Prelicensure nursing students' perspectives on video-assisted debriefing following high fidelity simulation: A qualitative study

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A B S T R A C T

Background: Video-assisted debriefing has not attracted sufficient attention on exploring learners' perceptions. A full understanding of learners' attitudes and perceptions towards video-assisted debriefing sets the foundation for effective learning, which should be considered when integrating video-assisted debriefing to the nursing curricula. However, limited evidence on learners' perspectives makes it difficult to fully understand this phenomenon.
Objectives: To explore prelicensure nursing students' experiences and perspectives on video-assisted debriefing following a high-fidelity simulation.
Design: An exploratory qualitative approach using focus groups.
Setting: This study was conducted at a local university in Singapore.
Participants: A purposive sample of 27 prelicensure nursing students in Singapore were recruited.
Methods: Six focus group interviews were conducted. Thematic analysis was used to analyze the transcribed data.
Results: Three themes and eight subthemes were derived from the data analysis. The themes included journey from traditional verbal debriefing to video-assisted debriefing, praise and criticism of video-assisted debriefing, and the road to successful video-assisted debriefing.
Conclusions: Nursing students revealed that video-assisted debriefing not only complemented the drawback of verbal debriefing by offering objective evidence but also improved their attitudes and behaviors through the unique experience of an emotional roller coaster. Learners should be desensitized to the fear of video and their discriminating capabilities should be developed prior to video-assisted debriefing. The findings can serve as a reference when designing and integrating video-assisted debriefing interventions into simulation-based education.

1. Introduction

Simulation is often viewed as an evolving pedagogy as it offers a unique student-centered educational experience of rehearsing core skills in a mimic clinical scenario without harming a real patient (Bland and Tobbell, 2016). Simulation helps to reduce the tension between theory and practice, while debriefing aims to generate new knowledge to integrate into learners' metacognition through spurring learners to discover and reflect on personal cognitive, affective, and psychomotor abilities (Lestander et al., 2016).

Debriefing can be accomplished by various approaches, and the two main types used in health profession education are verbal debriefing (VD) and video-assisted debriefing (VAD). VD is a traditional modality involving group discussions, whereas VAD adds video reviews to verbal discussions (Ha, 2014). The advocacy-inquiry technique is commonly used by facilitators to uncover learners' mental frames behind their actions in a simulation before good judgement is made (Rudolph et al., 2006). Although recent nursing reviews on debriefing practices were unable to establish the best debriefing methods due to a lack of studies (Hall and Tori, 2017; Levett-Jones and Lapkin, 2014), Cheng et al. (2014) suggested that participants favored methods that emphasized reflection rather than criticism. Sawyer et al. (2016) added that most

Phases	Key Steps	Details
Phase 1 (20-min)	**Reiterate** **React**	• Introduce simulation setting • Emphasize mutual respectful learning environment • Clarify learning objectives • Engage in 15-min simulation with video recording
Phase 2 (35-min)	**Rest** **Recall** **Review** **Reflect**	• 5-min interlude for peer learning using Plus-delta • Recall simulated experience • Watch video clips with concerns • Give critical comments using advocacy-inquiry • Provide cognitive aid materials
Phase 3 (5-min)	**Recap** **Relate**	• Share 2-3 learning points. • Transfer learning to clinical practice.

Fig. 1. The structure of the 3-phase video-assisted debriefing discussed in this study.

facilitator-guided debriefing methods were structured into phases to allow both facilitators and participants to engage in open and interactive discussions to reach a shared mental model and allow objectively compare current performance against a standard or benchmark. The plus-delta method requires facilitators to explore good and improvement points and represents an effective and time-efficient tool for learner-centered debriefing as it rouses learners to think and reflect actively in the debriefing process and take personal responsibility for learning (Dusaj, 2014; Cheng et al., 2016). On the other hand, the advocacy-inquiry technique promotes productive and non-judgmental two-way communication as well as self-reflection through expressing one's views (advocacy) and uncovering learners' mental frames behind their actions during a simulation (inquiry) (Gardner, 2013; Rudolph et al., 2006).

