







# BMJ Open Healthcare providers' perceptions and expectations of video-assisted debriefing of real-life obstetrical emergencies: a qualitative study from Denmark

Lena Have Rosvig <sup>1,2</sup>, Stina Lou <sup>2,3,4</sup>, Lone Hvidman <sup>5</sup>, Tanja Manser <sup>6</sup>, Niels Ulbjerg <sup>2,5</sup>, Ole Kierkegaard,<sup>1</sup> Lise Brogaard <sup>2,5</sup>

**To cite:** Rosvig LH, Lou S, Hvidman L, *et al.* Healthcare providers' perceptions and expectations of video-assisted debriefing of real-life obstetrical emergencies: a qualitative study from Denmark. *BMJ Open* 2023;**13**:e062950. doi:10.1136/bmjopen-2022-062950

► Prepublication history and additional supplemental material for this paper are available online. To view these files, please visit the journal online (<http://dx.doi.org/10.1136/bmjopen-2022-062950>).

Received 16 March 2022  
Accepted 23 February 2023



© Author(s) (or their employer(s)) 2023. Re-use permitted under CC BY-NC. No commercial re-use. See rights and permissions. Published by BMJ.

For numbered affiliations see end of article.

**Correspondence to**  
Dr Lena Have Rosvig;  
lenahede@rm.dk

## ABSTRACT

**Objectives** Video-assisted debriefing (VAD) of real-life obstetrical emergencies provides an opportunity to improve quality of care, but is rarely used in clinical practice. A barrier for implementation is the expected mental reservations among healthcare providers. The aim of this study was to explore healthcare providers' perceptions and expectations of VAD of real-life events. **Setting** Participants were recruited from two Labour and Delivery Units in Denmark. In both units, VAD of real-life obstetrical emergencies had never been conducted. **Participants** 22 healthcare providers (10 physicians, 9 midwives and 3 nursing assistants). During the study period (August–October 2021), semi-structured, individual interviews were conducted. Interviews were analysed using thematic analysis.

**Primary and secondary outcome measures** A qualitative description of healthcare providers' perceptions and expectations of VAD of real-life events.

**Results** Three major themes were identified: (1) *Video-assisted debriefing (VAD) as an opportunity for learning*: All participants expected VAD to provide an opportunity for learning and improving patient care. All participants expected the video to provide a 'bigger picture', by showing 'what was actually done' instead of 'what we believed was done'. (2) *Video-assisted debriefing (VAD) as a cause for concern*: The primary concern for all participants was the risk of being exposed as less competent. Participants were concerned that being confronted with every minor detail of their clinical practice would enhance their self-criticalness. (3) *Preconditions for video-assisted debriefing (VAD)*: Participants emphasised the importance of organisational support from management. In addition, creating a safe environment for VAD, for example, by using only expert debriefers was considered an essential precondition for successful implementation.

**Conclusions** The risk of being exposed as less competent was a barrier towards VAD of real-life events. However, the majority found the educational benefits to outweigh the risk of being exposed.

## INTRODUCTION

Ensuring high performance in emergency obstetrics is a challenge worldwide. Audits into

## STRENGTHS AND LIMITATIONS OF THIS STUDY

- ⇒ Healthcare providers were interviewed prior to implementation of video-assisted debriefing.
- ⇒ The interviewed healthcare providers' responses reflect an actual rather than hypothetical situation.
- ⇒ The sampling of data included both physicians, midwives and nursing assistants.
- ⇒ We continued data sampling until sufficient power had been obtained.
- ⇒ All participants had some experience with being filmed during obstetrical emergencies for research purposes, but using these videos for debriefing and feedback was new to all participants.

maternal care reveal that adverse outcomes in obstetrical care are frequent, both in low and high resource settings.<sup>1–3</sup> Initiatives that have demonstrated an effect on improving obstetrical care include education, simulation-based training, checklists and debriefings.<sup>4,5</sup> A complementary approach likely to improve clinical practice could be video-assisted debriefing (VAD), where all team members collectively review a video recording of the real-life event as part of a debriefing session.<sup>6</sup> VAD has been found to improve the performance of trauma teams<sup>7–9</sup> and neonatal resuscitation teams.<sup>10,11</sup> However, VAD of real-life events is considered controversial for routine use due to ethical, legal and technical challenges.<sup>12–14</sup> In addition, VAD of real-life events has never been implemented at the Labour and Delivery Unit. The first step towards introducing VAD of real-life events at the Labour and Delivery Unit at Horsens Regional Hospital, Denmark, and at Aarhus University Hospital, Denmark, has been solved by (1) an automatic recording system designed specifically to record obstetrical emergencies and (2) an established procedure that ensures informed consent from all participants.<sup>15,16</sup> Nevertheless, perceived



challenges related to the motivation and support of healthcare providers, their mental reservations associated with reviewing videos and concerns regarding being exposed may impede successful implementation of VAD of real-life events.<sup>14</sup> Previous research on these barriers has been sparse.<sup>14 17</sup>

We aimed to explore healthcare providers' perceptions and expectations of VAD of real-life events at the Labour and Delivery Unit to identify what barriers to overcome for VAD to be implemented successfully.

