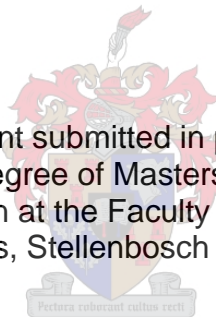# Paramedic Students' Experience of Simulation Debriefing

by
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Research Assignment submitted in partial fulfilment of the
requirements for the degree of Masters of Philosophy in Health
Professions Education at the Faculty of Medicine and Health
Sciences, Stellenbosch University

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Declaration

By submitting this research report electronically, I, Preevan Naidoo, declare that the entirety of the work contained therein is my own, original work, that I am the sole author thereof (save to the extent explicitly otherwise stated), that reproduction and publication thereof by Stellenbosch University will not infringe any third-party rights and that I have not previously in its entirety or in part submitted it for obtaining any qualification.

Preevan Naidoo   **December 2021**

Signature   Date

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Summary

Debriefing the learning experience of paramedic students during simulations is imperative for learning. Yet, it is under-researched and often overlooked. The limited research exploring simulation debriefing in a paramedic context inspired this qualitative research study. The study aimed to investigate how final year Bachelor of Emergency Care (BEMC) students at the Cape Peninsula University of Technology's Department of Emergency Medical Care (CPUT DEMS) experienced their simulation debriefings and the dimensions of the debrief they found valuable.

In this small-scale study, informed by a constructivist paradigm, I undertook an exploratory approach to answer the research question. By way of convenience sampling, all of the fourth-year BEMC paramedic students of the CPUT DEMS, registered for the 2019 academic year, were invited to participate in this research study. Eight students positively responded to the invite (n=8).

Individual, semi-structured interviews were conducted using a video conferencing platform. The voice recordings taken from the interviews were self-transcribed verbatim, organised and sorted. Braun and Clarkes' (2006) six steps to thematic analysis were followed to analyse the data. The data was coded. The first round of coding was completed using a 'soft eye'. Initial codes were revisited, refined or merged to avoid codes that were similar or overlapping. Throughout the study, steps were taken to ensure that the data was credible, transferable, dependable, and confirmable.

The study revealed four themes: the debrief as an opportunity for learning; enablers for learning during the debrief; barriers restricting learning during the debrief; and students' expectations from the debrief. The findings revealed that debriefing enhanced learning, bridged the theory-practice gap, encouraged self-improvement, promoted a student-centred learning approach and, ultimately, promoted reflective practitioners thus encouraging students to become lifelong learners. The findings also highlighted the learning barriers during the debrief but recommendations were provided suggesting how to improve the practice of post-simulation debriefing to enhance learning.

Keywords: Debrief, post-simulation debrief, feedback, reflection, self-reflection, debriefer, clinical educator, self-reformation, debriefing enablers, debriefing expectations, debriefing barriers, post-conference, simulation discussions

Opsomming

Dit is noodsaaklik vir leerdoeleindes dat paramediese studente se leerervaring gedurende 'n simulasie ontleed word[1]. Die simulasie-ontleding word egter dikwels onvoldoende nagevors en oor die hoof gesien. Die beperkte navorsing oor simulasie-ontleding in 'n paramediese konteks is die inspirasie vir hierdie kwalitatiewe navorsingstudie. Die studie beoog om te ondersoek hoe finalejaar studente wat ingeskryf is vir 'n Baccalaureus in Noodsorg (BEMC) aan die Kaapse Skiereiland Universiteit vir Tegnologie se Departement van Mediese Noodsorg (CPUT DEMS) hul simulasie-ontledings ervaar. 'n Verdere doel was om te ondersoek watter dimensies van die ontleding deur die studente as waardevol ervaar is.

Hierdie kleinskaalse studie, ingelig deur 'n konstruktivistiese paradigma, het 'n ondersoekende benadering gevolg om die navorsingsvraag te beantwoord. By wyse van gerieflikheidsteekproefneming is al die vierdejaar BEMC paramediese studente van die CPUT DEMS, wat vir die akademiese jaar 2019 geregistreer is, genooi om aan hierdie navorsingstudie deel te neem. Agt studente het positief op die uitnodiging gereageer (n= 8). Individuele, semi-gestruktureerde onderhoude is gevoer met behulp van 'n videokonferensieplatform. Die klankopnames van die onderhoude, is deur die navorser woordeliks getranskribeer, georganiseer en gerangskik. Braun en Clarke (2006) se ses stappe van tematiese analise is gevolg om die data te analiseer. Die data is gekodeer. Die eerste rondte van koderings is voltooi met 'n 'sagte oog'. Aanvanklike kodes is hersien, verfyn of saamgevoeg om kodes wat soortgelyk is of oorvleuel, te vermy. Gedurende die studie is stappe geneem om te verseker dat die data geloofwaardig, oordraagbaar, betroubaar en bevestigbaar is.

Die studie het vier temas aan die lig gebring: die ontleding as 'n geleentheid om te leer; bemagtigers vir leer gedurende die ontleding; hindernisse wat leer beperk tydens die ontleding; en studente se verwagtings van die ontleding. Die bevindinge het getoon dat die ontleding lei tot verbeterde leer, die oorbrugging van die gaping tussen teorie en praktyk, selfverbetering, die bevordering van 'n studentgesentreerde leerbenadering en uiteindelik die bevordering van reflektiewe praktisyns om studente aan te moedig om lewenslange leerders te word. Die bevindinge beklemtoon ook die leerhindernisse tydens die ontleding, maar aanbevelings uit die studie dui aan hoe om die praktyk van post-simulasie-ontleding te verbeter ten einde om leer te verbeter.

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[1] Die Engelse term wat in die literatuur gebruik word, is *debrief*. Daar is ongelukkig nie 'n soortgelyke gepaste term in Afrikaans nie. In hierdie opsomming word 'ontleed' en 'ontleding' gebruik, maar die skrywer is bewus daarvan dat die Afrikaanse term nie dieselfde konnotatiewe betekenisse as die Engelse term het nie.

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Abbreviations

AIM	:	Advocacy-Inquiry Method
BEMC	:	Bachelor of Emergency Medical Care
COVID 19	:	Corona Virus 2019
CPUT	:	Cape Peninsula University of Technology
CPUT DEMS	:	Cape Peninsula University of Technology Department of Emergency Medical Services
DEMC	:	Diploma in Emergency Medical Care
DEMS	:	Department of Emergency Medical Services
ELT	:	Experiential Learning Theory
EMC	:	Emergency Medical Care
HPCSA	:	Health Professions Council of South Africa
INACSL	:	International Nursing Association for Clinical Simulation and Learning
MS Teams	:	Microsoft Teams
NQF	:	National Qualifications Framework
PEARLS	:	Promoting Excellence and Reflective Learning in Simulation
WCG CEC	:	Western Cape Government College of Emergency Care

CHAPTER 1: INTRODUCTION

1.1 Introduction

Simulation-based learning is an effective and valuable teaching strategy widely used to facilitate clinical learning (Ker & Bradley, 2014) and to advance student proficiency to perform clinical skills (Grant et al., 2018). While simulation is increasingly being used for the training of both undergraduate and postgraduate medical and nursing students (Grant et al., 2018; Hustad et al., 2019; Frandsen & Lehn-Christiansen, 2020; Tosterud et al., 2014), it can be regarded as fundamental in the training of paramedic students (Tosterud et al., 2014). By using high fidelity computerised manikins, hands-on learning is promoted (Bender & Walker, 2013) within a realistic but safe learning environment (Bender & Walker, 2013; Smith & Andersen, 2014). In such an environment, paramedic students can practice and master their clinical skills, as well as enhance their cognitive and affective skills (Bender & Walker, 2013; Dreifuerst, 2009; Ker & Bradley, 2014). This can reduce medical errors and improve patient safety and care (Ker & Bradley, 2014).

After a simulation event, learning is further enhanced through debriefing (Bender & Walker, 2013; Bowe et al., 2017; Doherty-Restrepo et al., 2018; Garden et al., 2015; Ramani et al., 2019). During the debriefing, students reflect on the events that unfolded during the simulation (Wilson & Asbury, 2019), whilst the clinical facilitator provides feedback aimed at addressing performance gaps. Performance gaps are the difference between best practice and observed practice (Burns, 2015; Eppich & Cheng, 2015; Grant et al., 2018). Including debriefing opportunities following simulation is of critical importance for students' clinical learning (Coutinho et al., 2017; Omer, 2018; Tosterud et al., 2014) as student knowledge is explored, the performance of skills is evaluated, and clinical decision making and reasoning are reflected upon (Coutinho et al., 2017; Omer, 2018; Wilson & Asbury, 2019).

Despite the potential value that debriefing holds for optimising learning, there appears to have been only a few studies, particularly in the South African context, that have explored paramedic student's experience of simulation debriefing. This qualitative study aims to address this gap. It seeks to gain a better understanding of paramedic students' experience in terms of debriefing and to understand the dimensions of debriefing that these paramedic students find valuable. It is envisaged that this study would aid in the current understanding of the debriefing practices involving paramedic students in the South African context and enhance the practice of debriefing within paramedic education.

1.2 Background and context

The Diploma in Emergency Medical Care (DEMC) and the Bachelor of Emergency Medical Care (BEMC) are, to date, the only two programmes that allow for their graduates to register with the Health Professions Council of South Africa (HPCSA)[2] as paramedics. The DEMC programme is two years long, 240 credits, and a National Qualifications Framework (NQF) level six aligned programme, while the BEMC is a four-year, 480 credit, NQF level eight programme. In the Western Cape, the teaching of emergency medical care occurs at the Cape Peninsula University of Technology (CPUT), while the teaching of emergency medical care in the DEMC is undertaken at the Western Cape Government College of Emergency Care (WCG CEC). The curriculum train these future health professionals within the cognitive, psychomotor, and affective learning domains. Learning opportunities (both lectures and simulations) allow for the paramedic students to acquire theoretical knowledge about the skills they are allowed to perform within the field, the know-how to perform these skills, and the opportunity to perform these skills, specifically during simulations.