Despite the abundant evidence supporting the benefits of VAD, VAD has not attracted sufficient attention on exploring learners' full experiences and their perspectives in the debriefing process, making the body of knowledge about VAD incomplete. Current evidence regarding learners' experiences, perceptions, and attitudes towards VAD remains inconclusive. Most studies employed quantitative designs to explore learners' experiences and perspectives related to VAD (Gordon and Buckley, 2009; Fanning and Gaba, 2007; Forbes et al., 2016; Grant et al., 2010; Jacobs, 2017; O'Meara et al., 2015; Patterson et al., 2013; Reed et al., 2013; Soucisse et al., 2017), which limited participants' response inputs in structured questionnaires with close-ended questions, resulting in numeric descriptions of learners' experiences and the subjectivity of VAD. Relevant evidence from qualitative studies is lacking. A study conducted by Cantrell (2008) mainly focused on nursing students' viewpoints of VAD related to simulation experience rather than overall perspectives. Krogh et al. (2015) studied facilitators' perspectives on VAD instead of learners' perspectives. Ha (2014) explored nursing students' attitudes towards VAD using Q Methodology. However, the finding was based on students' sorting of 39 Q statements and several written comments instead of rich narratives from interviews or focus groups, leading to missing important non-verbal information such as facial expressions and body gestures. Moreover, evidence regarding learners' experiences and perspectives of VAD is considerably superficial and incomprehensive. For instance, studies with positive views briefly concluded that participants viewed VAD as an effective teaching-learning strategy attributed to video objectivity for direct observation and reflection (Chronister and Brown, 2012; Fanning and Gaba, 2007; Gordon and Buckley, 2009; Grant et al., 2010; Ha, 2014; Jacobs, 2017; Krogh et al., 2015; O'Meara et al., 2015; Patterson et al., 2013; Scherer et al., 2003; Soucisse et al., 2017) without delving into how the video helps learners to reflect their actions and construct new knowledge. Similarly, studies with negative views indiscriminately

assumed that video reviews provoked unpleasant emotions and made participants feel anxious, distracted, embarrassed, and exhausted (Cantrell, 2008; Chronister and Brown, 2012; Ha, 2014; Reed et al., 2013; Rudolph et al., 2006; Savoldelli et al., 2006) without looking at learners' flow of emotions during the VAD process or dissecting the hidden factors behind the single emotion in a different phase of VAD.

Apparently, evidence from quantitative studies neither represents the actual occurring nor is robust enough to describe learners' experiences of VAD. Evidence from qualitative studies is sparse and limits the support for providing a detailed, holistic description of learners' subjectivity of VAD. Furthermore, the conclusion drawn from the current evidence is incomprehensive, such as information about learners' flow of emotions experienced in the VAD was wanting, the hidden factors behind different attitudes and their expectations of a sophisticated VAD still remain unclear, which makes it difficult for audiences to fully understand this phenomenon, substantiating the need for further research.

2. Aim

The aim of this study was to explore prelicensure nursing students' experiences and perspectives on VAD following a high-fidelity simulation.

3. Methods

3.1. Study Design and Setting

An exploratory qualitative approach using focus groups was used to elicit participants' perspectives. This study was conducted at a local university in Singapore from August 2017 to September 2018. A purposive sample of 27 prelicensure undergraduate nursing students with experiences of VD and VAD were recruited. They participated in one VAD session following a code blue simulation in a simulation room equipped with high-fidelity simulators and cameras. Students were assigned either to the role of "performers" to attend the simulated scenario or "observers" to give feedback.

