ORIGINAL ARTICLE

Structured Debriefings in Aviation Simulations: A Qualitative Study on Basic Life Support Training for Cabin Crews in Malaysia

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ABSTRACT

Introduction: To develop quality cabin crews, trainings involve simulation-based education (SBE) with structured debriefings – a significant component which plays a critical role in optimising learning outcomes. Previous studies have empirically tested the efficacy of the DIAMOND-structured debriefing model and found significant improvement and retention of the cabin crews' knowledge and skills. This study was aimed to explore the elements of the DIAMOND-structured debriefing model that have been known to promote the acquisition and retention of knowledge and skills in basic life support (BLS). **Methods:** A qualitative study was conducted with a random sample of 16 individual cabin crew members who participated in an in-depth interview with 13 open-ended questions for 45 – 60 minutes. The interviews were transcribed and independently analysed using inductive thematic analysis. **Results:** The codes which have emerged during data analysis were clustered into three themes: (1) Cognitive, with three sub-themes: engagement, learning environment, and ability to reflect; (2) Methodology, with three sub-themes: concept of debriefing, techniques of questioning, and additional elements; as well as (3) Psychosocial, with five sub-themes: attitude, self-awareness, relationships, self-confidence, and work culture. Several suggestions have emerged, such as the implementation of the model. **Conclusion:** The DIAMOND-structured debriefing model was a method to reduce cognitive load, which in turn allowed individuals to organise their knowledge, reflect individually and collectively, as well as structure their ideas. It has showed that the elements has a positive impact on the cabin crews' acquisition and retention of knowledge and skills which will improve the performance and patient safety

Keywords: Aviation Education, Cabin Crew, Structured Debriefing, Simulation Learning, Cognitive Load

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INTRODUCTION

The growing popularity of commercial flights around the world, in addition to an aging population, has contributed to an increase in the number of in-flight medical emergency cases (1). Emergency medical cases that occur in-flight are a new phenomenon that lack attention (2). Compact and small cabins with minimum space for provide medical care, in addition to the low possibility of getting help from a doctor, nurse, or medical assistant, indirectly causes a variety of complications to the passengers (2).

The above issues can be overcome through the presence of crew members who are trained in first aid and can deliver proper treatment rapidly and accurately. Every crew member on duty has to undergo intensive training to be certified as a first-aider. In addition, almost three-quarters of all cases of prevailing emergencies are solely handled by the crew members, who have demonstrated competence in carrying out their duties as first-aiders (3). The guidelines issued by the Federal Aviation Administration (FAA), Aerospace Medical Association (AsMA), Air Transport Medicine Committee, and International Civil Aviation Organisation (ICAO) recommend that every aircraft should have emergency medical kits and automated external defibrillators (AED). Also, the crew members who are involved in each flight should be certified in accordance with the syllabus of basic life support (BLS).

Poor mastery of technical skills and insufficient retention of BLS knowledge among the crew members have been documented in several previous studies. These occurrences can be attributed to several key factors

like (i) ineffective teaching and learning techniques, (ii) variations in the modular teaching and learning sessions conducted by different airline academies, and (iii) insufficient time to acquire knowledge of first aid during training (4). To developing quality crew members who can provide medical care to patients, the teaching and learning methods need to be extended and not be centred on technical knowledge and skills alone. Similarly, the lack of exposure to emergency situations, short training durations, as well as insufficient time to engage with the facilitators are additional factors that lead to ineffective knowledge transfer. Consequently, the quality of emergency treatment delivered to the patients by the crew members declines (5).

Simulation is a practice and learning technique that can be applied to many different disciplines and types of trainees (6). It is a technique (not a technology) to replace and amplify real experiences with guided ones, which are often immersive and have the ability to evoke or replicate substantial aspects of the real world in a fully interactive fashion. The use of simulations in health professional education modules has been shown to facilitate the development of technical and non-technical skills in learners, patients, and health systems (7).