## MATERIAL AND METHODS

### Design

An explorative qualitative research design was chosen, and a qualitative interview study of healthcare providers was conducted.<sup>3</sup> The Standards for Reporting Qualitative Research was used to improve transparency of the study.<sup>18</sup>

### Setting

The study was conducted at two Danish Labour and Delivery Units, maternity care level II and maternity care level III, respectively.<sup>19</sup> In both hospitals, VAD of real-life obstetrical emergencies had never been conducted. Video recording of real-life events had however been introduced for research purposes,<sup>15</sup> but no feedback was given to healthcare providers. In the two hospitals, all 18 delivery rooms were equipped with two to three cameras and a microphone. This recording system was automatically activated in case of emergencies by the presence of the physician's phone.<sup>16</sup> Initially, some healthcare providers expressed a concern towards the potential use of videos for malpractice lawsuits; however, this was overcome by emphasising that video-recording was based on consent from all participants (women, partners and healthcare providers) and for research purposes only. Furthermore, explicit procedures ensured confidentiality, safekeeping and destruction of videos. All healthcare providers in the participating hospitals were trained in simulation-based team training once a year (and thus familiar with the debriefing concept). In addition, cases of severe adverse maternal or neonatal outcomes were debriefed in both units (a rare but known phenomenon).

The organisation at Labour and Delivery Units in Denmark are characterised by a high degree of cross-functional cooperation between midwives and physicians. Normal labour is managed by midwives and the physician is only involved in the case of pathology.

### Participants

Healthcare providers from the Labour and Delivery Unit in the participating hospitals were recruited through a combination of convenience and purposive sampling strategy across profession and experience. First, all potential participants were informed and invited to participate in the study via emails and posters. Thirteen participants of different professions volunteered. Subsequently, 9 participants were purposively recruited to ensure that all professions and experience levels were appropriately represented (11 were invited, and 2 declined due to lack of time). Inclusion continued until sufficient information power had been obtained.<sup>20</sup> A total of 22 participants were interviewed (table 1).

### Data collection

All interviews were conducted between August 2021 and October 2021. Participants were given the option of a face-to-face or telephone/video interview (table 1). Prior to the interview, participants were reformed about study purpose, anonymity as well as their right to withdraw consent at any time. An audio-recorded oral consent was obtained.

Interviews were conducted using a semi-structured interview guide with open-ended questions<sup>3</sup> developed by the research group, based on the international literature<sup>21</sup> and on the authors' clinical experience (online supplemental file S1). The interview guide was tested in a pilot interview without any further corrections.

The interviews lasted 13–24min and were performed by LHR. In all interviews, participants were encouraged to speak freely. Reflexivity on how the composition of the research group may have affected the research process is presented in box 1. All interviews were digitally recorded, transcribed verbatim and rendered anonymously before coding and analysis.

**Table 1** Characteristics of participants

| Description                  | n  | Interviewed |       | Experience with debriefing |              |
|------------------------------|----|-------------|-------|----------------------------|--------------|
|                              |    | Present     | Phone | Simulation*                | Actual care† |
| Midwife, experience <3 years | 3  | 0           | 3     | 2                          | 2            |
| Midwife, experience ≥3 years | 6  | 4           | 2     | 4                          | 6            |
| Nursing assistant            | 3  | 3           | 0     | 3                          | 3            |
| Resident physician           | 6  | 2           | 4     | 3                          | 5            |
| Attending/consultant         | 4  | 2           | 2     | 3                          | 4            |
| Total                        | 22 | 11          | 11    | 15                         | 20           |

\*Simulation-based in situ obstetrical team training with video-assisted debriefing.  
†Severe adverse neonatal or maternal outcomes are debriefed a few days after the event (without video).

## Box 1 Reflexivity

In qualitative research, it is important to consider reflexivity, that is, how the researcher's positions and preconceptions may have influenced the research and the derived results.

All interviews were conducted by LHR, a PhD student and a fellow in Obstetrics and Gynaecology, who had some experience in qualitative research from conducting a previous interview study. During the research process, LHR received continuous supervision from SL, a senior social scientist with expertise in qualitative research. In addition, the preliminary findings and final analysis were repeatedly discussed by the interdisciplinary research team that included experienced clinicians and researchers from the fields of obstetrics, anthropology and psychology. This researcher triangulation was used to enhance the trustworthiness of the analysis.

At the time of the interviews, LHR was employed at both participating departments, and she was the primary researcher for the VAD implementation study. The potential implications of this insider researcher position were discussed in the research team. Thus, it was identified as a potential challenge that some participants might withhold negative comments and concerns in order not to damage future working relationships with LHR and/or the research group. This challenge was explicitly managed by encouraging participants to speak freely and stating that *all* perspectives, especially concerns, were important for the analysis and could positively impact the implementation process. However, the insider position of LHR was also a strength to the study as she was able to identify and recruit selected participants that added to maximal variation in the sample. Being a 'familiar face' also made it easy to establish rapport with participants. Furthermore, LHR's informal conversations with colleagues provided important input to relevant topics for the interview guide.

