were analysed using standard principles of thematic analysis.²⁶ For the analysis, text fragments were highlighted for correspondence to the categories. Throughout all interviews, we identified key themes by grouping the codes into larger themes. The findings within the categories were discussed among the three researchers until a consensus was reached.

RESULTS

Fifteen ICU staff members (eight nurses, seven intensivists) participated. Their age ranged from 23 to 63 years (intensivists: 37–52 years and nurses: 23–63 years). Their ICU experience ranged between 1–18 years for intensivists (median 8 years) and 1–40 years for nurses (median 12 years). The duration of the interviews was between 20 and 40 min (mean 25 min).

After the categorisation, the following main themes were derived:

1. Burden and benefits of working during COVID-19.
2. Patient and family restrictions increase the emotional burden on ICU staff.
3. Collaboration.
4. Management support and appreciation.
5. Quality of care.
6. Personal and professional support.

These themes will consecutively be discussed with illustrative quotes from the interviews with N(urses) and I(ntensivists) (see [table 1](#)). The term ICU staff is used when we refer to both nurses and intensivists together.

Burden and benefits of working during COVID-19

The intensivists did not experience longer work shifts than usual (10 hours during weekdays and 12 hours during weekend days) but had to work more frequent and busier shifts since more hands were needed during

Table 1 Characteristics of the participants

Staff	Age (years)	Gender	ICU experience
Nurse 1	52	F	20
Nurse 2	26	F	2
Nurse 3	62	M	21
Nurse 4	23	F	1
Nurse 5	60	M	30
Nurse 6	27	F	4
Nurse 7	30	F	4
Nurse 8	63	F	40
Intensivist 1	43	M	8
Intensivist 2	52	M	18
Intensivist 3	41	M	9
Intensivist 4	37	M	1
Intensivist 5	40	F	5
Intensivist 6	41	M	5
Intensivist 7	50	M	15

F, female; ICU, intensive care unit; M, male.

the shifts to be able to care for the increased number of patients admitted and consulted for. They classified COVID-19 as a very interesting disease they had never experienced, and thus working was seen as a challenge rather than a burden.

The services were actually very clearly divided. There were a lot of shifts, but because there were actually many of us, it made the work doable. I1 (43, male, 8 years ICU experience)

ICU staff (nurses and intensivists) had more patients under their care than usual (two to three instead of one), and they had more responsibilities. This resulted in a much higher work pressure where decisions had to be made quickly. However, at the same time, the feeling of ‘us against the virus’ was felt as very positive. Finally, ICU staff agreed that this cohesion would be important to keep in the future.

Yes, I found that feeling of, um, putting shoulders together, I found that really very pleasant, and I think that is also really something we need to maintain. N2 (26, female, 2 years ICU experience)

ICU staff anticipated as much as possible in various ways (mentally and organisation wise) for the arrival of patients with COVID-19. However, at the same time, the impact of these patients on their work burden and treatment options was, of course, largely unknown. They indicated that they had to work hard (long shifts with large numbers of patients under their supervision) to manage this increasing patient group. The treatment of these patients was experienced to be intensive, and the physical

characteristics of the patients (such as their weight) who were admitted made care extra difficult.

In addition to the increased number of shifts and patients admitted, ICU staff experienced extra exhausting shifts because of the necessity to frequently change PPE when moving from a ward with patients with COVID-19 to a ward with patients without COVID-19.

Sometimes it was difficult that you had to work completely isolated, and it is just very tiring with mouth masks on and constantly getting changed and being cautious that you do not infect yourself or your colleagues. N2 (26, female, 2 years ICU experience)

At the beginning of the pandemic, the moral and physical support and appreciation from people outside the medical centre were heartwarming. For instance, there was a huge banner put up on the side of the parking lot of the medical centre with supporting words from football supporters, and ICU staff frequently received food and flowers from local restaurants and shops. But unfortunately, this support diminished as the national restrictions (lockdown) continued.

There was still laughter, people worked hard, but you just get appreciation from each other, also from outside, every night there was a box of, with some goodies from some restaurant ready. So, you already know what you are doing that that is important, which gives satisfaction in what you are already doing, even in such a crisis situation. I1 (43, male, 8 years ICU experience)

Patient and family restrictions to prevent the spreading of COVID-19 increase the emotional burden on ICU staff

During the beginning of the pandemic, the medical centres' higher management (comparable to other Dutch hospitals) ruled that visitors were not allowed in departments with patients with COVID-19, even when patients were terminally ill. ICU staff generally agreed they felt morally distressed not allowing families to visit. Usually, families are the prime information source for the admitted and intubated patients, and now the ICU staff felt that they did not know anything about admitted patients, except their names and underlying illness, COVID-19 and its sequelae. Furthermore, ICU staff felt that all patients were very similar and more or less lost their identity because of the large communalities in their clinical course. Usually, for ICU patients, posters are hung close to the bed with the patient's hobbies, name and personal information on it, filled in by family.