As simulations become an accepted part of everyday education and training sessions for medical communities, attention is being paid to how simulation can best be used to develop technical and non-technical skills (8). However, most current simulative training modules often neglect the core elements of simulation-based learning. The concept in question is debriefing, which is the reviewing of the simulative actions after the eponymous session. Simulation-based medical education reviews have consistently found debriefing to be the most important element in facilitating effective learning (9). Debriefing is a practice whereby students and teachers assess the clinical situation and stimulate the development of critical judgement through reflective learning. It is an opportunity for students to reflect on their performance during the simulation, and to determine how they can act differently in future practices. It also offers the students reality checks, or ways to see themselves through the eyes of their teachers or peers – something which the participants seek for and value (10-12). Therefore, debriefings are moments of reflection with the purpose of enhancing learning through experimental exercises (13).

In order for the instructors to conduct the debriefing sessions, several different conversational structures have been listed in the literature. These conversational structures break up the session into a series of phases to ensure that the conversations progress in an orderly manner until the end of the session. Generally, a three-phase structure is commonly used. This includes an analysis of the events, followed by a discussion and lastly, a summary whereby the knowledge acquired throughout the debriefing is solidified. Rudolph et al. (14-15) have described a three-phase conversational module which consisted of reaction, analysis, and summary. Similar structures have been described as well, such as the 3D model by Zigmont et al. (16), Debriefing with Good Judgement by Rudolph et al. (14), GAS model by Phrampus and O' Donnell (17), as well as DIAMOND by Peter et al. (18).

In the literature, the DIAMOND structured debriefing model (two-sided prompt sheet) has delineated a standardised approach to high-quality debriefings, especially in the area of non-technical skills. Feedback from learners and faculty members have indicated that the model was useful and valuable debriefing tool which benefitted both the participants and faculty members (18). Previous studies have empirically tested the ability of DIAMOND structured debriefing models to help cabin crews members retain BLS knowledge, technical, and non-technical skills following simulated cardiac events (19-21).

Therefore, the aim of our study was to explore the elements of the DIAMOND model that have been known to help the cabin crew members acquire and retain BLS knowledge and skills. The qualitative approach involved sequential explanations of the results of previous empirical studies, which would later add to the growing body of evidence and establish the efficacy of the DIAMOND debriefing model in promoting the retention of BLS knowledge and skills by the cabin crew members.

MATERIALS AND METHODS

This phenomenology study employed a qualitative approach in the form of in-depth interviews to explore the elements of the DIAMOND structured debriefing that have been known to promote the retention of BLS knowledge and skills (technical and non-technical) by the cabin crew members who have participated in a simulated in-flight cardiac event.

Sampling and Data Collection

The study was conducted from 16 October 2017 – 21 December 2017 at one of the airline academies in Malaysia. Using the G power software version 3.12, it was estimated that a minimum total of 65 participants was needed to detect a statistically significant difference between groups at a significance level of 0.05, power of at least 80%, and a medium (0.5) effect size (22). Following an internal review and board approval of the inclusion (certified first-aiders with Safety & Emergency Procedure license) and exclusion (cabin crew members from other airline companies) criteria, a random sample of 65 cabin crew members from the airline company were chosen by the Human Resource Department by using master list generated from the computer for

enrolment in this study. As per the protocol, our team described the details of the study to the cabin crew members and written consent obtained from them prior to the commencement of the study. We obtained a 100% response rate from the cabin crew members who were eligible to participate in the study.

The intervention was carried out by a trainer. It began with a general briefing, followed by a pre-assessment of the cabin crew members' BLS knowledge via a 30-multiple choice question (MCQ) test which lasted for approximately an hour. The MCQs were modified from the American Heart Association (AHA) Basic Life Support (BLS) test and were validated by selected professionals in terms of its content. Most of the adopted questions were modified accordingly as per the scenario of the case. Next, the participants were grouped into teams of five members each for an in-flight simulation based on the case scenario. They were oriented to the role-play based on the case scenario, which covered the expected learning objectives and skills (technical and non-technical) to be acquired as per the elements written on a wall chart.