A three-phase VAD model (Fig. 1) was used by the facilitator to guide the debriefing process, focusing on the predefined learning objectives (e.g. detection of unresponsiveness, cardiopulmonary resuscitation, use of manual resuscitator and automated external defibrillation, and drugs administration). The advocacy-inquiry technique and the plus-delta approach were embedded in the second phase of the VAD model. Examples of simulated scenarios included septic shock, hypovolemic shock, and cardiogenic shock. VAD was conducted according to the INACSL Standards of Best Practice for Simulation[SM]

Debriefing (2016). The facilitator was an experienced simulation instructor who received debriefing training from the Centre of Medical Simulation. The debriefing was based on Kolb's (2015, pp. 65–68) Experiential Learning Theory and was conducted in a supportive environment that encouraged confidentiality, open communication, and respectfulness. Recorded videos were used to effectively debrief students' simulation-based experiences.

3.2. Data Collection

A semi-structured interview guide was developed based on the literature and experts' opinions, which covered five dimensions related to VAD including awareness, personal experience, possible impetus and barriers, suggestions for improvement, and use beyond education.

Six focus group interviews were conducted by two researchers (HZ and SG). Each focus group comprising three to six participants was conducted in a quite tutorial room at the university with video and audio recordings. The average duration of the interviews was 55 min (ranging from 45 to 65 min). Interaction among the participants was central to the focus group interview as data were collected through the participants' responses to each other's agreeing, disputing, or negotiating (Braun and Clarke, 2013). In this study, nursing students knew their group members well and were comfortable with the environment. In an effort to hold a rich and in-depth discussion, the two researchers tried their best to keep the interview in an open and supportive manner. The recorded videotapes that served as field notes were used to facilitate data transcription and analysis.

3.3. Data Analysis

Recorded audiotapes were transcribed verbatim, and the transcripts were analyzed using the six-phase thematic analysis framework developed by Braun and Clarke (2006). The researchers repeatedly read the transcripts and watched the recorded videos to familiarize themselves with the entire body of data and to gain a sense of wholeness. Rough notes were jotted down for initial ideas and early impressions. Initial coding was conducted by two researchers independently (HZ and SG) to identify the concepts of interest through highlighting texts with the same meaning. The codes were then extracted and grouped according to similarities and overlapping of concepts of interest and afterwards sorted into potential themes. The potential themes were then reviewed by three researchers (HZ, SG, and VW) in relation to the codes extracted and the entire data set to identify the essence of each theme using a thematic map of the analysis. Subsequently, the proposed themes were validated and refined to ensure the data within the defined themes formed a logical and meaningful connection. Ultimately, the findings were related back to the research aim and the report was generated to reflect the three emerging themes in a coherent manner.

In this study, data reached saturation after the fourth focus group interview as no substantial new knowledge was generated from the subsequent two group interviews and a wide array of perspectives seemed to be entirely covered.

3.4. Ethical Consideration

Ethical approval was sought from the institutional review board (S-17-217) of the study university. Participant information sheets were provided to the nursing students with detailed explanations of the study process. All students were assured of voluntary participation and refusal to participation or withdrawal would not cause any punitive actions. Written consents for study participation and video and audio recordings were obtained. Students' identities were not required in the data collection, and pseudo names were assigned to all students during data transcription to protect their confidentiality.

3.5. Rigor

To support the rigor of this study, credibility, dependability, confirmability and transferability were carefully considered (Lincoln and Guba, 1985). Credibility of the findings was confirmed via member checking. Emerging themes with subthemes that were sent back to students through emails to validate the findings of the study were true to their experiences and narratives. To achieve dependability, the research team invited an external researcher to examine the analysis process and evaluate whether the findings of the study were supported by the data. Analyst triangulation was applied to establish confirmability. Codes, subthemes, and themes were reviewed and discussed continuously among three of the researchers (HZ, SG, and VW) to confirm its validity and constancy. Any doubts that arose were resolved through discussions until a final consensus was reached on the thematic patterns. To facilitate transferability, the researchers provided an in-depth description of the phenomenon and the research context to allow readers to compare and relate the conclusion drawn from the current study to personal experiences to decide its fittingness in other settings.