We get a lot of information from the family, especially for intubated patients. But they were not in the picture now, so it really became a kind of numbers work, rather than personal. N3 (62, male, 21 years ICU experience)

However, later during the first peak, the family could see and talk to their loved ones via Zoom on tablets,

making it possible to gather more personal details about the admitted patient.

Nevertheless, physical contact was essentially impossible. Especially when patients were in the palliative phase without being surrounded by their family and friends, the impact on ICU staff was enormous. They often felt despaired, unable to allow a proper, dignified and respectful farewell to loved ones. Ultimately, all interviewed ICU staff agreed that they never wanted to deal with not allowing visits to patients or patients to die all alone again, regardless of the circumstances.

It was terrible in the first period that patients died without family members being able to say goodbye. That breaks your heart, that is not how you want to leave the world yourself. N5 (60, male, 30 years ICU experience)

Collaboration

At the time of the first peak, intensivists, nurses, paramedics, students and recently retired staff from outside of the ICU who volunteered were scheduled to work in the ICU, with or without a preparatory course, to help. This help was highly appreciated (by the intensivists) and at the same time experienced as a burden (by the nurses). Also, the nurses felt a high degree of responsibility: they had to take care of more patients despite extra staff from outside of the ICU who were not qualified for all actions that the ICU staff usually executes. As a result, the permanent ICU nurses felt that they had to direct others on top of providing care for their patients.

Normally, you are familiar with your team, and you know how everyone functions, and now you were working in other collaborations and people you did not know beforehand or maybe had seen once. N1 (52, female, 20 years ICU experience)

ICU staff (both clinicians and nurses) noticed that the interdisciplinary and interprofessional collaboration between and with other departments significantly improved during the first wave. One common goal was identified: treating patients with COVID-19. Official rules and viscous agreements were subsequently pushed aside by employees from other departments to support each other as quickly and as well as possible.

I think in some ways, or yes actually in all ways, that the greater good was more important than personal opinions. This is bigger than ourselves and all the disagreements that there are or struggles from the past that's not important now. N2 (26, female, 2 years ICU experience)

After this initial promising spin-off of working together on one common goal, ICU staff noticed that as the pandemic continued and to the outside world appeared to decline, the other non-ICU departments likewise returned to 'business as usual'. They reported that slowly

but surely, the benevolence of other departments diminished, and bureaucracy returned.

The opening of new temporary 'ICUs' (extra ICU beds in several departments) and the involvement of colleagues from other departments resulted in new interprofessional team compositions, which were also sometimes hard for ICU staff to get used to. Especially the nurses occasionally experienced difficulties adapting to those new working conditions. Nevertheless, most intensivists agreed that the atmosphere was commonly positive and inspiring.

I have to say that one time it was busy, and you saw many colleagues from outside that came to help, both nurses and doctors. There was an enormous positive vibe, and I always get excited when other people get excited too. So, it was very much that feeling of, together we will go for it. I1 (43, male, 8 years ICU experience)

Management support and appreciation

To a greater or lesser extent, ICU staff felt supported by their management team. Most of them felt taken seriously and involved when the plans for upscaling were created. These plans consisted of the following steps to be taken when the admission rate of patients with COVID-19 would even further increase (hypothetically). Intensivists indicated that, due to efficient leadership, the next step in upscaling plans was ready to be executed whenever the number of admitted COVID-19 would even further increase. Decisions were executed quickly: it was evident that the ICU management was in the lead concerning ICU COVID care. Also, the communication between management and ICU staff on the work floor was experienced as sufficient and efficient. The medical centre had an outbreak management team consisting of qualified clinicians, in which the intensivists were represented. They had the authority to contribute to the dialogue on a medical centre level and enabled the rapid decision-making cycles regarding the organisation of COVID-19 care in the hospital.

The fact that the next steps were always clear of okay if we only have so many beds free now, then we will go to the next stage and then we have to do this and this and this, and that gave uh at least for me as a staff member that gave much peace. I5 (40, female, 5 years ICU experience)

The medical centre's higher management undertook several actions to show their appreciation (such as handing out flowers and sending postcards to all staff members), but not all ICU staff always noted these due to busy clinical activities. Furthermore, as these efforts were not consistently recognised, some of the nurses indicated that they perceived a lack of support from higher management.

The organisation could have shown more commitment. No idea what they were doing during that

COVID period. We did get a daily update from the IC, but we did not really get updates on the organisation that they were involved with or whether they were doing anything for us. N4 (23, female, 1 year ICU experience)

Quality of care

Some of the nurses admitted that they had the feeling that, due to the high workload, only the most basic care could be given, resulting in suboptimal care for the most critically ill patients. Also, staff who were not trained to work in an ICU were employed there with the best intentions, but this was perceived likewise to affect the quality of care. Finally, some nurses had the impression that hygiene rules were followed less strictly and that fewer incident notifications due to the high workload. This could be caused by the fact that personnel from other departments was working in the ICU (according to the interviewees) and was unknown of the rules regarding hygiene, but also workload could be a reason.