In the afternoon, a role-play session was conducted for 10-15 minutes. In this session, the trainer assisted the teams by providing instructions and giving hints with regards to the specific actions that were expected to be taken. Subsequently, the trainer conducted a 30-45-minute debriefing session to help the participants reflect on their actions using the DIAMOND structured debriefing model (Figure 1). A face-to-face interview was then conducted by a single researcher at the end of the program in order to identify the elements of the DIAMOND model that benefitted the cabin crew members in terms of the acquisition and retention of the BLS knowledge and skills during the simulation. The confidentiality of data collected from the interviews was explained to all participants prior to the exercise, and informed consent was obtained from the participants once again. All 65 cabin crew members who participated in the intervention were invited to take part in the session. However, only 16 cabin crew members accepted the invitations.

The number of interviewees obtained was sufficient as per the 1:10 ratio (22) for the selection of participants based on the sample size. These interviews were conducted in order to discuss with the cabin crew members the environment, methods, timing, and length of the training session, the role of facilitator, the ways by which all of these factors influenced their learning, as well as the overall experience during the simulation. Some 13 open-ended questions were used to elicit the above information. The 16 in-depth one-on-one interviews lasted for 45 to 60 minutes each. All sessions were conducted in English and all communications were tape-recorded. The audio recordings were transferred into an electronic file and transcribed using the VLC audio player. The interviewer then listened to all the interview transcripts to verify their accuracy.

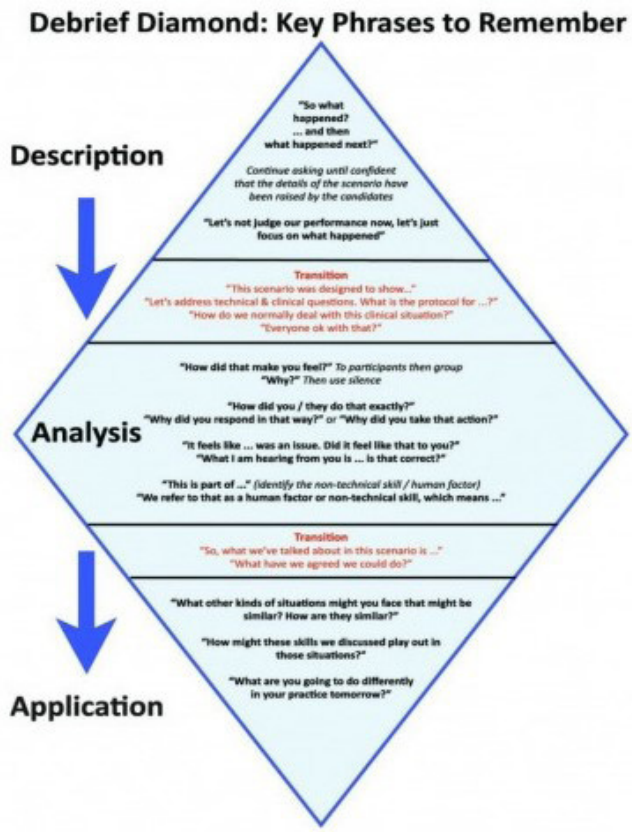

Figure 1: DIAMOND debriefing model (18)

Ethical Considerations

A mutual written agreement between Universiti Kebangsaan Malaysia and the airline company was obtained as per the ethical committee's requirement. Approval for ethical research in humans was obtained from the Faculty of Health Sciences, Universiti Kebangsaan Malaysia (UKM) Research Committee (UKM PPI/111/8/JEP-2017-248).

Analysis

The transcripts were imported into the ATLAS.ti software and content analysis was performed to identify the common themes for further analysis. The first step involved the descriptive coding of as many potential themes/ patterns as possible. This was followed by a search for suitable themes via the sorting of different codes into potential themes and collating all the relevant coded data extracts within the identified themes (23-24). At this point, the authors started to think about the relationships between the codes, between the themes, and between the different levels of themes.