Patient simulation is an effective teaching approach that is fundamental for the teaching of clinical (Issenberg & Scalese, 2007; Massoth et al., 2019), cognitive, and affective skills (Motola et al., 2013). Simulation training is key to training paramedics across the world (McKenna et al., 2015) and it is through simulation-based learning that these students can come to practically apply their theoretical knowledge (Massoth et al., 2019) within a safe space. Also, through simulation, paramedic students could perform life-saving interventions, such as endotracheal intubation, intravascular cannulation, etc. on high-fidelity manikins in real time. In addition to the practising of skills, further advantages of simulation-based learning include the clinical facilitator introducing conundrums into the simulation to put to the test students' clinical decision-making skills. Students' self-reflection also helps clinical facilitators understand how the decisions were reached (Hagiwara et al., 2014; McKenna et al., 2015).

High-fidelity simulation uses manikins that add realism to the paramedic students' learning experience, promotes patient-centred care, and improves patient safety (Motola et al., 2013). These sophisticated manikins are produced with electronics and software programmes to replicate human functionality, such as generating pulses and breathing sounds to name a few. The high-fidelity manikins create a realistic, interactive learning experience. Although these

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[2] Health Professions Council of South Africa is a statutory body, established in terms of The Health Professions Act (Health Professions Council of South Africa, 2020).

manikins may have limitations, they nevertheless provide very realistic experiences for students and can also generate stress and uncertainty for the students (Massoth et al., 2019). This uncertainty needs to be explored during the learning process, which emphasises the need for debriefing that will close the learning cycle (Ker & Bradley, 2014).

A debriefing session following stimulation is, therefore, crucial for learning as the debriefing intensifies paramedic students' learning experience. The process of debriefing is aimed at developing paramedic students' psychomotor and cognitive skills by identifying and addressing their gaps in knowledge (Eppich & Cheng, 2015). Yet, this key dimension is often overlooked (Ross, 2020; Williams et al., 2016; Wilson & Asbury, 2019) and is currently under-researched (Wilson & Asbury, 2019).

1.3 The rationale for the study

Debriefing, as part of simulation scenarios, is considered best practice in evidence-based literature and key to effective simulation training (Williams et al., 2016; Wilson & Asbury, 2019). Work conducted in the field of debriefing in health professions education is predominantly in the context of training medical and nursing students (Coutinho et al., 2017; Eppich & Cheng, 2015; Omer, 2018; Martins et al., 2018; Palaganas et al., 2016; Tosterud et al., 2014). There is less in the literature that speaks to simulation debriefing in a paramedic context, with limited research investigating paramedic students' perceptions of how debriefing enriched their learning, and few debriefing guidelines for paramedic clinical facilitators (Wilson & Asbury, 2019). The paucity of literature guiding those clinical facilitators who lack formal training and mentorship on how to debrief a student's performance following their simulation could give rise to a poor learning experience.

The heads of department at the WCG CEC motivate for the regular inclusion of debriefing during simulation training. Yet, in my experience as a member of staff responsible for student learning within the DEMC programme, there is little direction provided to the clinical facilitators on how the debriefing should be performed, resulting in limited uptake of debriefing by staff in the programme. The approach to debriefing in the programme has been inconsistent and it is not known how or whether the students find value in the debriefing sessions following patient simulations.

1.4 Problem statement

During clinical placement and clerkship, future health professionals contextualise their theoretical knowledge through experiential learning, supported by mentoring and bedside teaching (Yardley et al., 2012). Paramedics provide emergency care and life-saving interventions to critically ill or

injured patients, often in suboptimal, dangerous, and dynamic environments (Williams et al., 2016). The need to urgently transport these critical patients to definitive care means that formal teaching during experiential learning is rarely conducted, or even overlooked (Bagwandeen & Singaram, 2016; Ross, 2020).

The patient simulation promotes real-time learning but within a safe space, where the debriefing further promotes learning through feedback and critical reflection. However, if quality debriefing does not take place, this could influence the student's learning and negatively influence their ability to provide the life-saving interventions required to treat critically ill patients.

Also, with the limited research exploring simulation debriefing in a paramedic context, there was a need to understand what happened during the debriefing, how it was constructed and experienced. If the quality of the debriefing was inconsistent, unstructured, or perhaps did not even take place, then students might not be optimally prepared to manage actual emergencies. These ideas informed the development of this study.

1.5 Research question

The following research question guided the study:

How does the final year Bachelor of Emergency Care students at the Cape Peninsula University of Technology experience their simulation debriefing opportunities?

1.6 Aim and objective of the study

The study aimed to better understand how paramedic students perceived simulation debriefings, what they found useful, or less useful. The objective was to ultimately provide direction on debriefing during simulation to clinical facilitators involved in the training of paramedic students.

1.7 Reflection

My journey as a student on the Master of Philosophy in Health Professions Education has encouraged me to ask questions about my teaching practices and about how my students learn. As a clinical facilitator, I have advocated for the adoption of simulation debriefing yet soon learned that my technique for debriefing was unstructured and inconsistent. I loved providing feedback to students; highlighting areas of strengths and weakness but would soon default back into providing instructions on how I expected skills to be performed centred on my practice. I did not know how to draw the line between facilitating the students' learning and providing them with critical

feedback, especially as the latter often discouraged student engagement. I was intrigued to learn the art of simulation debriefing but through the guidance of the paramedic students. I wanted to understand how these students experienced their simulation debrief, what worked for them, what did not, and whether their expectations were met? These were the experiences that would inform my debriefing practice.

1.8 Conclusion and structure of this research report

This research report consists of six chapters. Chapter 1 provides an overview of the background to the study whilst chapter 2 delivers a detailed discussion of simulation debriefing, differentiating between feedback and debriefing during simulation-based training. The guided process of debriefing, the theories underpinning debriefing, and the standards recommended for supporting debriefing, and the importance thereof will be explored through a comprehensive review of the literature. This chapter also highlights students' perceptions of how debriefing benefitted them and the challenges that could impede debriefing experience thus further arguing why this study is necessary.

The method, research design, data-generating activities, and the analysis of the data are described in chapter 3. Furthermore, the ethical considerations of this study coupled with the assumptions and the limitation of the study are disclosed, as well as a detailed explanation as to how trustworthiness for the study outcome was achieved. The findings of this study are presented in chapter 4 whilst a discussion of the findings revealed during the study is highlighted in chapter 5. The discussion revolved around the emergent concepts and the relation of these concepts to the literature.

Chapter 6 concludes the study. The conclusions were drawn by fulfilling the aims and objectives of the study and answering the research question through the findings of the study. Recommendations on how to improve the practice of simulation debriefing are also provided in chapter 6.

CHAPTER 2: LITERATURE REVIEW

2.1 Introduction

The practice of debriefing is probably best-known as a meeting of teams, after a critical incident, to deliberate and learn from experiences related to the incident, either good or bad, with the intent to improve future practice (Allen et al., 2018) or to prevent adverse mental health outcomes (U.S. Department of Veterans Affairs, 2019). The practice of debriefing also typically includes operational, psychological, and critical incident stress debriefing (Allen et al., 2018; U.S. Department of Veterans Affairs, 2019).

This chapter offers an overview of some of the key literature related to debriefing in an educational context occurring post-simulation during the teaching of future health professionals. It focuses on understanding simulation debriefing, the learning theories underpinning debriefing, understanding how adults would learn from debriefing, the process guiding the simulation debrief, the debriefer, and their role in the simulation debrief.

2.2 Understanding simulation debriefing

2.2.1 Defining debriefing

Debriefing of future health professionals, following a simulation experience, is a constructive learning approach (Dreifuerst, 2009; Dreifuerst, 2012; Krogh et al., 2016) involving communication between the clinical facilitator and the student aimed at closing the learning loop (Ker & Bradley, 2014). It is intended to promote reflective practice (Dreifuerst, 2009; Garden et al., 2015); identify gaps in the student's knowledge (Garden et al., 2015; Ramani et al., 2019); provide for remediation; positively reinforce behaviour; and address activities to support continuing development (Garden et al., 2015).

During the debrief, a two-way in-depth conversation between the debriefer[3] and students ensues (Bender & Walker, 2013; Krogh et al., 2016). The content of these discussions may include the experiences shared by both the debriefer and students during the simulation (Bender & Walker, 2013) or areas that the debriefer may perceive as knowledge gaps (Eppich & Cheng, 2015; Garden et al., 2015; Ramani et al., 2019) as well as procedures that require refining. Active

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[3] The clinical facilitator who manages the simulation debriefing is also known as the debriefer.

engagement is facilitated by an individual who is competent in debriefing (INACSL Standards Committee, 2016) and skilled to guide students to reflect on their experiences (Bender & Walker, 2013; Bowe et al., 2017; Dreifuerst, 2009). The debriefer also helps students to conceptualise their thoughts and rationalise their actions (Bowe et al., 2017) so that clinical reasoning and critical thinking are promoted (Bender & Walker, 2013; Dreifuerst, 2009).