## Data analysis

Thematic analysis<sup>22</sup> was used to identify patterns in data. All materials were thoroughly read, and a list of initial codes were generated. After a discussion of codes by all authors, three interviews were test-coded independently

by LHR and SL, and any discrepancies between the coding were discussed and agreed on to ensure consistent coding. Subsequently, all interviews were coded by LHR using NVivo V.12 software. The coded material was read and sorted into main themes and subthemes in a thematic map (figure 1), which was discussed among all authors. Additionally, the themes were investigated in relation to the entire data set looking for disconfirming evidence.<sup>3</sup>

## Patient and public involvement

Informal conversations with healthcare providers at the participating departments inspired and guided the design of the present study including research questions. Participants were not directly involved in the data analysis, but following the interviews, preliminary findings were discussed with participants to validate and/or challenge preliminary understandings and interpretations. As a result of this study, the participants' perspectives will guide the implementation of VAD of real-life events at the departments.

## RESULTS

Overall, the interviewed healthcare providers were positive towards the introduction of VAD of real-life obstetrical emergencies. The three central themes in the participants' perceptions and expectations of VAD were identified during analysis: (1) *Video-assisted debriefing (VAD) as an opportunity for learning* by providing new insights into individual and collective clinical practices. (2) *Video-assisted debriefing (VAD) as a cause for concern* due to potential exposure of professional incompetence. (3) *Perceived preconditions for video-assisted debriefing (VAD)* to be a successful tool for development of clinical practice (see figure 1 for overview of themes and subthemes).

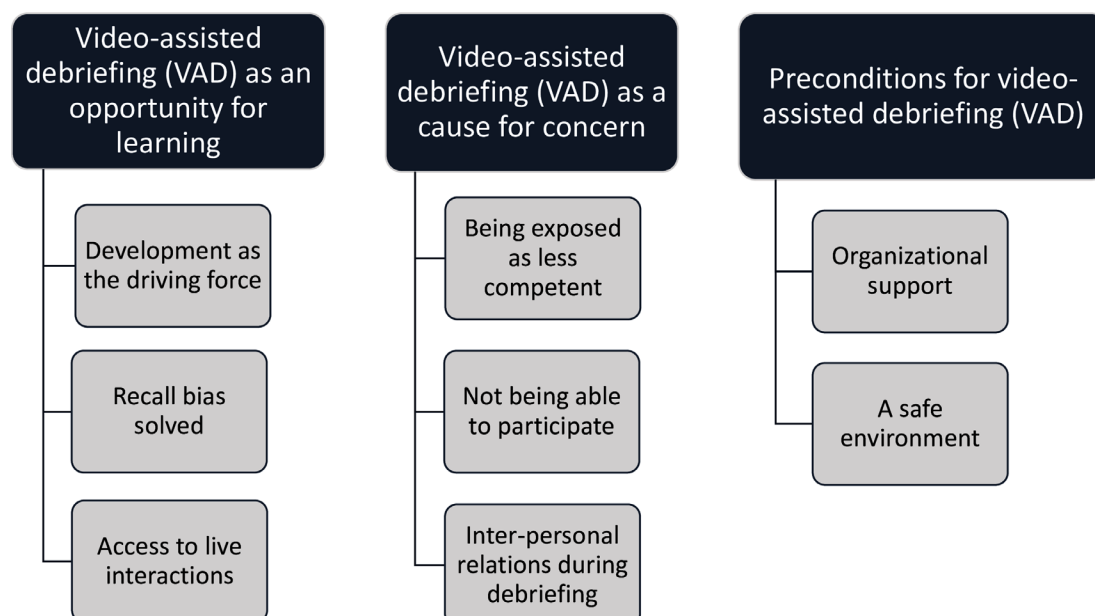


Figure 1 Thematic map.



## Theme 1: video-assisted debriefing (VAD) as an opportunity for learning

### Development as the driving force

In the interviews, most participants expressed an explicit desire for continuous professional development and the introduction of VAD of real-life events was seen as a potential tool for learning. Half of the participants had positive experiences with debriefing in simulation-based team training.

I actually think that the debriefing is a really humane and comfortable process to be in. And you learn so much from it. It is not a space for you to be criticized, and I think that it works really well. (Attending physician)

Several participants described how these positive experiences contributed to their high expectations towards the educational value of VAD of real-life events. The prospect of being able to view and discuss—difficult—clinical practices with colleagues was appreciated as an opportunity for professional development, individually and collectively, and ultimately as a contributing factor to job satisfaction and a good work environment.

But when you sit down and talk [with colleagues], it supports the general work environment. That you have related to each other and discussed things. Maybe even shown vulnerability. I believe that it benefits the personal as well as the professional work environment. (Resident physician)

Thus, the main motivating factor for accepting VAD was professional aspirations. Professional development was a consistent driving force among all professions and among all levels of experiences, and analysis reveals a core of professional identity within participants driving them towards a higher professional level.