The second step was to refine the themes to ensure (i) the meaningful coherence of the data and (ii) the presence of clean and identifiable distinctions between the themes (25). The third step was to define and name the themes, as well as develop a thematic map of the data (24). At this point, the authors measured the reliability

of data through inter-rater agreements in terms of Kappa calculation (26-27). This final step further defined and refined the themes to ensures that the findings were truly representative of the data.

RESULTS

The interviews with nine (n = 9) flight stewards (56.3%) and seven (n = 7) flight stewardesses (43.8%) were transcribed and included in the analysis. The rest of the demographic characteristics are presented in Table I.

Table I: Demographic characteristics

Demographic	Description	(n)	(%)
Sex	Male	9	56.3
	Female	7	43.8
Age	23-27	1	6.3
	28-32	3	18.8
	33-37	5	31.3
	38-42	2	12.5
	43-47	3	18.8
	48-52	2	12.5
Education Level	SPM/STPM/Matriculation	9	56.3
	Professional Certificate	1	6.3
	Diploma	3	18.8
	Bachelor's Degree	2	12.5
	Master's Degree	1	6.8
Working Experience (Year)	0-5	1	6.3
	6-10	3	18.8
	11-15	6	37.5
	16-20	1	6.3
	> 20	5	31.3
Handling Medical Emergencies Onboard	Yes	14	87.5
	No	2	12.5

Three themes and 12 sub-themes emerged from a total of 115 codes (Table II) reaching saturation after approximately 15 interviews with a Kappa value of .80 (good) were obtained based on five selected raters agreement.

Three main themes from the data analysis were cognitive, methodology, and psychosocial. The cognitive theme had three sub-themes with three categories; the methodology theme had four sub-themes with four categories; while the psychosocial theme had five sub-themes with three categories. These themes, sub-themes, and categories will be described in the rest of this section, along with the representative quotes (Table III).

In the first theme (Cognitive), the cabin crew members mentioned that the debriefing process was very

Table II Overview of the emerging themes, sub-themes, categories and references

Theme	Sub-Theme	Categories	(n) %
Cognitive	Engaging		7 (43.75)
	Learning Environment	Friends Facilitator	16 (100)
	Ability to Reflect	Self-Assessment	8 (50)
Methodology	Debriefing Concept	Reaction Analysis Conclusion	16 (100)
	Questioning Techniques		3 (18.75)
	Elements in Debriefing	Debriefing Scripts	7 (43.75)
	Aspects to Improve		9 (56.25)
Psychosocial	Attitude		2 (12.5)
	Self-Awareness		7 (43.75)
	Relationship	Student - Student Student – Facilitator	9 (56.25)
	Self Confidence		11 (68.75)
	Working Culture	Hierarchy	9 (56.25)

engaging (n = 7). At the same time, it allowed them to self-reflect on their actions (n = 8). The majority agreed that the learning environment was safe (n = 16), and the communications between the participants and facilitators were most responsible for the effective learning process.

With regards to the 'Methodology' theme, the cabin crew members believed that the structured concept (n = 16) of the session, coupled with the debriefing scripts (n = 7), helped make the discussions conducted by the facilitators more organised and oriented to the specific learning objectives. On top of that, the questioning techniques (n = 3) employed by the facilitators enabled the development of a framework for effective learning which could improve the crew members' performance and enable the development of specific skills.

Finally, regarding the 'Psychosocial' theme, the cabin crew members reports that the structured debriefing helped create positive relationships (n = 9) between themselves as well as with the facilitator. On top of that, the majority felt that they were much more confident (n = 11), more positive (n = 2), and more self-aware (n = 7) after going through the sessions. At the same time, all aspects were acquired after they structured their thoughts with the help of the facilitator.