2.2.2 Differentiating between debriefing and feedback in simulation training

Feedback is an aspect of the learning cycle that has areas of overlap with debriefing. The terms debrief and feedback are often used interchangeably (Ker & Bradley, 2014; Reierson et al., 2017; Sawyer et al., 2016) and yet they are not entirely the same (Sawyer et al., 2016). In the context of health professions education, debriefing is considered a specific form of feedback that is fundamental when used in simulation-based learning (Garden et al., 2015; Motola et al., 2013). It is described in the literature as a practice that facilitates and encourages reflection (Bender & Walker, 2013; Dreifuerst, 2009; Garden et al., 2015) on an experience encountered during the simulation. Although feedback is nested within debriefing, terms such as feedback, post-conference, and simulation discussions (Deason et al., 2013) are often used to describe debriefing. Indeed, the term feedback is sometimes preferred to debrief in the literature (Burns, 2015; Omer, 2018).

Feedback, either intrinsic or extrinsic (Ker & Bradley, 2014), is a crucial component for driving competence (Kneebone, 2005), positively altering students' behaviours, identifying and addressing knowledge gaps, and bridging the gaps between theory and practice (Bagwandeen & Singaram, 2016; Boet et al., 2014; Ha, 2018). Intrinsic feedback is defined as the conversational framework rooted within the teaching and learning experience (Ker & Bradley, 2014) whilst extrinsic feedback is provided after an event occurred (Ker & Bradley, 2014). Through feedback, the learning goals not met, only partially met, or satisfactorily met during the simulation are discussed between the students and debriefers (Motola et al., 2013).

Feedback provided during simulation involves the clinical instructor highlighting gaps in the students' performance (Eppich & Cheng, 2015; Grant et al., 2018) and then the clinical instructor informs the student how to improve (Hustad et al., 2019). The objective of this feedback is aimed at improving personal practice, ensuring clarity about the learning event and raising students' self-awareness (Ker & Bradley, 2014).

For this study, the discussions that take place between the debriefer and student, the feedback provided by the debriefer to the student, and the student's reflection on a learning experience will

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be referred to as debriefing. The advice provided by the debriefer to the student, highlighting areas needing improvement or recommendations on how to improve, will be referred to as feedback. This feedback will nevertheless be positioned within the context of a debrief.

2.2.3 The significance of a simulation debrief

The advantages of simulation debriefing in medical education are well documented. For debriefing to be effective many key factors should be present. These factors include active participation from the students and the debriefer. The intent of the debrief should be directed towards learning and improvement and discussions that are specific to an experience encountered during the simulation should be included. In addition, input from multiple sources should be encouraged (Eppich & Cheng, 2015).

Debriefing of students' performances during simulation is an essential (Deason et al., 2013) and effective tool (Tosterud et al., 2014) when aiming to create a valuable learning experience (Burns, 2015). The learning experience is beneficial to all students present for the debriefing session, even for those watching the simulation and debriefing (Tosterud et al., 2014). This valuable learning experience is amplified when students are allowed time for self-reflection so that the link between theory and real-life situations is instituted (Burns, 2015; Omer, 2018). Students that reflected on their simulation performance showed raised self-awareness, improved their understanding of their practice, and improved areas in their practice. This was evident amongst the 4th year Bachelors Degree in Nursing students who partook in Coutinho et al.'s (2017) study. The students experienced their simulation debriefing as positive and valuable. The debriefing allowed them to reflect on their actions to gain a better understanding of what was done and what had happened as well as how to improve future practice (Coutinho et al., 2017). These students also disclosed that the environment created during the debrief made them feel calm and untroubled when participating during the debriefing.

2.3 Learning theories underpinning debriefing

2.3.1 The experiential learning theory

Simulation is a teaching method used by clinical facilitators to create a hands-on learning experience for students where they learn by reflecting on a specific experience after the simulation event itself (Bette et al., 2014; Bowe et al., 2017; Cheng et al., 2017; Issenberg & Scalese, 2007; Kolb, 1984). Simulation learning allows for an experiential learning cycle to take place (Amod &

Brysiewicz, 2019) when teaching emergency medical care to paramedic students. The experiential learning cycle is synonymous with the work documented by Kolb (1984) who defined experiential learning as a process whereby knowledge is created through transformation by reflecting on one's life experiences. Kolb (1984) drew on work completed by Dewey (1938), Lewin (1951), and Piaget (1971) to develop his theory. They each focused on the experiential components of learning.

2.3.1.1 John Dewey's contribution to Kolb's experiential learning theory

Dewey (1938) believed that students embraced a hands-on approach to learning and learn by doing. He advocated that students interact with the environment to make meaning of their experience and to learn, or in other words, learning through experience (Dewey, 1938; Casey & Quennerstedt, 2020; Kaufman & Mann, 2014).

Drawing on Dewey's work, Kolb (1984) reasoned that learning is a dialectic course of action that creates knowledge. He further described learning to be holistic, integrative, and resulted from the interactions between a person and the environment. Dewey's model further developed the nature of learning by describing "how learning transforms the impulses, feelings, and desires of concrete experience into higher-order, purposeful action" (Dewey, 1938:22).

2.3.1.2 Jean Piaget's contribution to Kolb's experiential learning theory

Jean Piaget, a psychologist, is acclaimed for his theory on how experience influences cognitive development (Kaufman & Mann, 2014). He hypothesised that people produced knowledge and formed meaning based on their experiences. Piaget believed that children learned differently from young adults. Children were continuously trying to make sense of the world, organising and interpreting new information to understand the world through mental organisations called schemas or mental models (Huitt & Hummel, 2003). But for children to develop, they needed to grow and change.

Piaget believed that a process of assimilation and accommodation was needed for development to take place (Huitt & Hummel, 2003). Assimilation is the process of how children perceive and adapt new information or the process of making sense of newly acquired information by relating the new information to preexisting knowledge (Huitt & Hummel, 2003). Modifying the way of thinking based on new information or an experience is known as accommodation (Huitt & Hummel, 2003).

Kolb (1984) adopted the process of assimilation and accomodation from Jean Piaget's cognitive development theory but applied the theory to adults. Kolb (1984) believed that assimilation is achieved when adults familiarise themselves with new knowledge by way of abstract conceptualisation or to make sense of the knowledge acquired through reflective observation. Adults would alter the way they think based on the new learning experience owing to concrete experience and active experimentation.

2.3.1.3 Kurt Lewin's contribution to Kolb's experiential learning theory

Kurt Lewin was well known for his work on action research, force field analysis, group dynamics, leadership climates, the process of change, and he developed a psychological equation of behaviour. The concept of action research was first introduced by Lewin in 1944. The initial model was a cycle of planning, acting, observing, and reflecting (Moreno, 1953). Later, the model was described as an ongoing spiral of steps involving a cycle of planning, action, and fact-finding about the result of the action.

Lewin's work also involved integrating theory with performance and focused on leadership styles and teamwork amongst peers. This focus led to the development of training groups. Lewin (1951) studied interactions within the training groups that was sparked by tension between the concrete experience of trainees and the conceptual models of teachers. This gave rise to his development of the experiential learning model (Lewin, 1951). This experiential learning model was needed to address the tension and aid students in abstract learning from concrete experiences (Lewin, 1951).

2.3.1.4 Kolb's experiential learning theory

Kolb (1984) used the concepts described by Dewey (1938), Piaget (1971), and Lewin (1951) to put forward a 4-step Experiential Learning Theory (ELT). This theory emphasised the importance of experience in the learning process. To date, his work is considered a pillar of adult learning theory (Schertzer & Patti, 2020).

ELT is best described as a continuous process or as a learning cycle (Figure 2.1). The learning cycle has four stages, namely, Concrete Experience, Reflective Observation, Abstract Conceptualisation, and Active Experimentation (Kolb, 1984; Poore et al., 2014). The learning cycle should follow the sequence, however, the model could be entered at any stage (Kolb, 1984; Poore et al., 2014; Schertzer & Patti, 2020).

When applied in the context of simulation, during the stage of concrete experience, the clinical educator utilises a simulated patient to create a learning experience for the student. The student will immerse themselves in this experience, which they might find thought-provoking or interesting (Amod & Brysiewicz, 2019) and where they would consider what was done well or what was not done well. This stage is followed by the student reflecting on the experience and forming new ideas during the stage of abstract conceptualisation (Meyer et al., 2021). For active learning to occur, students engaged in a simulation and debriefing learning activity, reflect upon their actions and gain knowledge from participation in the learning activity. Also, in this phase students make sense of their learning experience and address gaps in performance identified through feedback from the instructor. The debrief session will further encourage active learning through reflection. Students are encouraged to problem-solve, as well as recognise areas of their performance needing improvement or areas of knowledge needing focus. The debriefing of simulations is, therefore, embedded in the stages of reflective observation and conceptualisation.

Students learn differently and learn using different learning styles. Kolb's learning cycle encompasses four stages of learning as well as different learning styles (Reynolds et al., 2020). Accommodating, Diverging, Assimilating, and Converging make up these 4 different learning styles (Kolb, 1984; Poore et al., 2014 Reynolds et al., 2020).

The role of reflection is central to Kolb's learning cycle. Throughout the simulation and the simulation debrief, for example, students should either reflect-in-action or reflect-on-action (Schön, 1983; Schön, 1987). The reflection-in-action is typically spontaneous and requires the student to think during the simulation (Schön, 1983; Schön, 1987). Here the student reflects, draws from prior experiences and knowledge (Schön, 1983; Schön, 1987; Ker & Bradley, 2014), and articulates abstract concepts to make sense of new information while in the simulation space (Taylor & Hamdy, 2013).