4. Results

Twenty-four female and three male nursing students participated in these six focus group interviews, with a mean age of 22.6 years (ranging from 21 to 41 years). Three themes emerged from the data analysis, including journey from VD to VAD, praise and criticism of VAD, and the road to successful VAD. The eight subthemes are shown in Table 1.

4.1. Journey From VD to VAD

4.1.1. Unfulfilled Learning Needs From VD

Nursing students revealed unfulfilled learning needs from traditional VD. They complained that the feedback given during VD were often general and unconstructive as many could not recall or pinpoint certain events. Some of them also pointed out that the group discussion was subjected to bias or error as different observers might perceive the same performance differently from others while some might have omitted certain observations. Without visualization, feedback given led to confusion and frustration, rather than clarity.

> "*When the tutor goes through the parts, we need to recall what she says. We may recall different things… Our memory may be a bit different.*"
> (S3G3P4L14-16)

> "*We are just going around in circles and circles because we don't know what has been gone through and what has not been gone through.*"
> (S4G2P5L12)

4.1.2. Emotional Roller Coaster With VAD

Nursing students reported a myriad of emotions when they underwent the VAD session. Most of them expressed reluctance to VAD initially when they first knew that their performances would be recorded due to the lack of familiarity with the process and the fear of the idea of

Table 1
An overview of three themes and eight subthemes emerged during data analysis.

Themes	Subthemes
Journey from VD to VAD	• Unfulfilled learning needs from VD • Emotional roller coaster with VAD
Praise and criticism of VAD	• Exclusive benefits of VAD • Challenges of VAD
The road to successful VAD	• Laying the groundwork for VAD • Role as a motivated learner • Role as an effective facilitator • Influence of educational context

being filmed. Some felt that it was awkward to be watched by others.

As the "performer" students continued with the simulated scenarios, most of them began to assimilate into their roles, go with the flow of the events, and disregard the feelings of being filmed. Some of them felt more comfortable with VAD after experiencing it once. However, the acclimatization to video recording did not occur for all students as a few complained that they were so conscious of the filming that they could not perform naturally.

The "performer" students also disclosed that they had ambivalent feelings towards the video-assisted feedback session, intertwining with the desire for constructive feedback and the fear of being judged. The feelings came with unwillingness to share their own videos, the fear of being judged, defensiveness, appreciation, feeling relieved, and satisfaction. Nevertheless, almost all students expressed their willingness to receive feedback with video reviews and recognized its importance in their learning. Only a few students argued that they preferred not to receive peer feedback after video reviews so that they would not feel any personal attacks. Despite these complicated feelings, students generally agreed that VAD provided a good learning experience, far outweighing the negative comments.

"It was quite intense and quite stressful [when] knowing that it's videoed. You were very conscious, and everybody was so task-orientated."

(S3G6P2L20-21)

"If the video doesn't come with the feedback, it's quite useless and not as beneficial."

(S4G1P6L5-6)

4.2. Praise and Criticism of VAD

4.2.1. Exclusive Benefits of VAD

Nursing students valued the learning benefits brought by VAD, such as using the videos to verify comments, cancelling out potential biases and errors, and keeping everyone on the same page. Through video playbacks, students were also able to revisit and review the entire simulation performance objectively from a third person's perspective, thus making them more receptive to criticism and reducing feelings of defensiveness. Students also believed that VAD not only helped them improve their self-reflection, learning attitudes, and behaviors in the classroom but also enabled them to relate the current encounters to future practice through mental assimilation. These exclusive benefits led to several students proposing the use of video for honing soft skills beyond education.

"I will use it (video) if I want people to build up their confidence to be natural in front of the camera… I will post it (video) up on a more public platform so that I can hopefully get more constructive feedback from professionals."

(S2G2P6L1-6)

4.2.2. Challenges of VAD

Nursing students also faced several challenges associated with VAD. They raised concerns about learners' over-reliance on videos as some of them would rather wait for the facilitator to give the feedback during video reviews than observe the actual simulations. The quality of the recorded videos was also highlighted by students as some of them commented that several important procedural steps were not captured by the camera and certain parts of the video were not clear. Due to time and manpower constrains, many students regretted the lack of opportunity to attend the simulated scenarios and evaluate their own performances, leading to unequal learning opportunities between the "performer" and "observer" students.