### Recall bias solved

Many participants described how situation awareness can be challenged during emergencies, which can make it difficult to remember and thus to discuss performance afterwards. Adding video recordings to the debriefing was understood as an opportunity to pause and revisit, discuss and learn from actual events. Most participants suggested that the videos would reveal less appropriate routine practices and ‘blind spots’ that were probably indiscernible in stressful emergency situations.

I think that when you have the video and you are able to revisit what happened in the delivery room—it really makes a positive difference. Because very often, there will be details that you don’t remember. And I have a feeling that it’s exactly those details that you can learn from the most. (Midwife, experience <3 years)

Most participants expressed curiosity about the alignment of their recall of the case and the actual behaviour captured on video. They emphasised how this potential

misalignment could produce valuable information and generate new learning and, ultimately, improved care.

But I think that it [video-assisted debriefing] will be great. And it’s an excellent way of discovering “what is it that we actually do?”. To find out where there’s room for improvement, you need to look at what we actually “DO” and not just what we “BELIEVE WE DO”. (Resident physician)

Most participants made comments similar to the quote above and thus indicated a potential in revealing this misalignment. Videos were perceived to provide access to tacit knowledge and unacknowledged practices that are missed in ‘normal’ debriefings due to unawareness or forgetfulness. Thus, these new insights were perceived as key to adaptation and development.

### Access to live interactions

Being able to view the emergency situation unfold from an outside perspective was considered intriguing by many participants. A few participants emphasised the opportunity to lean back and learn from watching admired, senior colleagues ‘in action’. However, the majority of participants focused mainly on the opportunity to learn from reviewing their own performance:

Well, you always think you do things in a certain way [...]. So being able to get some feedback directly on that [could be rewarding]. I really believe that I could benefit from video-assisted debriefing personally. (Attending physician)

For example, several participants suggested that they would be more likely to accept comments or feedback from others, if these comments were supported by video ‘evidence’. In addition, several participants were curious about their attitude and appearance, and how their body language and communication would affect the woman and partner as well as the team and how their actions contributed to the team dynamic and collaboration.

Being able to see yourself and your own role in the event [would be interesting]. Because as a physician, it can sometimes be difficult to enter a delivery room—because what is expected of me? And do I communicate clearly enough? (Resident physician)

Several participants expected to gain new insights into how roles were allocated in the team, for example, leadership appointment and the redistribution of roles, such as when new team members entered the room. In addition, the atmosphere in the room was an expressed learning goal, for example, how to keep the atmosphere calm, even when the event seemed chaotic. Some participants mentioned that the ‘outside view’ provided by video could possibly provide a better understanding of how clinical actions affected the patient, for example, to see if the woman seemed in pain or the partner was in distress and how this was managed. Similarly, many participants mentioned that video could contribute to improved

communication between the team and the patient, for example, by showing if, how and by whom the woman and partner were informed during the event.

Viewing live situations was hoped to provide new information about clinical practice and routines and thus offer a new starting point for collective, professional development towards superior clinical performance. For example, several participants were curious about the actual execution of treatment protocols in obstetrics emergencies, and believed that VAD had the potential to create an opportunity for reflection and discussion of clinical practice, otherwise not available.

## Theme 2: video-assisted debriefing (VAD) as a cause for concern

### Being exposed as less competent

As all legal issues regarding safe data protection and legal issues had already been satisfactorily solved, the main concern among participants was the risk of being exposed as less competent by the video.

Being exposed, if you have some lack [of knowledge] or something that you are not updated on. And in some way maybe also feel that you are being reprimanded. (Attending physician)

Thus, 'being exposed' encompassed feeling professionally inadequate in a setting where high performance is a core value and in revealing this (true or perceived) inadequacy to colleagues.

However, the stakes differed depending on levels of experience. The less experienced participants expressed concern about having potential lack of skills exposed in front of senior colleagues. They were painfully aware of the many skills and practices that they had yet to master and some worried about being easy targets in debriefings. More experienced participants expressed concern about not being able to live up to the perceived high expectations from colleagues concerning their skill level. Particularly for the very experienced consultants, lack of skills was perceived as unacceptable and getting feedback from colleagues was unfamiliar territory. Additionally, several participants described themselves as self-critical and were concerned that being confronted with every minor detail of their clinical practice would enhance this self-consciousness and self-criticalness.

I think that it could hurt my ego, if I in some way realized that I haven't been as amazing as I wanted to be. I would consent [to video inclusion], because I believe that it is a great opportunity for learning. But I am sure that my ego would prefer believing that I'm just an awesome midwife – and that is easier [to be] behind closed doors. (Midwife, experience  $\geq 3$  years)

Overall, the participants expressed willingness to face their own imperfect practices and allow it to become a topic for team discussions; for example, a suboptimal performance that might not be recognised during the chaos of an emergency event but could be revealed by

video. All participants underscored how VAD could generate feelings of anxiety and vulnerability. Thus, they considered it essential that debriefings only included the involved team members and debriefers, as equal vulnerability among participants was crucial in order to feel safe and in order to ensure the mutual respect and caution that these potentially vulnerable situations demand.

### Not being able to participate

Most participants expressed concern about being unable to attend a debriefing and having their performance revealed and discussed without their presence. They stressed the importance of having the opportunity to account for their actions and reasoning themselves, as they were afraid of being judged unreasonably.