Nevertheless, some cabin crew members mentioned that the work culture (n = 9), which emphasised on hierarchy, might hinder the entire process of debriefing, especially when there were differences in terms of ranks and seniorities among themselves. This would in turn limit discussions and make it difficult to point out mistakes as these remarks, coupled with fear, would be considered as destructive criticism rather than

constructive. On another note, the cabin crew members made several suggestions on the ways to improve the methodological aspects of debriefing sessions:

- The sessions should be conducted simultaneously with video-recordings ('video-assisted debriefing process').
- Utilise the 'play' and 'pause' techniques to allow the cabin crew members to reflect further. Facilitators are highly encouraged to ask questions on the theoretical or practical skills related to the situations depicted in the videos.

DISCUSSION

Simulations and debriefings are becoming more popular as they are active learning strategies with positive impact on thinking skills and lifelong learning. The evidence from previous studies have suggested that the cabin crew members were capable of acquiring and effectively retaining the cognitive and psychomotor skills following simulative learning (19-21). This study has also confirmed that the cabin crews believed the DIAMOND model brought forth positive effects and significant benefits, which will be discussed in this section.

According to the Cognitive Load Theory (CLT), learning is restricted by the finite capability of a learner's working memory. It can only preserve seven to nine newly-obtained items and actively process three such items at any given time (28-30). The demand for resources by the working memory during a learning task is known as cognitive load, which can be divided into intrinsic, extraneous, and germane. While intrinsic cognitive load is associated with the complexity of what is learned, extraneous cognitive load is commonly a result of bad instructional design and is considered to be counter-productive to learning. Germane cognitive load refers to the working memory's resources that are committed to the development and storage of schemata into the long-term memory. For this reason, the above mentioned type

Table III: The overview of theme, sub-themes, categories and representative quotes

Theme	Sub-Theme	Categories	Recording Units
Cognitive	Engaging (n = 7)		*'it triggers me to know about my performance..i badly want to know whether i did good or bad..i really need to know that'*
	Learning Environment (n = 16)	• Friends • Facilitator	*'you ask everyone opinion so that way we feel like a group rather than teacher ….so it's like student centred rather than teacher centred'* *'It was really fun because she instils a bit like she put in a bit of jokes here and there but she does not deviate from the main topic and she correct you from that side. It was a safe learning environment…everyone enjoys and engaged and it also break the ice between student and teacher'*
	Ability to Reflect (n = 8)	• Student Self – Assessment	*'when she asked, everyone will keep looking for answer, your mind will keep on looking for answer, so we all pause a bit'*
Methodology	Debriefing Concept (n = 13)	• Reaction • Analysis • Conclusion	*debriefing is not to find fault. It's more towards helping you out'* *I am able to witness my own mistake, see my friend's mistake also and try to remember whatever the facilitator taught us, correct us'* *'highlight back few points not supposed to do what supposed to do so urmm it's a good urmm whatever resource that we can implement together so for us to enhance better instead of arrr keep on doing the same mistake'*
	Questioning Techniques (n = 3)		*'the questions were relevant…meaning it helps us to build up our knowledge'*
	Elements in Debriefing (n = 7)	• Debriefing Scripts	*'the facilitator conduct the session in a structured manner, from one point to another, then she summarize most of the points and turns out it's like a quick action guidelines'*
	Aspects to Improve (n = 9)		*while the video is playing, we stop then we highlight each part'*
Psychosocial	Attitude (n = 2)		*'I'm preparing myself to be more positive, because positive attitude will deliver positive action'*
	Self-Awareness (n = 7)		*'I will always do my homework, my own mind mapping everything. In case there's an emergency onboard I will apply and also at the same time I will share with others'*
	Relationship (n = 9)	• Student/Student • Student/Facilitator	*'we can work in classroom no issue…....no problem...i don't feel insecure or inferior…not at all'* *'I'm comfortable with the facilitator, I've known her for years and she's really nice to all of us'*
	Self-Confidence (n = 11)		*'emergency happen I'll be much more calm more confidence and I would definitely can take charge even though there is no supervisory crew available so that's how I feel I can apply there'*
	Working Culture (n = 9)	• Hierarchy	*'I still think maybe it's a because of the gap because the supervisor and the non-supervisor has a gap or maybe it's our culture because the non-do not questioned or correct them'*

of cognitive load is directly connected to learning (31-32).