Several students commented that increasing the time for video reviews would result in shorter time for skill practice. When probed on the appropriate length of time for video reviews, students held different

opinions. Some students found it was time-consuming to watch the entire video and believed that watching snapshots would be sufficient and time-efficient for their learning, whereas some felt that they might not have been debriefed enough if they only watched selected video clips. The majority agreed that the appropriate length of time for video review should depend on the context and the learning needs. In addition, several students were afraid that their recorded videos with subpar performances might be used for teaching and shown to students outside the class, causing a threat to their social self-esteem.

"Video didn't really capture her side of things, so the skills that she was doing wasn't captured in the video."

(S4G3P10L19-21)

"It may not be as effective for someone who is just observing as they are not the ones who did the simulation. Not all constructive criticism is relevant to observers."

(S2G3P5P2L27)

4.3. The Road to Successful VAD

4.3.1. Laying the Groundwork for VAD

Besides setting adequate time, most nursing students recommended conducting VAD following simulation with a small class size or in a rotation manner with a large class size for practicality and to ensure that every student has an equal opportunity for simulation and video access. They believed that it was important to desensitize learners early to the fear of cameras prior to VAD to reduce possible psychological burdens and to get support from the information technology (IT) department to produce high-quality videos and rectify unforeseen technology failures, such as the malfunctioning of camera or audio recording.

"Make the video recording compulsory since the first year… It will desensitize the students to the fear of being recorded… Their actions will be more natural."

(S5G4P12L19-21)

4.3.2. Role as a Motivated Learner

Nursing students agreed that the characteristics of learners also played an important part in a successful VAD as most of them reflected that they should step out of their comfort zones and actively participate in the learning activities of VAD. They also verbalized that a motivated learner should be confident enough to face challenges and be resilient to stress and criticism. In addition to the aforementioned, a motivated learner should also have open and appreciative mind set, positive learning attitude, and strong sense of self-esteem. Most importantly, as emphasized by the students, motivated learners should take responsibility for their own learning.

"I am really thankful for all the comments… Then, you just think… I need to change."

(S4G2P3L12-14)

4.3.3. Role as an Effective Facilitator

Most of the nursing students recognized the pivotal role of a facilitator in determining the success of debriefing. They highlighted that an effective facilitator should be competent in conducting engaging debriefings, selecting video clips with the most learning benefits, and being sensitive to students' emotional changes during feedback sessions. There were conflicting views that arose among students regarding who should take the role of facilitator in VAD. The majority of the students preferred faculty members to conduct VAD (tutor-led) instead of peers (peer-led) as they trusted their tutors' professional knowledge and experiences of giving feedback. Several students who viewed peer-led VAD and tutor-led VAD as equally important suggested combining both

approaches to improve productivity and maximize learning benefits. They explained that they needed a tutor-led VAD for learning new lessons. When they achieved certain proficiency levels, they might prefer a peer-led VAD in order to perform naturally in the simulations without the stress caused by the presence of a tutor. Subsequently, they would use the recorded videos to get constructive comments from their tutor. By doing so, they believed that they could receive double benefits as tutor-led VAD helped to complement the shortcomings of peer-led VAD and vice versa.

4.3.4. Influence of Educational Context

Nursing students narrated that their acceptance to VAD were greatly influenced by the education initiatives of the university promoting technology-enhanced pedagogy and the local culture of doing well and being competitive. As most of students viewed themselves as digital natives, they believed that it would be easy for them to accept and adapt to VAD interventions as they were willing to try any new learning strategies for the sake of academic merits. Additionally, students also shared that they emulated peers with great performances and were inspired to change.

"It's the culture of the school to do well… We are not expected to fail… When we see that other people are performing well, and we feel, like, we have to be like that."