It feels kind of intimidating to be evaluated [on your performance] with some of my colleagues present—while I am not there to explain or defend myself. (Midwife, experience  $< 3$  years)

For example, some participants stressed that one might not be fully aware of one's latest performance. Thus, the idea that colleagues would uncover and assess their mistakes without their presence was uncomfortable. However, all participants acknowledged that full participation from all involved team members would not always be feasible, and many stressed the importance of prioritising the presence of the team members that were most involved in the events. It was considered essential that team members unable to attend the debriefing should always consent for the debriefing to occur without them. In addition, it was suggested that a debriefing summary could alleviate some concern related to being unable to attend.

I think it's important to get some feedback, if things were said that I could benefit from or that concerns my performance. And it [a summary] would have me reassured that people weren't talking behind my back—or at least you would be informed, if some things are being said about you. (Attending physician)

Thus, clear guidelines on (non-)participation in debriefing were found to be essential for successful implementation of VAD.

### Interpersonal relations during debriefing

Participants perceived their everyday working environment at the wards as collaborative and respectful, and most participants were confident that debriefings would be conducted with mutual respect.

Working in these multidisciplinary teams has meant that we discuss our professional skills. We have learned to speak up in a constructive way. And we also share difficult experiences. I really believe that this shared vulnerability has turned into something positive, and it [vulnerability] is not something that I am afraid of. (Midwife, experience  $\geq 3$  years)

However, a few participants of different professions suggested that the debriefing dynamics would vary depending on the interprofessional and interpersonal relations between attending colleagues, for example, being more uncomfortable in an unfavourable work relationship.

Some residents mentioned that the presence of a senior mentor could enhance feelings of safety, for example, in case of the need for backup in discussions. However, the presence of a senior colleague could cause uncertainty, as a few participants wondered if being exposed as less competent could reduce chances of a permanent position

In relation to the more experienced physicians.....  
that's where the insecurity would matter the most.  
Because I really want to stay in this field [obstetrics].  
So who is going to view the video? Is it my boss? Is it  
just you [the interviewer]? Is it all of my supervisors?  
(Resident physician)

However, for none of the interviewed participants did the potential concerns about the use of video in debriefings outweigh the perceived educational benefits. Participants expressed a willingness to risk individual exposure in order to gain new insight into individual and collective clinical practice, which was considered important in order to be able to improve clinical performance and patient care.

### Theme 3: preconditions for video-assisted debriefing (VAD) Organisational support

Striving for excellence was indeed a personal motivation as well as a wish to succeed as an organisation, but participants were very aware that improvement comes with a cost, in this case; time, energy and risk of exposure. Thus, the motivation for attending VAD was not without limits and support from organisational structures was identified as an essential precondition. First, as most participants expected the workload and—organisation of the wards to challenge the organisation of VAD, the importance of managerial support was emphasised.

I would appreciate if the management showed flexibility. If, for instance, other work challenged me in terms of being able to participate [in a debriefing], then I would value knowing that it was of high priority for the management [that I attended]. (Midwife, experience  $\geq 3$  years)

Second, all participants preferred VAD to be conducted during working hours. Most participants stated that family was their priority, and especially physicians stated that 'work' outside official working hours was quite enough already.

I would really prefer if the debriefing was conducted within regular working hours, even if it means that we have to cancel a scheduled outpatient appointment. I feel like I do so many work-related tasks outside regular working hours already. (Attending physician)

Participants needed to feel that the organisation would support them in attending and rank VAD alongside other work-related tasks. In addition, when extending beyond regular working hours, overtime payment was expected and considered necessary for continuous motivation and thus successful implementation.

### A safe environment

Similarly, in order to invest time, energy and risk of exposure in the VAD, creating a safe debriefing environment was a precondition of importance to the participants. The analysis identified three aspects of a 'safe' environment. First, structural conditions such as sufficient allocation of time and no interruptions were repeatedly mentioned. Having enough time to allow a thorough debriefing without being disturbed by on-call telephones or other scheduled obligations were perceived as a prerequisite for establishing a safe environment for sensitive conversations. This finding also points to the hospital setting as a specific, organisational set-up where time and peace are in shortage and a potential threat to VAD. Second, the availability of trained, expert debriefers was emphasised as essential in establishing a safe environment, ensuring dialogue progress and preventing critical feedback, for example, by ensuring that all team members were heard and all perspectives addressed. Several participants expected the debriefers to 'set the scene', for example, by performing an initial clarification of expectations and the participants also emphasised how the debriefers should be experts in performing team-focused rather than individual-focused debriefing to prevent the risk of feeling criticised. Third, confidentiality was a natural demand to support a safe learning environment.

One thing [of importance] is that "what we discuss during a debriefing, we do not discuss elsewhere". I think that [knowing that] would make me feel safe.  
(Midwife, experience  $< 3$  years)

Overall, the analysis showed that if the right organisation in combination with a safe learning environment were fulfilled, then participants were prepared to prioritise participation.