In that period, things have not been handled according to our protocol, of course, you cannot accept that in normal time. N5 (60, male, 30 years ICU experience)

Several intensivists reported being worried about the level of exposure and resulting expertise level of fellows. Their worries focused mainly on the fact that the exposure and corresponding knowledge level of fellows would resultantly be high regarding infections (such as COVID-19) but low regarding other diseases since these were (almost) not present during the COVID-19 pandemic. Subsequently, they perceived that this group of intensivists would be only and perhaps suboptimally trained in a limited number of diseases.

The extent of teaching, what worries me is that I also notice to myself and my fellow intensivists, and I also notice to the fellows that the stretch is also just gone you cannot keep burdening people in this way, and you know at the end of the line they have to be intensivists. I7 (50, male, 15 years ICU experience)

Personal and professional support

ICU staff experienced strong support from their partners and families. As a result, there was time to rest at home, and especially the nursing staff mentioned that they were allowed to talk about their experiences with their partners. However, differences between nursing staff and intensivists were evident. The latter felt even more at ease than the nursing staff since their partners even more covered childcare. On top of this, due to COVID-19, personal calendars for ICU staff were empty anyway (eg, no celebrations and no sports games), so there was ample time to reload for the next shift.

If I look at it very selfishly, it was a top time. It meant I worked six days, and then if I had time off, it was

during the week. The weather was pretty nice. So, I have never been on the bike as much as I have been this year. I2 (52, male, 18 years ICU experience)

Also, the appreciation from colleagues outside the ICU and even outside the medical centre was very much valued by ICU staff. Because of this support, they experienced more recognition for their work in the ICU. Intensivists also stated that friends and family now understood much better than before what their work entailed.

There was a lot in the news about the ICU. I do not have to explain now what an intensivist is. Everybody knows that now. Not only within the hospital but also outside the hospital. I7 (50, male, 15 years ICU experience)

DISCUSSION

This study showed that working during the COVID-19 pandemic catalysed interprofessional collaboration and learning in the ICU on an individual and team level, centred around a common goal: taking care of critically ill patients with COVID-19. The consequence of being on the same page during the initial phase of the pandemic was that all kinds of provisions were taken care of quicker than usual, without delays caused by bureaucracy. Nevertheless, unfortunately, this effect was experienced to be transient by the ICU staff.

Departments outside of the ICU helped to reduce the workload for the ICU. Working agreements and rules from before the crisis were considered less important, which was highly appreciated by ICU staff. However, the study also showed that after the first peak of the crisis, the willingness to continue this working method diminished again to a point where it is business as usual, and bureaucracy is standard.

The ICU was in the lead with telling the board of directors what was needed to be done. This led to the observation that ICU management was always a step ahead of the COVID-19 crisis in making plans when the admission rate of patients with COVID-19 would increase even further. In addition, the intensivists experienced the organisation of COVID-19 care as efficient and effective during this period.

Literature shows that clear roles of team members, commitment to a common goal, heterogeneity of knowledge, skills, competencies and experiences of members, mutual trust and good leadership are the key characteristics of successful teams.^{27 28} Also, a dedicated crisis management teams is a very important factor during a crisis. team.²⁹ Our study showed that some of these elements were present within our organisation, such as the commitment to a common goal and the presence of a crisis management team. This contributed to a cooperative atmosphere. However, the level of knowledge, skills and competencies of the help from outside of the ICU was lower than expected by the ICU nurses. These difficulties

of working in another department and the importance of acknowledgement by colleagues were also found in other studies.^{30 31}

This current study also found that the highest impact on ICU staff resulted from the fact that patients died alone. This finding is also shown in other studies which report that this fact lacked the desired dignity, and the burden was higher for relatives even though ICU staff did their best to accompany and dignify death.^{32 33}

Strengths and limitations

The ICU was an unique environment during the first COVID-19 peak, but considering the global nature of the pandemic, and the absence of pre-existing protocols and guidelines for the disease, the novel findings could still be generalisable to other departments, for example, the support of students and nurses from other disciplines helping out. We interviewed ICU staff members individually and also by anonymising the results we assured that the participants could freely discuss everything they wanted to share.