(S3G5P8L13-18)

5. Discussion

Our study observed a notable learners' satisfaction after VAD, suggesting that the videos benefited learners through standardizing the debriefing content to resolve dispute. This finding corroborated the proposition by Grant et al. (2010) that feedback with video playback enhanced learning by eliminating bias and errors and allowed discussions occur based on the precise recordings of events. In addition, our study found that learners recognized the value of VAD in providing them with a third person's perspective on personal behaviors and subconscious mannerisms, allowing learning to occur seamlessly. This finding added to the statement by Fanning and Gaba (2007) that video playback added perspectives to the simulated encounters through allowing learners to see how they performed rather than how they thought they performed, reducing hindsight bias in evaluating the scenarios. Moreover, our study affirmed the educational effect of VAD in improving learners' awareness, reflection, and learning attitudes, which was consistent with empirical evidence (Harder et al., 2013; Zhang et al., 2018).

Our study observed an emotional roller coaster experienced by the students when they engaged in VAD, which helped to fill the gap. Generally, only a single segment of emotions such as anxiety or stress was reported in the literature that explored learners' experiences related to VAD, implying that it was common for learners to feel discomfort in their first encounter with new technology or new teaching strategy in simulation-based learning (Cantrell, 2008). Once they became comfortable with the new change, they were more likely to embrace the experience (Royle and Hargiss, 2015). Our study found that students exhibited two different responses to video recording when engaging in simulation. The possible reasons could be due to the lack of medical knowledge and experience or the stress or intimidation caused by performing in front of audiences regardless whether a grade would be given (Foronda et al., 2013; Shearer, 2016). Apparently, the reasons for learners feeling anxious or stress in simulations were multifactorial, irrespective of whether they were filmed. In fact, self-reported high anxiety did not always result in a negative impact on cognitive growth as optimal stress helped to promote learning and only excessive stress produced an adverse effect (Beischel, 2013; Palethorpe and Wilson, 2011). The main aim for debriefing was to provide an opportunity for learners to objectively evaluate their own performances outside of the

intensive simulation regardless of which type of debriefing used (Chronister and Brown, 2012). VAD fortified the aim by adding a proper distance for self-observation with a space for self-reflection, together with peers' feedback, providing learners with a realistic picture of their own proficiencies (Fukkink et al., 2011). Hence, we reiterated the importance of creating a supportive and respectful environment for VAD so that learners can feel safe and less threatened when receiving critique, leading to more efficient cognitive learning.

Furthermore, our study dissected students' ambivalent feelings towards VAD and revealed that learners' desires for improvement were intertwined with the fear of being judged. This finding inferred that constructive feedback helped learners to reframe their thinking and construct new knowledge when the negative feedback did not erode one's sense of self-worth or motivation (Fukkink et al., 2011; Mariani et al., 2013). The fear of being judged or criticized was often documented in simulation papers that were not limited to VAD (Cantrell, 2008; Chronister and Brown, 2012; Foronda et al., 2013) as learners did not want to be perceived as incompetent in their trainings, which might pose a threat to their social self-esteem (Nilsen and Baerheim, 2005). Hence, it is important for educators to explore ways to build learners' resilience to criticism. Surprisingly, we also noticed that one of the underlying factors contributing to learners' attitudinal changes was the fear of being criticized. Viewed in this light, it would be interesting for future studies to explore the underlying association between such a phenomenon and learners' feelings of pride and shame.

Challenges associated with VAD are worth addressing here. Video use might have increased learners' reliance on it and distracted them from watching the actual simulations as they felt it was time-wasting to watch the same performance twice. This finding was coherent with the report by Harder et al. (2013): although "observer" students were encouraged to provide feedback, they often felt bored and perceived their roles as passive and less important in the simulation. Due to time constraint and an expanded student cohort, it was difficult for the facilitator to assign the entire group of students as "performers" for the simulation. However, the facilitator could enhance the role of an "observer" in vicarious learning through providing observational guides and feedback training to practice critical thinking and feedback skills (Bates et al., 2018; O'Regan et al., 2016). There was no consensus made about the optimal length of video-watching during debriefing. Based on our findings, we supported the conclusion made by Chronister and Brown (2012) that video clips should be watched during class to save time and avoid mental fatigue, and full-length videos can be used as an option for students who want to gain a full perspective of the simulation after class.