The debriefer encourages students to reflect on their actions, disclose and discuss their thoughts and feelings (Kolb, 1984; Poore et al., 2014). In contrast to the reflection-in-action, the reflection-on-action is less formal and occurs during the debriefing session where the student could analyse their actions (Schön, 1983; Schön, 1987). Driefuerst (2009), writing specifically about simulation, built onto Schön's theory by asking the question "what if". The intention is to promote further thinking and higher levels of thought required for clinical reasoning and clinical judgement within the field, thus creating optimal learning for the students (Dreifuerst, 2009).
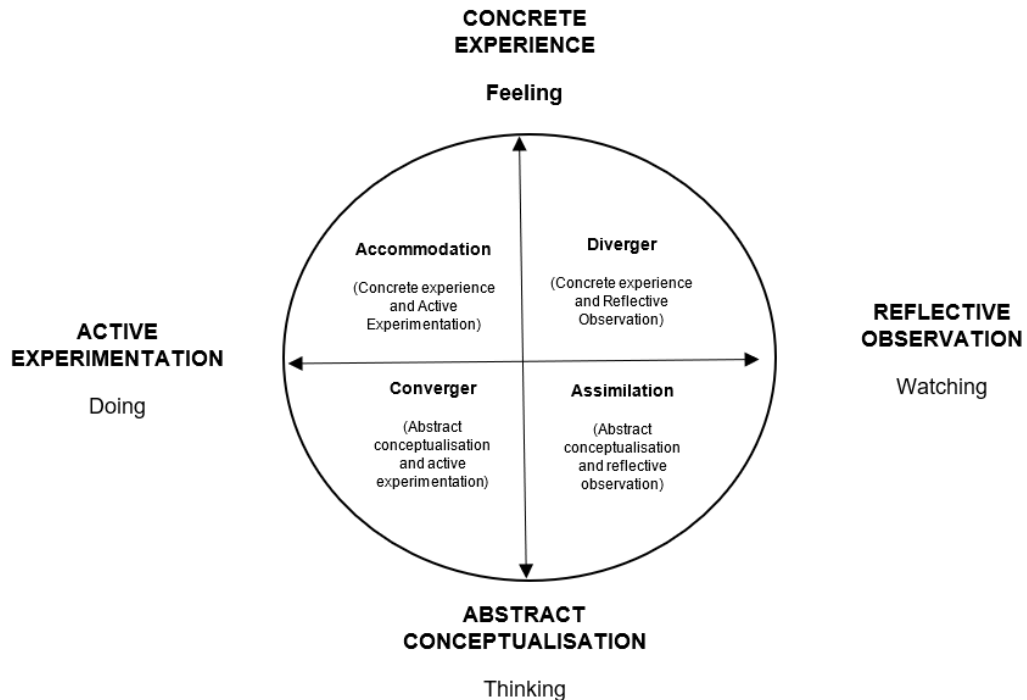
Figure 2.1: Kolb's Learning Cycle (Kolb, 1984; Reynolds et al., 2020)

2.3.2 The reflective cycle

Since learning is enhanced through reflection, a reflective framework is needed for students to meaningfully reflect during the post-simulation debrief.

The Gibbs Reflective Cycle is a reflection model that has recently been used by paramedics and paramedic students (Hilliard et al., 2017) to learn from past experiences within the field and to analyse how to improve future performances. The Gibbs Reflective Cycle is a six-stage cyclic model (Figure 2.2) that added structure to learning from experience (Gibbs, 1988). This easy-to-follow reflective cycle includes a description of the experience, feelings and thoughts experienced during the learning experience, an evaluation of the experience (good and bad), an analysis of the situation, a conclusion about what was learnt from the experience and what could be done differently, and an action plan for how to deal with a similar experience in the future (Gibbs, 1988; Li et al., 2020; Wain, 2017).

The Gibbs reflective cycle could be used as a framework for reflection during the post-simulation debriefing. The Gibbs reflective cycle would allow students to evaluate their strengths and weaknesses, make sense of what unfolded during the simulation, develop understanding informed by theory, and identify action areas for growth.
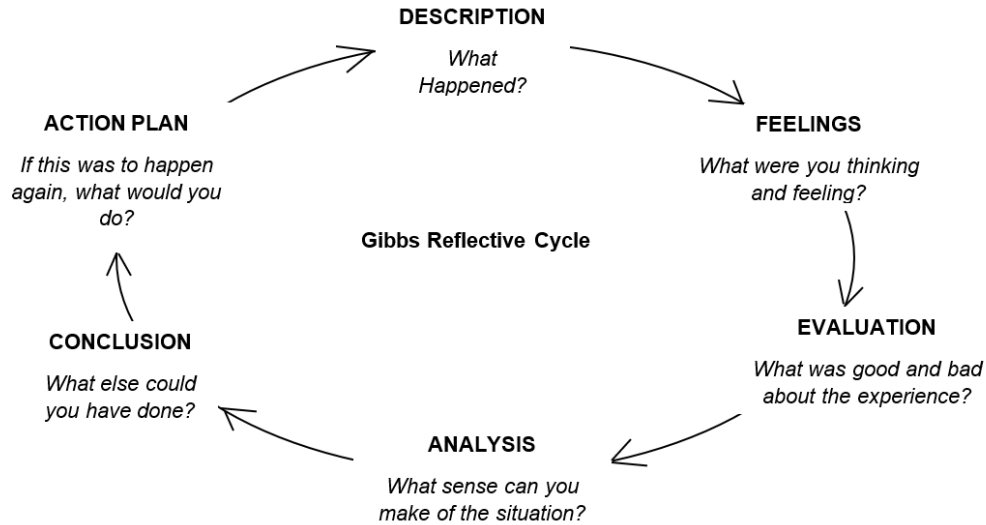
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DESCRIPTION
*What
Happened?*

ACTION PLAN
*If this was to happen
again, what would you
do?*

FEELINGS
*What were you thinking
and feeling?*

Gibbs Reflective Cycle

CONCLUSION
*What else could
you have done?*

EVALUATION
*What was good and bad
about the experience?*

ANALYSIS
*What sense can you
make of the situation?*

Figure 2.2: The Gibbs Reflective Cycle (Gibbs, 1988)

2.3.3 Understanding how adults would learn from the debriefing

Adults learn in many ways with no individual theory entirely encapsulating how undergraduate health professions students engage in learning (Taylor & Hamdy, 2013). As clinical facilitators, we need to acknowledge that, based on Kolb's Learning Cycle, students have different learning styles – they learn differently from each other. For us clinical facilitators it may be difficult to foster learning for all students present in the debrief session.

Understanding the process of how students might learn during the simulation debrief would help the debriefer facilitate a meaningful learning experience for all students present for the post-simulation debrief session.

2.3.3.1 Taylor & Hamdy's proposed model of learning

Taylor and Hamdy (2013) proposed a learning model outlining five phases of learning. The phases in this model can be used to understand the learning process during simulation.

During the dissonance phase, the debriefer outlines the students' learning objectives (Rudolph et al., 2014). During the simulation, the debriefer creates a scenario, for example, an elderly patient presenting with cardiac-related chest pains. The student must assess and treat the patient. By creating the scenario, the debriefer gives context to the students' learning (Taylor & Hamdy, 2013). Debriefers have a responsibility to the student: to motivate them, identify their learning needs, and ensure that the learning experience is aligned to the learning objectives (Palaganas et al., 2016). The student's responsibility is to discover knowledge gaps and uncertainties (Taylor

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& Hamdy, 2013). For this phase to be meaningful and to set the tone for learning, the debriefer must invest a great deal of thought into the preparation or pre-briefing of the simulation. This strategic and rigorous planning will require the learning goals to align to the learning activity (Sawyer & Deering, 2013).

During the refinement phase students start to make sense of their learning and reinforce this learning. For students to make sense of their learning, they must build onto their existing knowledge with the knowledge that has been newly acquired. They also have to make the connection between the old knowledge and the newly acquired knowledge. The refinement phase views the way students learn through the lens of constructivist theorists. Constructivist theorists believe that the process of learning happens when newly acquired knowledge is fused with existing knowledge (Vygotsky, 1978; Schön, 1983). Students make sense of the theoretical concepts and further build onto their knowledge through constructive feedback and discussion that takes place between peers and debriefers. Debriefing is the instrument that debriefers use to support students, make sense of, and reinforce learning by building on already acquired knowledge. Discussions between the student and the debriefers aid students to make sense of what is unclear, address their gaps in knowledge and provide coherence and structure hence enriching understanding.

During the organisational phase, debriefers encourage students to critically reflect on an experience. This is the phase of debriefing where the debriefer will evoke critical thinking by encouraging the student to reflect upon their actions. Reflecting on the performance of a simulation during the simulation debriefing is an essential constituent of the experiential cycle (Sawyer & Deering, 2013) as knowledge is created through transformation by reflecting on one's life experiences (Kolb, 1984).

2.3.4   Summary

It is important for clinical facilitators that lead the post-simulation debrief of paramedic students to understand that students learn differently. (Kolb, 1984; Poore et al., 2014; Schertzer & Patti, 2020). According to Kolb (1984), learning through experience occurs iteratively by way of a four phases cycle and addresses four learning styles (Kolb, 1984; Poore et al., 2014; Schertzer & Patti, 2020). Students move around this cycle of learning in different ways creating knowledge through the transformation of an experience. To make sure that all the paramedic students have access to equal learning opportunities, I believe that the debriefing could make the learning experience more powerful for all students when the clinical facilitators understand the phases that

students undergo to learn. Taylor and Hamdy's (2013) proposed model encompasses the distinct aspects of the many adult learning theories. Therefore, this model is a useful aid to clinical facilitators to foster learning that is profound to all the paramedic students present at the debrief session.

2.4 Guiding the process of the simulation debrief

Having reviewed some of the key learning theories that could inform the simulation learning event (including debriefing), it is necessary to review the process of the simulation debrief itself.