## DISCUSSION

To the best of our knowledge, this study was the first to explore healthcare providers' perception and expectations of VAD of real-life obstetrical emergencies. We found that VAD did cause some concern of being exposed as less competent or insecure. This concern was found among all professions and at all levels of experience. Despite this, healthcare providers generally requested additional education and reflection on daily practice. Thus, they perceived the educational benefits of VAD to outweigh the risk of being exposed. In addition, participants from both departments highlighted the prevailing culture in their departments as a resource for successful implementation.

The strength of this qualitative study was that we were able to continue inclusion until sufficient information power had been obtained.<sup>20</sup> Furthermore, the purposeful sampling strategy included participants from two hospitals and three different professions to ensure maximum variation in perspectives. We also sought to strengthen the quality and credibility of the study through active use of researcher triangulation. The data material was based on participants who were willing to share their perspectives (a precondition in much research).<sup>3</sup> This may have induced selection bias, and one might speculate that only participants with a positive attitude towards VAD would volunteer. However, participants were found to be willing to share both positive and negative perceptions of VAD (box 1). When considering the transferability of the present results, it should be kept in mind that participants in our study were trained in simulation-based team training, and that they were familiar with the concept of debriefing cases of severe adverse maternal or neonatal outcomes. Furthermore, all participants had some experience with being filmed during obstetrical emergencies. Therefore, they may have been less apprehensive of both technology and debriefing. However, using these videos for debriefing and feedback was new to all participants. Future research should investigate how the actual experience of VAD in obstetrics matches the expectations and considerations presented in the current study.

In line with previous research, we found that VAD was perceived as an opportunity to review 'what was done' as well as an opportunity to reflect on team behaviour and the care provided.<sup>7 9 14 23</sup> The participants thus appreciated VAD as an opportunity for professional development despite the perceived barriers. These findings resonated with previous research on trauma teams.<sup>17</sup> In our study, professional development was described as a contributing factor for job satisfaction, which was also found in studies of other professions, where clinical supervision was associated with increased job satisfaction and prevention of burnout.<sup>24</sup> Participants in our study represented a regional hospital as well as a university hospital, and no discrepancy between educational motivations existed between the two departments. Instead, our results indicated a strong professional ambition at obstetrical departments in general and support previous research describing how learners can be motivated if they understand the potential value as well as how this motivation can result in high-quality learning.<sup>25</sup> In our study, striving for excellence outweighed the risk of being exposed; thus, participants expressed a willingness to risk exposure to enable learning. These findings could be linked to the healthcare providers' perception of the psychological safety in both departments, as the majority of participants expressed confidence in the set-up and their colleagues (including debriefers) to provide constructive feedback.

Our study provided insight into obstetrical team members' underlying concern of being exposed as less competent and criticised professionally during VAD, coherent with previous studies of obstetrical teams<sup>14</sup> and trauma teams.<sup>17</sup> We found that concern for exposure existed among all

professions and at all levels of experience. An underlying expectation of high clinical standards was echoed among all our participants, and results revealed how professional identity was at stake at all levels of professional expertise, coherent with previous research describing professional vulnerability during performance assessment.<sup>26</sup> The set-up of a VAD invites attending team members to comment on performance, and mistakes are more open to 'why didn't you just...' comments. A central issue in VAD is 'hindsight bias',<sup>27</sup> as assessment of the video may be biased by knowledge of the outcome. Hindsight bias may lead to an unfair assessment, as the healthcare providers may assess their behaviour on the video knowing that the patient needed further treatment; however, at the time they treated the patient, this was not obvious.<sup>27</sup> As the purpose of debriefing is to reflect on how to improve future performance, the uncertainty about what might come up during a debriefing provokes concern. Despite investigating the perspectives of participants in the context of a supportive work environment, these concerns still existed.

Our study did not demonstrate perceived concerns revolving around privacy issues and legal concerns as described in previous studies,<sup>14</sup> which is most likely due to the previous exposure to being video recorded in the departments. However, such issues may be of central concern in other settings. In the USA, some emergency departments had to stop VAD of trauma care due to healthcare providers' fear of disciplinary actions and legal concerns.<sup>28</sup> This was done despite the healthcare provider's conviction that video reviews were of high educational value and associated with improved patient care.<sup>28 29</sup>

Our results complement studies on the importance of creating a psychologically safe learning environment during debriefing,<sup>30 31</sup> as participants need to view the set-up as being conducive to interpersonal risk taking<sup>30</sup> and that the debriefing will be conducted with mutual respect among participants.<sup>31</sup> To accommodate for barriers towards VAD, our participants provided several recommendations for the set-up of VAD, such as no interruptions, trained debriefers and confidentiality. Our results thus complement previous research on how to support psychological safety during debriefings.<sup>30 31</sup> In addition, previous research described the importance of establishing psychological safety at the beginning of each debriefing by clarifying expectations, inviting participants to actively participate and acknowledging it when they do.<sup>31</sup>

## CONCLUSION

VAD provides an opportunity to learn from real-life events, but special attention needs to be directed towards potential barriers during implementation. This qualitative study identified healthcare providers' perceptions and expectations of VAD of real-life obstetrical emergencies. We found that healthcare providers supported VAD and were willing to risk exposure and professional critique, if the right preconditions for a safe learning environment were fulfilled. Results from the present study will guide

the implementation of VAD of real-life obstetrical emergencies at the departments.