Our study recognized the importance of having a sufficient time set for video reviews, experiential reflection, and knowledge assimilation. This finding corroborated the findings of other studies (Chronister and Brown, 2012; Dreifuerst, 2012). As stated by Nilsen and Baerheim (2005), a new simulation-based teaching strategy should be introduced to learners from the early stage of their training rather than waiting until a later stage to lessen the psychological burden. Given adequate time and a supportive environment, we consent to desensitizing learners to the fear of cameras prior to VAD and rotating learners for the role of a "performer" to ensure equal learning opportunity. Furthermore, high-quality videos are more beneficial for debriefing. Hence, a proper investment on high-quality cameras and continuous support from the IT department also paves the way for successful VAD.

Our study described learners' expectations of an effective facilitator, including being able to identify learners' learning needs, adjusting the levels of facilitation appropriately, and paying attention to learners' emotional changes, which were consistent with the findings from prior educational research (Decker et al., 2013; Komarraju et al., 2011). Subpar debriefing could lead to incorrect lesson learnt and demoralization, and the benefit of VAD was highly reliant on the skills and dexterity of the facilitator not the video (Mariani et al., 2013; Zhang et al., 2018). Moreover, learners' anxiety and stress related to

simulation and debriefing can be reduced if the tutor used humor and a supportive manner to engage learners (Cantrell, 2008). Hence, it is noteworthy to explore and evaluate the facilitators' debriefing practice when newly implementing a VAD intervention following simulation.

5.1. Strengths and Limitations

To the authors' best knowledge, this study was the first qualitative study using focus groups to explore the perspectives of learners reflecting on VAD. Our study disclosed an emotional roller coaster experienced by prelicensure nursing students during VAD following a high-fidelity simulation, which was not reported by other studies, contributing to the gap in the literature. Moreover, our study dissected the hidden reasons behind the fluctuating emotions in a different phase of structured VAD and found that the fear of being criticized during VAD might have a positive impact on nursing students' learning attitudes. This finding adds a new concept to the growing body of evidence on simulation-based learning in term of learners' shame and pride associated with VAD. In addition, our study summarized nursing students' expectations of a successful VAD, including the importance of the dexterity and supportive demeanor of an effective facilitator, traits of motivated learners, the installation of a sophisticated audiovisual system, and direct access to technical support. Overall, our study provided a better understanding of learners' experiences and perspectives on VAD in the nursing context and offered precious insights into what was beneficial or troubling for learners, thus allowing educators to modify the design of a VAD intervention to increase the efficacy of such teaching-learning strategy and offer maximal benefits to learning through a meaning, learner-centered experience.

The purposive sampling used in this study was viewed as the key limitation as the recruited participants had been greatly influenced by the national notion of meritocracy and the unique local culture of being competitive. In view of the differences in socioeconomic environments and IT infrastructures, the findings of this study might not represent the learning experiences of nursing students from other settings. Hence, the transferability of the study is limited. Future studies are recommended to explore diverse contexts to provide a full picture of learners' perspectives on VAD following a high-fidelity simulation.

6. Conclusions

Nursing students believed that VAD not only complemented the drawback of VD by offering objective evidence but also enhanced their awareness, attitudes, and behaviors through the unique experience of an emotional roller coaster. In the effort to achieve meaningful learning, learners should be desensitized to filming and their discriminating capabilities should be developed prior to VAD to prevent their over-reliance on the facilitator.

Conflict of Interest

The authors have no conflict of interest to declare.

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Ethical Approval

This study was approved by the institutional review board (S-17-217) of the study university.

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