2.4.1 The pre-brief

Novice and inexperienced clinical facilitators often assume that debriefing occurs anytime during the simulation, either in the middle, or the end of the simulation, and forget to pre-brief the students (Palaganas et al., 2016). It is during the pre-brief that the debriefer lays down the rules for the debriefing, describes the learning outcomes to students, informs students of the manikin's limitations, and explores student expectations (Cheng et al., 2017; Krogh et al., 2016). Importantly, the pre-briefing creates psychological safety (Rudolph et al., 2014) where mutual respect and support amongst students should be fostered in order to create a safe space for the students (Krogh et al., 2016). During the debriefing session, many students face psychological challenges. Students' lack of focus during the simulation debrief could have a negative influence on learning (Hustad et al., 2019; Rae & MacQuarrie, 2017).

2.4.2 The debrief

Thus far, the argument is that debriefing is an effective learning opportunity when adequate time is allowed for students to take a step back and process their actions (Sawyer & Deering, 2013), reflect, and discuss viable solutions. Debriefing, therefore, facilitates understanding, demands competency, and improves professionalism (Tosterud et al., 2014). During the event of debriefing, students will be revealing their thoughts and pinpointing areas of weakness and knowledge gaps. The debriefing allows for the student to purposefully discuss their actions or experiences (Sawyer & Deering, 2013) within a safe space (Krogh et al., 2016). During the simulation debrief, some students can feel vulnerable as they will reflect on their experience (Fanning & Gaba, 2007) that could have been traumatic, stressful, or uncomfortable (Reierson et al., 2017). Creating boundaries that prevent malice, hurt or defamation promotes confidentiality. Constructive feedback is crucial for stimulating learning during debriefing (Palaganas et al., 2016).

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The size of the group debriefed also affects learning. Many students are uncomfortable with self-reflection and find it difficult to reveal their innermost feelings in large groups of people (Glatts et al., 2021). Some are reluctant to receive criticism (Omer, 2018) and some are just resistant to change (Deason et al., 2013). The findings reported by Glatts et al. (2021) highlighted that a safe learning space is important for students to engage in critical dialogue with others. The nursing students highlighted that they had trouble expressing their feelings when the debriefing groups were large (Glatts et al., 2021). The debrief improved students' confidence and helped them to reflect on their actions taken during the simulation. The students also highlighted that the discussions during the debriefing shaped self-reflection (Glatts et al., 2021).

It is of utmost importance to assign adequate time for a debrief (Sawyer & Deering, 2013). Poor time management or inadequate time allocation could result in key learning aspects being inadequately discussed, rushed, or omitted (Sawyer & Deering, 2013). Poor time allocation and lengthy simulations may leave debriefers with limited time to debrief their students (Sawyer et al., 2016). Also, the debriefer not allowing sufficient time for adequate debriefing would limit the learning opportunity (Omer, 2018). Rae and MacQuarrie (2017) critically reflected on a case of project-based teaching in paramedicine. The study highlighted that students perceived their debriefing as ineffective if the debrief session was too short in duration, when the feedback was unproductive, and when exposed to too many debriefing sessions (Rae & MacQuarrie, 2017). There is, however, uncertainty and even conflicting ideas from the literature as to the proper duration of a debriefing session (Levett-Jones & Lapkin, 2012). Pivec and Renee (2011) initially argued that an average of 31 minutes to debrief was not adequate to allow for an in-depth analysis of a learning experience, but later amended this suggesting that the session should last between 20 to 30 minutes or at least two or three times the length of the simulation (Pivec & Renee, 2011). More recently, Schertzer and Patti (2020) have advocated that a debrief session should equal the duration of the simulation and recommended that a 10-minute session should be adequate to debrief a 10-minute simulation as an example of their suggestion. The are many inconsistencies to what these authors propose to be adequate for a beneficial debriefing. More research should be conducted to explore what the ideal duration is for debriefing paramedic students so that their learning is productive.

The process of debriefing involves three stages: the reaction phase, the understanding phase, and the phase of summarising. Figure 2.3 is a diagrammatic representation of how I make sense of the three main stages that occur during the process of simulation debriefing (Gardner, 2013; Palaganas et al., 2016; Secheresse & Nonglaton, 2019).
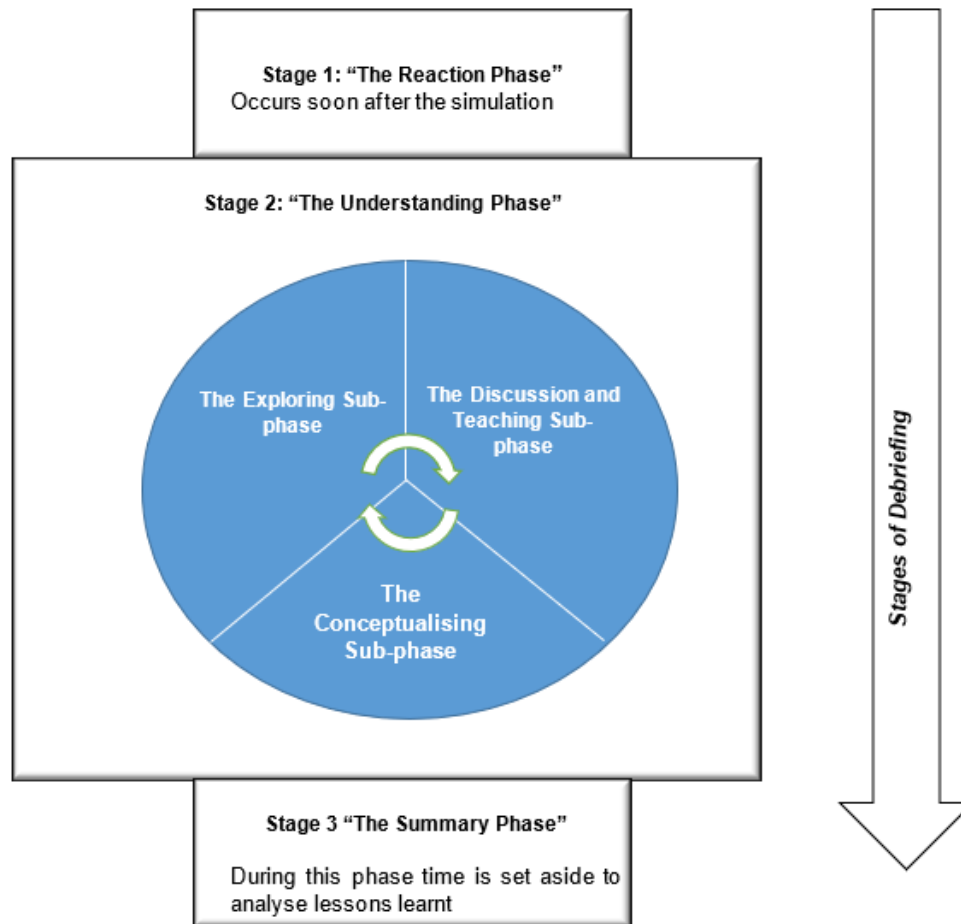
Figure 2.3: The three stages of debriefing

The first stage of debriefing, the reaction phase, lasts anything between two to five minutes (Palaganas et al., 2016). During the reaction phase, the debriefer will ask the student how they felt about the simulation. The debriefer provokes reactions from the students, intended to trigger an emotion. The students express their feelings about what happened. All emotions revealed by the students should be acknowledged by the debriefer (Palaganas et al., 2016). By acknowledging the emotions of students, debriefers encourage students to acquire knowledge and engage with the learning as well as assist them to see the positive in the learning experience, encourage teamwork and foster their confidence to share their beliefs, thoughts, and attitudes in the discussion (Mendzheritskaya & Hansen, 2019).

In addition to acknowledging the emotions revealed by the students, the debriefer should pay attention to the participants' body language. The debriefer should be attentive to all the different responses, such as verbal and non-verbal clues, and then explore what they mean. The debriefer

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must also address the emotions. Time should be allocated for the students to acknowledge their emotions and process their thoughts before moving from individual thoughts to a discussion (Palaganas et al., 2016). This will allow students to be drawn into the debriefing and allow for a meaningful learning experience.

Some students partake in the debrief whilst some may be silent (Deason et al., 2013; Palaganas et al., 2016). There are many reasons why a student could be silent. Silence could stem from students processing thoughts, analysing mental frames or formulating a response to the inquiry posed by the debriefer (Sawyer et al., 2016). The debriefer should lead the discussion, embrace silence, and use the silence as a prompt (Sawyer et al., 2016). Students that are overly silent and do not partake in discussions should be encouraged to partake in the discussions so that everyone engages in the learning.

The second stage of the debriefing is the understanding phase where the debriefer inquires and analyses the actions undertaken by the students during the simulation. This stage of the debriefing process aligns with the reflective observation stage of Kolb's learning cycle. Here students make sense of their learning experience through the feedback provided by the debriefer and their reflection of the event. For a structured or more profound reflection, students could follow Gibbs's reflection cycle.

Also, embedded within the understanding phase are three sub-phases that intensify understanding. These are the exploring sub-phase, discussion and teaching sub-phase, and conceptualising sub-phase. The process of exploration begins with the debriefer affirming his/her observation, followed by a clear outline of their viewpoint, and in turn followed by the students' viewpoints (Palaganas et al., 2016). Through investigation, the debriefer explores assumptions, feelings, goals, knowledge base, and situational awareness that could have influenced the students' actions.