In this study, the intervention began with several lectures and updates on the current medical emergencies related to heart attacks. At this moment, the intrinsic load has already begun to increase, especially for the participants who had poor skills and knowledge in emergency resuscitation. Second, the pre-briefing session, coupled with an introduction to the simulators involved in the simulative learning session, further increased the intrinsic load. A detailed explanation of the learning objectives indirectly triggered the participants' working memories to process several steps, techniques, algorithms, and methods of proper usage of the equipment – all of which were required for effective resuscitation. In addition, emotional factors simultaneously affected the extraneous load. Examples of these factors included peer pressure and the perception of being judged or analysed for their bad performance, which are considered to be a threat to their personal crew-member records.

Third, we would like to consider the element of interactivity. This term refers to the degree to which each to-be-discovered element requires references to other elements which may have been learned or need to be learned. Interactivity is also the key determinant of intrinsic cognitive load (30). As such, through the re-creation of the interplay between information, skills, and nontechnical skills essential in real life, the high-fidelity simulations of medical emergencies developed by our team offered a form of complicated learning with substantial amounts of interactivity (33). We suspected that the cognitive load of the management medical emergencies in this case scenario probably surpassed the capacities of the working memories of the participants, particularly in those who had no prior knowledge and skills. The aforementioned components helped improve the participants' overall performance by means of freeing up more working memory to cope with latter's cognitive loads which have surpassed the processing capacities of the working memories (34). Apart from this, the other factors mentioned above also increased the capacity of the working memory, thus making it difficult to achieve an effective learning process.

As described, intrinsic load is associated with the strong presence of interactivity in the case scenario. To reduce the participants' cognitive loads, the debriefing scripts featured in the DIAMOND model assist facilitators, especially those for novice learners, to conduct effective review sessions. These act as cognitive aids which can directly assist them in carrying out structured review sessions to ensure the achievement of the learning objectives (35). To improve the learning process, this script was also accompanied by several semi-structured questions which encouraged two-way discussions between the participants and facilitators.

Eppich and Cheng (36) have suggested that the elements of debriefings could be categorised into three (key elements, debriefing techniques, and additional elements). The DIAMOND debriefing techniques within the analysis phase encouraged the participants to evaluate their individual performance. The participants tended to reflect on what they did during the simulative exercises and assimilate their actions using the knowledge gained from the debriefing sessions. This process was known as reflective practice (37). In this practice, the participants compared and reflected on their performance as well as further identified the appropriate actions to be taken to better handling of the situation better. The whole process was referred to as reflection on action (38). As a result, these techniques encouraged structured discussions based on the learning objectives, which in turn helped reduce the cognitive load by allowing the participants to reflect on the specific elements that were related to the simulative experience.

Furthermore, DIAMOND debriefing techniques enabled specific skills to be discussed as per the needs of the participants, which then allowed the facilitators to implement the scaffolding technique through a structured framework to promote learning within the proximal development zone (18). Overall, these techniques helped reduce the cognitive load and free the working memory to process other elements (28). As a result, the knowledge acquired from the debriefing sessions were successfully assimilated into the existing knowledge in the form of schemes. This indirectly freed spaces in their working memories.

With regards to extraneous load, emotional factors may increase the load as discussed earlier. The descriptive phase (reaction) in the DIAMOND model allowed the participants to explore their reactions and emotional impact based on the simulative exercise. This was the most important stage which allowed the participants to vent their emotions with the aim of ensuring that the participants were calm and free of threats that might otherwise interfere with the debriefing process (38-40). Hence, this phase helped to reduce the stresses which arose from the simulation, especially for those who failed to achieve a satisfactory performance.