#### Author affiliations

<sup>1</sup>Department of Obstetrics and Gynecology, Horsens Regional Hospital, Horsens, Denmark

<sup>2</sup>Department of Clinical Medicine, Aarhus University, Aarhus, Denmark

<sup>3</sup>DEFACTUM - Public Health and Health Services Research, Aarhus, Denmark

<sup>4</sup>Center for Fetal Diagnostics, Aarhus University Hospital, Aarhus, Denmark

<sup>5</sup>Department of Obstetrics and Gynecology, Aarhus University Hospital, Aarhus, Denmark

<sup>6</sup>School of Applied Psychology, University of Applied Sciences and Arts Northwestern Switzerland, Olten, Switzerland

**Acknowledgements** We are grateful to the midwives, nursing assistants and physicians at Horsens Regional Hospitals and Aarhus University Hospital, who participated in this study.

**Contributors** LHR, LB, LH, TM, NU and OK formulated the research question. LHR and SL developed the first draft of the interview guide, and LB, OK and LH reviewed it. LHR conducted the interviews with guidance from SL. LHR performed coding of interview material with input from all authors. Themes were established by LHR, SL, LB and NU. The manuscript has been written with contributions from all authors. All authors gave final approval of this version to be published. LHR is responsible for the overall content as guarantor.

**Funding** We thank the following departments and organisations for financial support: Department of Obstetrics and Gynecology, Horsens Regional Hospital, Denmark (grant ID N/A); Health Research Foundation of Central Denmark Region (Region Midtjyllands Sundhedsvidenskabelige Forskningsfond) (grant ID no. A3613); Tryg Foundation (Trygfonden) (grant ID no. 109507); Hartmann Foundation (Brødrene Hartmanns Fond) (grant ID no. A36907); Family Hede Nielsen Foundation (Familien Hede Niensens Fond) (grant ID N/A).

**Competing interests** None declared.

**Patient and public involvement** Patients and/or the public were involved in the design, or conduct, or reporting, or dissemination plans of this research. Refer to the Methods section for further details.

**Patient consent for publication** Not applicable.

**Ethics approval** This study involves human participants and was approved by Central Denmark Region Ethics Committee ID No. 1-16-02-386-21. Participants gave informed consent to participate in the study before taking part.

**Provenance and peer review** Not commissioned; externally peer reviewed.

**Data availability statement** Data are available upon reasonable request.

**Supplemental material** This content has been supplied by the author(s). It has not been vetted by BMJ Publishing Group Limited (BMJ) and may not have been peer-reviewed. Any opinions or recommendations discussed are solely those of the author(s) and are not endorsed by BMJ. BMJ disclaims all liability and responsibility arising from any reliance placed on the content. Where the content includes any translated material, BMJ does not warrant the accuracy and reliability of the translations (including but not limited to local regulations, clinical guidelines, terminology, drug names and drug dosages), and is not responsible for any error and/or omissions arising from translation and adaptation or otherwise.

**Open access** This is an open access article distributed in accordance with the Creative Commons Attribution Non Commercial (CC BY-NC 4.0) license, which permits others to distribute, remix, adapt, build upon this work non-commercially, and license their derivative works on different terms, provided the original work is properly cited, appropriate credit is given, any changes made indicated, and the use is non-commercial. See: <http://creativecommons.org/licenses/by-nc/4.0/>.