During the discussion and teaching sub-phase, the debriefer uses the technique of advocacy inquiry to aid a two-way conversation with the student (Gardner, 2013). Advocacy inquiry ensures transparent conversation between the debriefer and student (Sawyer et al., 2016). Through transparent conversation, the debriefer makes the physiological space safer. The intention is for students to feel safe to share their feelings and thoughts with their peers and the debriefer as well as to explain their actions. Gardner (2013:169) defines advocacy as "stating one's views about how one feels or expressing one's judgment or promoting a course of action." Through inquiry, the debriefer can then better make sense of the actions undertaken by the student. The debriefer

can then address areas of student learning that need attention and learning goals can be discussed (Gardner, 2013). Allowing peers to partake in the debrief and encouraging peer feedback will enable learning during the simulation debrief (Doherty-Restrepo et al., 2018). Peer participation also creates trust amongst students, strengthens relationships, and encourages comradeship between the students. Also, peer learning creates this circle of future practitioners who will feel comfortable to consult and seek advice from each other with regards to patient care (Doherty-Restrepo et al., 2018; Schreiber et al., 2020). Sub-phase three concludes when students conceptualise the areas discussed with the debriefer and relate this to their practice.

The summary phase concludes the debriefing. The debriefer informs the students that the session is ending. During this phase, students inform the debriefer about what was meaningful for them and express their take-home message (Eppich & Cheng, 2015). Gardner (2013) recommends that the participant promptly summarises and discloses what transpired during the simulation. Here the students summarise their key learning points, review their learning goals or find new learning goals.

I have created table 2.1 to demonstrate my understanding of how Kolb's learning cycle intertwines with the process of debriefing.

Table 2.1: Kolb's learning cycle intertwining with the process of debriefing

Kolb's Learning Cycle	Simulation Debrief
Concrete Experience (Doing or having an experience)	The learning experience of students is met through simulation. For a concrete learning experience, a pre-brief should take place. During the pre-brief debriefing rules, learning outcomes, and manikin limitations are made known to the student by the debriefer. The debriefer will also explore students' expectations.
Reflective Observation (reviewing or reflecting on an experience)	This stage occurs over the first two stages of the debrief process. The debriefer asks the students how they felt about the simulation and provokes reactions intended to trigger an emotion. The participants acknowledge and express their feelings about what happened. Through the reflection, students critically appraise their performance during the simulation, making sense of the experience. The feedback

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	provided by the debriefer is the trigger to the students making sense of their learning experience.
Abstract Conceptualisation (Concluding or learning from an experience)	Stage 3 or the summary phase is the stage where students conclude what was learnt during the experience. Along with the feedback received during the debriefing, and self-reflection, students analyse what was learnt to self-improve future practice and supplement knowledge. Students identify knowledge gaps and engage in active learning by way of self-directed learning.
Active Experimentation (Planning or trying out what was learned)	This does not lie within the process of debriefing, but for the next simulation or learning experience, students try out what was learnt during the experience and earlier debriefings in future practice. Students experiment with improved approaches in their future experiences. This, in turn, will spark new reflections, methods, attitudes, and experiences.

2.5 The debriefer and their role in the simulation debrief

To ensure that students achieve the best possible learning outcomes, the International Nursing Association for Clinical Simulation and Learning (INACSL) recommends that the debriefing be conducted in a safe space conducive to learning and facilitated by a competent individual who can foster trust, stimulate self-analysis, provide constructive feedback, and encourage reflection (INACSL Standards Committee, 2016).

Ideally, a debriefer should have the skill set necessary to enhance a debrief session and to make the debrief worthwhile. The skillset includes multitasking and the ability to acquaint themselves with the learning needs of the students. The debriefer should also be skilled in effective communication. The debriefer guides the discussion, encourages student engagement whilst ensuring that the communication is student-centred (Ross, 2020). The debriefer should never be distracted during the debrief but focus their undivided attention on the students (Ross, 2020).

For skilful communication to happen, the debriefer should ask open-ended questions or use probing questions (Eppich & Cheng, 2015) when conducting the inquiry or to augment discussions (Tutticci et al., 2018). This form of questioning will not just prompt yes or no answers but will

compel students to provide a detailed account of events and allow for the debriefer to comprehensively explore the students' thoughts (Sawyer et al., 2016). Also, the debriefer posing open-ended questions to the students encourages students to reflect deeper and perform self-assessment (Sawyer et al., 2016). Furthermore, meaningful discussions are promoted when the debriefer attentively listens to the students. A sense of interest is felt by the student when the debriefer listens to the students' replies or viewpoints during the discussions.

The students' learning experiences during a debrief could be intensified by co-led debriefs (Cheng et al., 2015). A co-led debrief occurs when the debrief is facilitated by two or more debriefers debriefs (Cheng et al., 2015). Cheng et al. (2017) argued that co-led debriefing reduces any confusion or misunderstandings that may arise during the debriefing, allows for a more diverse viewpoint, and inspires teamwork and communication debriefs (Cheng et al., 2015). An earlier article published by Cheng et al. (2015) also highlighted other advantages of a co-led debrief. Having two or more debriefers facilitate a session meant a larger pool of knowledge to collectively manage students' expectations and to resolve challenging situations. Krogh et al. (2016) also argued the value of co-debriefing but added that the practice was not often exercised because of logistic and cost limitations. Other benefits of co-debriefing, supported by Krogh et al. (2016), included debriefers giving extra attention to individual students, and mixing content experts lacking debriefing skills with seasoned debriefers (Krogh et al., 2016).

However, some challenges could arise during a co-led debrief. Debriefers lacking insight into students' learning outcomes or debriefers leading a discussion towards an area of their own interest are some of the challenges of a co-led debrief (Cheng et al., 2015). Other challenges include debriefers interrupting each other during discussions with students, a debriefer dominating a discussion or disagreements between debriefers during discussions (Cheng et al., 2015).

Learning could be impeded when the debriefing is poorly conducted, rushed, or omitted when students are demoralised. Learning could also be impeded when students' inappropriate or incorrect actions were either unnoticed or not corrected (Rudolph et al., 2016). Even though debriefing sessions encourage learning, the inexperience of the debriefer and/or their limited skills to encourage reflection from the quiet or less responsive student/s could inadvertently hinder learning. An inexperienced debriefer might also be unable to assist students to overcome anxiety in order to reflect on their learning experiences (Frandsen & Lehn-Christiansen, 2020). The lack of engagement from the quiet, disengaged or defensive student, is a barrier to an effective debrief (Grant et al., 2018). These factors hinder the debriefing process.

As previously mentioned, feedback and debriefing are entwined. As is the case for debriefing, effective feedback enriches learning (Ker & Bradley, 2014) but if done incorrectly, it could be negatively received and rejected by students (Ramani et al., 2019). The confidence of students decreases if they perceive the feedback received during the debriefing to be negative and demoralising (Ramani et al., 2019). Also, the lack of confidence to deal with these situations, a lack of knowledge, and an inappropriate debriefing style on the part of the debriefer (Krogh et al., 2016) could render an unpleasant learning experience resulting in students not buying into the concept of debriefing as a teaching and learning tool.

2.6 Conclusion

The literature revealed that health professionals have reported that simulation debriefing is effective in enhancing learning (Bender & Walker, 2013; Bowe et al., 2017; Doherty-Restrepo et al., 2018; Garden et al., 2015), especially through reflection (Burns, 2015; Omer, 2018). Debriefing is an effective and valuable teaching tool that is essential to facilitate understanding, promote competency and professionalism amongst health professionals.

Debriefing of a learning experience as part of a simulation is well documented in the teaching of health professionals and is shown to be imperative to improving learning. Yet, there appears to have been only a few studies, particularly in the South African context, that have explored the paramedic student's experience of the simulation debrief. There is a need to explore how paramedic students experience their simulation debriefing opportunities, what they felt worked for them and what did not. This would be of great importance to tailor the practice of debriefing to suit their context so that their learning is more profound.

CHAPTER 3: RESEARCH METHODOLOGY

3.1 Introduction

This qualitative study aimed to answer the question: "How do final year Bachelor of Emergency Care (BEMC) students at the Cape Peninsula University of Technology (CPUT) experience simulation debriefing opportunities?" The aim was to better understand how paramedic students experience simulation debriefing and to explore the dimensions of debriefing that paramedic students find valuable.

Figure 3.1 encapsulates my research journey up to this point. The first block highlights where I, as a clinical facilitator, realised that I needed to understand what debriefing entailed and how to appropriately facilitate a debrief session so that my students' learning during debriefing is enriched. This instigated the second phase of my journey, which involved me reviewing the literature to understand what debriefing is and what it entails. The gaps that I found in the literature directed me to formulate a research question that this study aims to answer, bringing me to the last block with the red writing. This is where we are currently in the research journey. By unpacking the last block, I have provided an overview of this chapter and outlined how I would go about answering the research question. Here, I describe the design of this research study and how participants were recruited. I also outline the method used to collect and analyse the data as well as the steps taken to ensure the rigour and trustworthiness of this study.
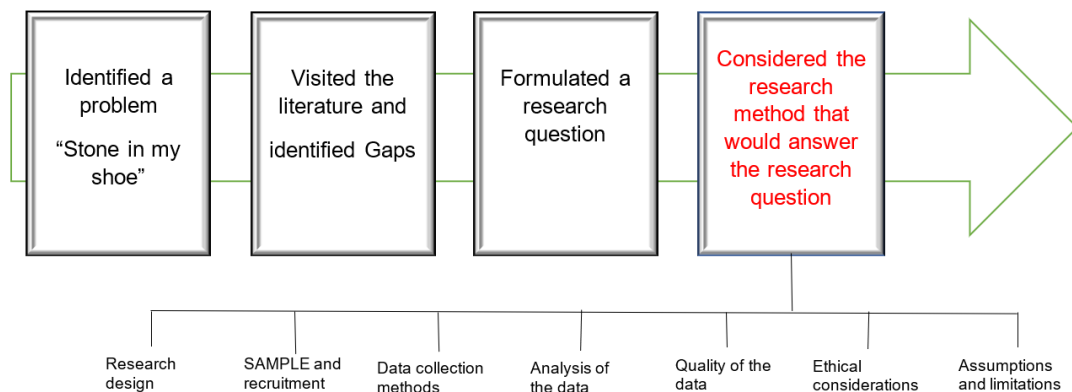

Figure 3.1: Schematic of my research journey to this point (Chapter 3)

3.2 Research design

For this small-scale study, I opted for an exploratory approach (Denscombe, 2014) that was informed by a social constructivist paradigm. I explored how the paramedic students experienced their simulation debriefing. This study was conducted following a naturalistic qualitative method. Qualitative research is an approach that is well-aligned with social constructivism (Creswell & Creswell, 2018). By using a qualitative research approach, I had the opportunity to explore the unique simulation debriefing experiences of every participant (McGrath et al., 2019).