Apart from that, the efficacies of the debriefing sessions are also affected by the learning environment and the relationships between the participants and facilitators. A safe learning environment is critical to ensure that the extraneous load can be reduced. Thus, DIAMOND debriefings help the facilitators to create a state of psychological safety for the participants. The facilitator indirectly assured the participants that each feedback and suggestions was aimed to improve their performance. These comments were free from threats which could lead to embarrassment (41-42). In fact, a fictional contract was created between the facilitator and the participants to ensure that the discussions were

intended to correct the participants' mistakes and to improve their performances (43). Hence, a safe and free environment was available for the participants to voice out their opinions and suggestions without fear. Thus, discussions between the participants and the facilitator could be done smoothly.

In addition, the bonds between the participants and facilitators play an important role in ensuring that discussions can be conducted effectively. In this session, the facilitator considered herself an individual who was learning along with the participants and hence, she did not exhibit an authoritarian attitude. This in turn generated effective two-way discussions between the facilitators and participants, thereby leading to student-oriented discussions (44). Nevertheless, a similar concept has failed to prevail among the participants. Due to the hierarchal differences, especially with reference to the much older or experienced participants, it was difficult for the younger ones to voice their opinions and highlight the mistakes made by the older or experienced crew members. However, the presence of a facilitator during the debriefing session indirectly helped reducing this disparity. Also, the facilitation process enabled the less favourable issues to be taken over by the facilitator to ensure that the learning objectives are fully achieved. As such, the elements of the DIAMOND structured debriefing helped reduce the intrinsic and extraneous loads by freeing space in the working memory to process new items during learning.

The findings of our study were in line with previous studies which have reported the successful application of DIAMOND model debriefings. These have given rise to effective and high quality debriefing sessions as well as benefitted participants across different healthcare professionals. Nevertheless, our study has also shown that apart from utilising the structured model for debriefing sessions, the factors which affect the cognitive loads of the participants should be addressed and taken into consideration to ensure the attainment of effective learning based on Sweller's cognitive framework (27). In this study, the mastery of knowledge and skills did not solely depend on the debriefing session alone; it was also influenced by other factors which could increase the cognitive load and exert a cognitive burden on the participants.

In addition, the participants in this study were classified as laymen, or non-healthcare professionals. The differences in the work environments indirectly contributed to the acquisition and retention of knowledge and necessary skills as these participants did not deal with patients on a daily basis. Hence, this study has given an overview of the field of simulation, even though the efficacy of simulative learning coupled with debriefing sessions could not yet be generalised to the non-medical community. Therefore, further explorations are needed to extend the current standard practices so that they can be applied in different contexts, such as the aviation industry.

The study had specific limitations as a result of its qualitative nature. Studies like this are dependent on the researchers' approach and preconceptions when the data is extracted and interpreted. Apart from that, the selected facilitators in this study have been asked to utilise the DIAMOND model for the post-simulation debriefing without any direct training from their respective centres. Even though the facilitators have been trained in simulative and debriefing skills for months by the Certified Simulation Healthcare Educator (CSHE), it was crucial to note that the effectiveness of the debriefings could be affected by the facilitators' debriefing skills.

CONCLUSION

Simulations have become an important part of aviation education. Researches in this area are being increasingly conducted with the main aim of enhancing the performance of cabin crew members. The results of this study have confirmed that simulative learning sessions, followed by structured debriefings using the DIAMOND model, are interactive, stimulatory, and reflective. The presence of debriefing scripts and techniques enable the consolidation and systematisation of knowledge and skills, as well as individual and collective reflections via structured thinking. The safe learning environment and positive relationship encourages the cabin crew members to not be afraid to voice out their opinions, reflect, and change their behaviours. It also facilitates (i) communications among themselves and facilitators (ii) the conversion of theory to practice, as well as (iii) constructive criticism based on reflections of actions. Overall, this study has showed that the DIAMOND structured debriefing model has a positive impact on the cabin crew members' acquisition of knowledge and skills. At the same time, it enhances the retention of the same, which will in turn improve in the members' performance and patient safety.

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