We took into account the experience of the interviewed staff members. Also, we asked questions how the situation in the hospital had an effect on their situation at home and how could have an influence on the experienced impact. However, we only interviewed ICU staff in a single hospital. The impact in other centres could have been experienced differently. Probably there were even more or significantly less patients with COVID-19, the staff rating could be higher or the support from higher management could be different. At the same time, working methods were comparable since the heads of the ICUs regularly discussed the way of working and had the same measures (such as limiting the visitors). But still, the experience staff had in our centre could be different from the experience other ICU staff had. However, we have also seen in other European countries that the workload for health professionals has been enormous.^{30 34-36}

We took time for the data collection during and after the peak of the first wave. We paid attention to include a wide range of intensivists and nurses of difference age, different gender and different level of experience. Also, we did a member check in which the interviewees could read the interviews and could add or adapt if necessary. Three researchers individually coded the interviews and agreement was reached via consensus. The use of an interview guide resulted in the same questions for all interviewees, but we inquired on certain topics. Finally, we used only one method for data collection which is a slight disadvantage.

Also, we made a clear research protocol in which the setting, methods, research questions and the used theory was described. During the research we have stucked to this protocol. Only the inclusion of the participants was harder than expected, therefore we have slightly changed this procedure. Two of the three executive researchers were no part of the existing ICU team, therefore they

did not have any premise or opinion of the experiences within the ICU during the COVID-19 pandemic.

Furthermore, the interviews were limited to ICU staff; this could be a reason for limited comparability to other studies in which a more mixed group of clinicians (physiotherapists, dieticians, pharmacists, radiologists) have been interviewed.^{31 36} Unfortunately, we ended up with an unequal gender distribution in the group of intensivists, with a male predominance. This could also have had an influence on the results since male intensivists reported, for example, more free time than female intensivists. This could be explained by the fact that women, in general, are more likely than males to be responsible for child-care or schooling and household tasks.³⁷ Also, we could have added patients and their families to the interviewees to add their perspectives on, for example, the visitation regulations.

Finally, we focused on the first wave of the COVID-19 pandemic in this study. Comparing the interviewees' experiences in the second and/or third wave could have added new insights. However, this first evaluation already showed good insights into the positive and negative experiences of the ICU personnel during their work during this first peak.

Conclusion and recommendations

Regarding our primary question, the ICU staff voiced that the direct communication and collaboration are the most important elements of the COVID-19 peak they would like to preserve. Furthermore, it was learnt that consolation and support for family members should not be forgotten.

The limited contact with family has been morally distressing for ICU staff; without knowledge about the person they treat makes it difficult to see them as individuals. Therefore, our advice is to focus more on sharing information concerning the individual patient among care staff, especially in a crisis. During the interviews, some possible solutions were proposed. The posters that usually hang close to all patients could still be used, although the family was not present to fill them out. Supporting personnel, like administrative staff, could contact the family to help fill out this poster. It would have made the work for ICU staff more personal.

We also learnt that ICU staff never again wants to deny visitors to see their next of kin, especially when patients are in the palliative phase. Furthermore, the authors of this manuscript believe it could be helpful to have a 'pool' of trained ICU nurses to deploy in a crisis. However, at the same time, the specialisation to become an ICU nurse takes several years; thus, it will take some time to fill this 'pool'. Luckily, we have seen that ICU staff is willing to prioritise their work in such a crisis so patients and care, in general, can beat the pandemic.

ICU nurses had the perception that they could not meet the usual high standards of care. A potential solution could be debriefing, ICU nurses could then discuss their concerns at the end of their shifts, which prevents them from remaining worried, and possible quick fixes

could be found. The effectiveness of these debriefing sessions should be investigated further in the future.³⁸

To improve perceived quality levels of care, we think that nurses also should be encouraged to develop and co-create ideas of which the management subsequently supports implementation.

Also, the perception of a lack of appreciation by the higher management of the hospital was remarkable. This is a point of attention for the future; how to make their efforts more visible to all ICU staff. Considering the results, we believe that further research concerning team reflexivity might contribute to (or enhance) our knowledge about working together during and after a crisis.

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Contributors DK and WS conceived and designed the study with input from RJMWR and ICCvdH. DK and WS collected the data. DK, WS and BM conducted the data analysis, with input from ICCvdH, WNVN and RJMWR. Data were interpreted by DK, WS and BM, with input from ICCvdH, WNVN and RJMWR. DK wrote the first draft of this manuscript with input from WS, BM, WNVN, ICCvdH and RJMWR. RJMWR was guarantor for this study. All authors made revisions to the manuscript and approved submission of the final manuscript for publication.

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Provenance and peer review Not commissioned; externally peer reviewed.

Data availability statement Data are available on reasonable request. Data will not be made available until 1 year after reporting of the final results of this study. Data are available on reasonable request. The data consist of the manuscripts of the interviews. Requests for sharing of deidentified individual patient data should be sent via email to the corresponding author and will be reviewed on a case-by-case basis by the authors. In case the request is approved, the receiving party agrees to the applicable terms and conditions in a data sharing agreement, after which the data will be made available.

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