The process of data generation gave participants the opportunity to voice their opinions, share their beliefs and experiences as well as allowed me to probe and better understand what these participants were saying (DeJonckheere & Vaughn, 2019). This allowed me to add meaning to the data collected and to better understand the phenomena being revealed.

When exploring the participants' experiences of the simulation debriefing, multiple realities of debriefing and feedback were created. For this study, no single theory was explored, so both the participants and I constructed our shared understandings inductively. Also, by exploring the students' experiences with simulation debriefing, the dimensions of the debriefing which they found valuable, and the usefulness of the simulation debrief to enhance learning, were uncovered. These experiences were analysed to inductively generate patterns of meaning (Creswell & Creswell, 2018) grounded by the experience of the participants (Tavakol & Sandars, 2014).

3.3 Role of the researcher

At the time of the study, I was employed by the Western Cape Government College of Emergency Care (WCG CEC) where I performed the dual role as Emergency Medical Care (EMC) lecturer of theory and clinical facilitator. I had active involvement in teaching and assessing the Diploma in Emergency Medical Care (DEMC) programme and, therefore, chose to engage with the final year BEMC paramedic students of CPUT. I wanted to explore how they experienced their simulation debriefings. I was not involved in the training or affiliated with these final-year BEMC paramedic students of CPUT.

For this qualitative study, I recruited final year BEMC paramedic students and interviewed them intending to collect data that explored the simulation debrief experience of these students. I ensured that all participants were treated fairly and that I was open and transparent with them. At

the beginning of the interview, participants were assured that they were in a safe space where they could speak freely, where their responses would not negatively influence their academic results or academic progression. The intention was to gain their trust and build rapport with them from as early as the recruitment stage (DeJonckheere & Vaughn, 2019).

3.4 Data-generation activities

3.4.1 The study population

All the fourth year BEMC paramedic students of the CPUT Department of Emergency Medical Services (DEMS), registered for the 2019 academic year received an invitation to partake in this study. The fourth-year student group was the preferred study population. The fourth year BEMC students would have experienced at least four years of debriefing by more than one debriefer.

3.4.2 The process of recruitment

Only once the Health Research Ethics Committee from Stellenbosch University (S20/03/079) and CPUT (CPUT/HW-REC 2020/H25) had approved the study, did the process of recruitment begin.

I sent out an email (Addendum A), requesting a delivery and read receipt, to the 36 fourth year BEMC paramedic students, inviting them to take part in the research study. Attached to this invitation was the Participant Information Leaflet and Consent Form (Addendum B). The email, in detail, explained the aims and goal of the study as well as the proposed method I would use when collecting data. The invitation and consent forms highlighted that participation was voluntary. I received many unsuccessful delivery reports and attempted to reach those potential participants through their class WhatsApp group. Students excluded themselves from the research study by not responding to the invites. For this study, I did not make any special consideration for biographical or related factors.

This was a small-scale study, so I considered convenience sampling from the outset and intended to interview those who made themselves available. The choice for convenience sampling was further motivated by the unprecedented lockdown regulations that significantly curtailed access to the students. I had hoped that at least ten students would positively respond to the invitation. However, only eight students positively responded.

The eight students who positively responded to the invitation, signed and returned the consent form. I guaranteed the participants that their information or responses to questions before, during, and after the study were confidential and that their identity would remain anonymous. I also reassured the participants that no harm will be bestowed upon them and that they could withdraw from the study at any time (Ramani & Mann, 2015). Participants partaking in the research study did not endure any mental, social or financial harm.

3.4.3 Data collection methods

I scheduled interviews with the eight participants at their convenience. The scheduled interviews did not clash with their academic timetable nor interfere with their learning. At the time, due to the COVID-19 lockdown regulations and the adherence to the social distancing guidelines, interviews between myself and the eight participants were conducted on an online platform using Microsoft Teams (MS Teams). MS Teams is a computer software programme that supports video conferencing. Video conferencing was an alternative to face-to-face interviews that allowed me to pose questions to the participants and for the participant to respond to the questions in real-time (Nehls et al., 2015). Video conferencing overcame geographical barriers and saved both the participants and me on travel costs. The platform also encouraged a safe and comfortable setting that allowed participants to openly communicate with the interviewer (Nehls et al., 2015). Participants could withdraw from the interview process at any time during the interview by just clicking the disconnect button.

For this qualitative research, I made use of individual semi-structured interviews to collect data (Denscombe, 2014; Tavakol & Sandars, 2014). Individual interviews conducted using video conferencing allowed me to explore the lived experiences of the participants post-simulation debriefing (Creswell & Creswell, 2018; Denscombe, 2014; Tavakol & Sandars, 2014). Also, it could be argued that the participants would feel more comfortable sharing their personal experiences which they would not openly share if in a group. For these reasons, individual interviews were the favoured method for data collection.

The semi-structured interview allowed for flexibility (DeJonckheere & Vaughn, 2019; Denscombe, 2014) enabling me the freedom to probe (DeJonckheere & Vaughn, 2019), rephrase, explain or repeat questions when attempting to acquire in-depth answers and a rich source of information (Creswell & Creswell, 2018).

The interview schedule, which guided the interview, included seven predetermined questions. These questions are attached as an addendum (Addendum C). The research question of this

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study, along with the literature discussed in chapter 2, and my experience of debriefing, informed the construction of these seven questions. To ensure that all participants understood the concept of simulation debriefing, including their roles and responsibilities during their simulation debrief, I read out a basic definition of what a simulation debrief was and what it entailed. This definition was read out to all of the participants once they had concluded their answer to the first question. This was done in attempts to ensure that the participants had a clear understanding of what the simulation debriefing was. Any misconceptions for the simulation debrief was resolved at that point. I conducted a pre-interview (dry run) with three of the DEMC students. From this pre-interview, I could gauge whether the questions posed to them would elicit answers that could assist in answering this study's research question. The questions were open-ended and encouraged participants to share their feelings and experiences (Holloway & Wheeler, 2010).

3.4.4 Data management

MS Teams has a built-in audio recorder that I used to capture the audio generated during the meeting. A second recorder was used as a backup device should the primary recorder fail to record. To protect participants' identities and to ensure their confidentiality and anonymity, I referred to them as participant 1, participant 2, etc. (Creswell & Creswell, 2018; Denscombe, 2014).

All notes and audio recordings were saved on a password-protected computer (Holloway & Wheeler, 2010). Just my supervisor, co-supervisor, and I had access to the data. Furthermore, documentation and consent forms were safeguarded in a strongbox. The personal computer used for this study was set to lockout at five minutes of inactive use. Documents were password-protected, compressed, and encrypted when transferred.

3.5 Analysis of data

Once the raw data collection was concluded, Braun and Clarkes' six steps to thematic analysis to analyse the data (Braun & Clarke, 2006) were followed. This approach was selected because the rigour that characterises Braun and Clarkes' six steps to thematic analysis, has the potential to yield trustworthy and insightful findings from the study (Nowell et al., 2017).

I transcribed all the interviews on Microsoft Word. By transcribing the data, myself, it allowed me to engage with the data much earlier. I began to familiarise myself with the data (Mabuza et al., 2014) and to reflect on what participants said during the interview. The first round of coding

involved me going through the data with a 'soft eye.' I then immersed myself in the data by continually reading the transcribed data, line by line, grappling with it in the attempt of making sense of what participants said during the interview. By using the 'add comments' feature on Microsoft Word, I highlighted segments of data and assigned codes to those segments. The generation of the initial codes, either words or phrases, was generated from the data set (Braun & Clarke, 2006). A code is defined as a "word or short phrase that symbolically assigns a summative, salient, essence-capturing, and/or evocative attribute for a portion of language-based or visual data" (Saldaña, 2015:3). The codes were either actual words spoken by the participants or, in some instances, words used to describe what participants had said. I exported the segments of data and codes to a Microsoft Excel Spreadsheet. The Excel spreadsheet allowed me to group similar codes. The spreadsheet also aided to reduce codes that were overlapping.