#### ORCID iDs

Lena Have Rosvig <http://orcid.org/0000-0003-3893-0804>

Stina Lou <http://orcid.org/0000-0001-6177-5780>

Lone Hvidman <http://orcid.org/0000-0002-8006-6194>

Tanja Manser <http://orcid.org/0000-0002-5852-8735>

Niels Ulbjerg <http://orcid.org/0000-0002-6449-6426>

Lise Brogaard <http://orcid.org/0000-0001-5136-9682>

#### REFERENCES

- 1 Wilkinson H, Trustees and Medical Advisers. Saving mothers' lives. reviewing maternal deaths to make motherhood safer: 2006-2008. *BJOG* 2011;118:1402-3;
- 2 Johansen LT, Braut GS, Acharya G, *et al*. How common is substandard obstetric care in adverse events of birth asphyxia, shoulder dystocia and postpartum hemorrhage? findings from an external inspection of Norwegian maternity units. *Acta Obstet Gynecol Scand* 2021;100:139-46.
- 3 Kvale S, Brinkmann S. *Interviews: learning the craft of qualitative research interviewing*. 2 ed ed. Los Angeles: Sage Publications, 2009.
- 4 Draycott TJ, Collins KJ, Crofts JF, *et al*. Myths and realities of training in obstetric emergencies. *Best Pract Res Clin Obstet Gynaecol* 2015;29:S1521-6934(15)00127-3:1067-76..
- 5 Merriel A, Ficquet J, Barnard K, *et al*. The effects of interactive training of healthcare providers on the management of life-threatening emergencies in hospital. *Cochrane Database Syst Rev* 2019;9:CD012177.
- 6 Brogaard L, Ulbjerg N. Filming for auditing of real-life emergency teams: a systematic review. *BMJ Open Qual* 2019;8:e000588.
- 7 Hoyt DB, Shackford SR, Fridland PH, *et al*. Video recording trauma resuscitations: an effective teaching technique. *The Journal of Trauma: Injury, Infection, and Critical Care* 1988;28:435-40.
- 8 Townsend RN, Clark R, Ramenofsky ML, *et al*. ATLS-based videotape trauma resuscitation review: education and outcome. *J Trauma* 1993;34:133-8.
- 9 Scherer LA, Chang MC, Meredith JW, *et al*. Videotape review leads to rapid and sustained learning. *Am J Surg* 2003;185:516-20.
- 10 Carbine DN, Finer NN, Knodel E, *et al*. Video recording as a means of evaluating neonatal resuscitation performance. *Pediatrics* 2000;106:654-8.
- 11 Skåre C, Calisch TE, Saeter E, *et al*. Implementation and effectiveness of a video-based Debriefing programme for neonatal resuscitation. *Acta Anaesthesiol Scand* 2018;62:394-403.
- 12 Gelbart B, Barfield C, Watkins A. Ethical and legal considerations in video recording neonatal resuscitations. *J Med Ethics* 2009;35:120-4.
- 13 Campbell S, Sosa JA, Rabinovici R, *et al*. Do not roll the videotape: effects of the health insurance portability and accountability act and the law on trauma videotaping practices. *Am J Surg* 2006;191:183-90.
- 14 van Lonkhuijzen L, Groenewout M, Schreuder A, *et al*. Perceptions of women, nurses, midwives and doctors about the use of video during birth to improve quality of care: focus group discussions. *BJOG* 2011;118:1262-7.
- 15 Brogaard L, Hvidman L, Hinshaw K, *et al*. Development of the teamobs-pph-targeting clinical performance in postpartum hemorrhage. *Acta Obstet Gynecol Scand* 2018;97:677-87.
- 16 Brogaard L, Kierkegaard O, Hvidman L, *et al*. The importance of non-technical performance for teams managing postpartum haemorrhage: video review of 99 obstetric teams. *BJOG* 2019;126:1015-23.
- 17 Davis L, Johnson L, Allen SR, *et al*. Practitioner perceptions of trauma video review. *J Trauma Nurs* 2013;20:150-4.
- 18 O'Brien BC, Harris IB, Beckman TJ, *et al*. Standards for reporting qualitative research: a synthesis of recommendations. *Acad Med* 2014;89:1245-51.
- 19 American College of Obstetricians and Gynecologists and Society for Maternal-Fetal Medicine, Menard MK, Kilpatrick S, *et al*. Levels of maternal care. *Am J Obstet Gynecol* 2015;212:S0002-9378(14)02489-2:259-71..
- 20 Malterud K, Siersma VD, Guassora AD. Sample size in qualitative interview studies: guided by information power. *Qual Health Res* 2016;26:1753-60.
- 21 Mousa HA, Blum J, Abou El Senoun G, *et al*. Treatment for primary postpartum haemorrhage. *Cochrane Database Syst Rev* 2014;2014:CD003249.
- 22 Braun V, Clarke V. Using thematic analysis in psychology. *Qualitative Research in Psychology* 2006;3:77-101.
- 23 Jiang C, Zhao Y, Chen Z, *et al*. Improving cardiopulmonary resuscitation in the emergency department by real-time video recording and regular feedback learning. *Resuscitation* 2010;81:1664-9.
- 24 Snowdon DA, Leggat SG, Taylor NF. Does clinical supervision of healthcare professionals improve effectiveness of care and patient experience? A systematic review. *BMC Health Serv Res* 2017;17:786.
- 25 Ryan RM, Deci EL. Intrinsic and extrinsic motivations: classic definitions and new directions. *Contemp Educ Psychol* 2000;25:54-67.

- 26 Edmondson A. Psychological safety and learning behavior in work teams. *Administrative Science Quarterly* 1999;44:350–83.
- 27 Henriksen K, Kaplan H. Hindsight bias, outcome knowledge and adaptive learning. *Qual Saf Health Care* 2003;12 Suppl 2(Suppl 2):ii46–50.
- 28 Ellis DG, Lerner EB, Jehle DV, *et al.* A multi-state survey of videotaping practices for major trauma resuscitations. *J Emerg Med* 1999;17:597–604.
- 29 Rogers SC, Dudley NC, McDonnell W, *et al.* Lights, camera, action... spotlight on trauma video review: an underutilized means of quality improvement and education. *Pediatr Emerg Care* 2010;26:803–7.
- 30 Rudolph JW, Raemer DB, Simon R. Establishing a safe container for learning in simulation: the role of the presimulation briefing. *Simul Healthc* 2014;9:339–49.
- 31 Kolbe M, Eppich W, Rudolph J, *et al.* Managing psychological safety in debriefings: A dynamic balancing act. *BMJ Simul Technol Learn* 2020;6:164–71.