During the second step of data analysis, I revisited the codes, refining the codes and ensuring that, as indicated above, the codes were not similar or overlapping. Similar and overlapping codes were merged. From the new codes, I organised data into abstract units of information, categories, and generated themes through the inductive inquiry (Braun & Clarke, 2006). This concluded the third step of the thematic analysis process.
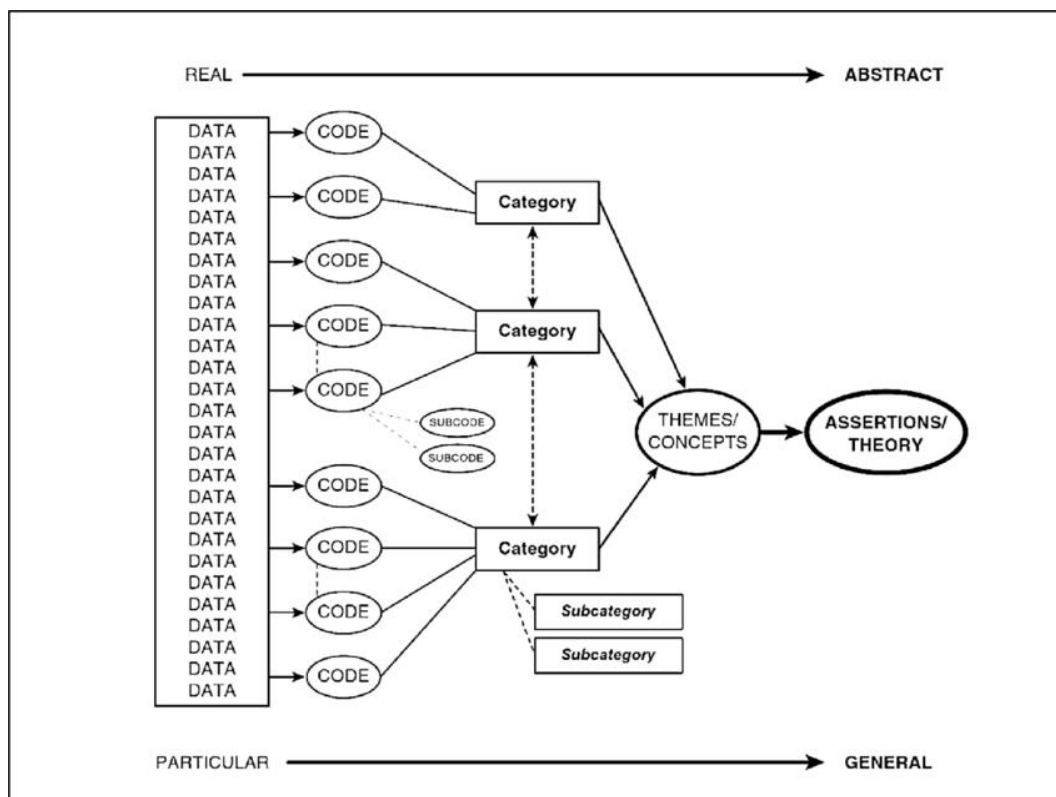
Figure 3.2: Saldaña's (2016:14) codes-to-theory model for qualitative inquiry

I then reviewed, defined, and named the themes (Braun & Clarke, 2006). This ongoing analysis aided in the refining of each theme (Braun & Clarke, 2006). Finally, I interpreted the findings of this qualitative study. The interpretation of the thematic analysis aided in the completion of a concise, coherent, and logical write-up (Nowell et al., 2017). This is provided in Chapter 4.

3.6 Quality of the data: Trustworthiness and rigour

The trustworthiness of the research needs to be demonstrated in order to ensure confidence in the findings. To ensure that the research is trustworthy, I ensured credibility, transferability, dependability, and confirmability.

To ensure credibility, so that the results from the study were accurately communicated to other clinical facilitators and health professionals, I engaged with research data for lengthy periods aiming to familiarise myself with how the students were debriefed during simulations (Korstjens & Moser, 2018; Mabuza et al., 2014). The iterative process of data analysis and the process of evolving and refining codes helped me to examine the characteristics of the data (Korstjens & Moser, 2018). The codes were developed using a coding framework (Nowell et al., 2017) and an audit trail of how codes were generated was kept (Nowell et al., 2017). I scheduled meetings to debrief the research findings with my supervisor and co-supervisor (Mabuza et al., 2014). Finally, the literature reviewed and referenced throughout the study was sourced from credible databases and reviewed.

Korstjens and Moser (2018) define transferability as the extent to which the results of qualitative research would be transferred to other contexts or settings. To provide detailed information for readers to understand the context of the research, I made use of 'thick descriptions' (Creswell & Creswell, 2018; Korstjens & Moser, 2018; Mabuza et al., 2014; Ramani & Mann, 2015). This would enable others to ascertain whether the findings are transferable to their settings (Korstjens & Moser, 2018).

I also kept an audit trail (Korstjens & Moser, 2018; Mabuza et al., 2014; Ramani et al., 2019) of the coding process. By clearly outlining the design of this study, a step-by-step summary of how data was collected and analysed should ensure that if other health professions educators conducted the same study in their setting, they might generate similar findings. Also, other health professionals might find the results of this study useful to them (Ramani et al., 2019).

3.7 Ethical considerations

The research protocol, outlining this study, was submitted to both the Human Research Ethics Committee of Stellenbosch University and CPUT. The Human Research Ethics Committee of both universities approved the study. Attached as addenda are the approval letters from both universities (Addendum C-E). S20/03/079 was the reference provided by the Human Research Ethics Committee of Stellenbosch University and CPUT/HW-REC 2020/H25 was the reference provided by the Human Research Ethics Committee of CPUT.

All the other ethical considerations adhered to throughout the study were explained in the data-generating activities and the role of the researcher sections above.

CHAPTER 4: FINDINGS FROM THE STUDY

4.1 Introduction

This chapter reports the findings from the analysis of the semi-structured interviews that were conducted with the final year paramedic students registered for the Bachelor of Emergency Medical Care (BEMC) programme at the Cape Peninsula University of Technology Department of Emergency Medical Services (CPUT DEMS). The findings reported in this chapter intend to answer the research question that strives to better understand how paramedic students experienced simulation debriefing opportunities and to explore the dimensions of debriefing that paramedic students find valuable.

During the interviews, the interviewer defined what a simulation debriefing was. This was to ensure that all participants had the same understanding of what simulation debriefing was and the core components that comprise debriefing. From here onwards I will refer to students and participants interchangeably.

4.2 Themes and sub-themes

THEME 1: The debrief as an opportunity for learning	THEME 2: Enablers for learning during the debrief	THEME 3: Barriers restricting learning during the debrief	THEME 4: Approaches to learning during simulation debriefing
Sub-theme 1: The value of debriefing **Sub-theme 2:** Learning through collaboration **Sub-theme 3:** Learning by way of self-reflection	**Sub-theme 1:** Creating safe learning spaces **Sub-theme 2:** Encouraging effective communication	**Sub-theme 1:** Distractions **Sub-theme 2:** Emotions experienced by students during the debrief **Sub-theme 3:** Poor debriefing practice **Sub-theme 4:** The attitude of the debriefer	**Sub-theme 1:** Learning approach adopted by students during simulation debriefs **Sub-theme 2:** Consistency in the debriefing structure **Sub-theme 3:** The timing of the debrief **Sub-theme 4:** Debriefing following a practical assessment

Figure 4.1: Themes and sub-themes that emerged from the study

Employing a thematic approach, the researcher's interpretation of the mutual concepts expressed by the eight participants, shaped the themes and sub-themes. Four themes were identified: debrief as an opportunity for learning, enablers for learning during the debrief, barriers restricting learning during the debrief, and the approaches to learning during simulation debriefings (Figure 4.1). I will use either short or long quotations to support any claims and ideas in order to add rigour to this study (Eldh et al., 2020).

4.2.1 The debrief as an opportunity for learning

There was consensus among the respondents that debriefing created an opportunity for them to learn and, therefore, has value as a teaching tool. Debriefing encourages learning through students collaboration with peers and the debriefer as well as through students' self-reflection on their learning experiences.

4.2.1.1 Sub-theme 1: The value of debriefing

Debriefing a learning experience created through simulation builds on the paramedic students' knowledge by allowing them to discuss their performance, but also identifies knowledge gaps and provides direction to their learning. The common view shared amongst all eight of the participants was that they valued the feedback received during a debriefing session. The respondents brought to light the value of the simulation debrief by revealing that it allowed them to talk about their performance during the simulation, whether good or bad, and how they could improve. From the responses, it was evident that debriefing as a teaching tool was valued by the participants because their future practice could be improved by way of feedback. The respondents believed that the debriefing prepared them for treating "real patients" and enhanced their confidence.

> *[A] debrief is very insightful and I think that adds so much value. (Participant 5)*

Participants described how, during the simulation debriefing, debriefers provided them with feedback recommending how they can go about correcting their techniques or skills that they performed incorrectly or poorly during the simulation. Students were then offered a chance to respond.

> *The usefulness of the debriefing would be to allow me to discuss my management that could not maybe be clear in my actions or in the way I managed the patient so it could*

then give a clear distinction on what the train of thought would be during the simulation, and then you can share that obviously with your debriefer. (Participant 2)

It's very, very helpful when you can discuss these things with the lecturer, and they can give you feedback. (Participant 3)

I think from the simulation debriefing session I find it valuable when you can discuss your treatments. (Participant 3)

Another aspect of the debrief that participants identified as valuable, were its potential to highlight gaps in the students' knowledge. For example, the discussions that take place between the debriefer and student during the debrief of a learning experience may highlight gaps in students' knowledge. The practical exposure adds context to the learning experience. The discussions between student and debriefer, the feedback provided by the debriefer to a student, and the student's analysis of the learning experience during their reflection all combine to address knowledge gaps and solidify understanding.

[D]ebrief gives me that knowledge that fills that gap of understanding, where I can better connect theory when I do it practically. (Participant 5)

It bridges the gap and makes you understand it by actually putting it into practice or giving you the experience. It's like a way of practically doing something, and then it's like you visualise your theory. (Participant 6)

I feel my practical is much stronger than my theory, and I feel like the practical and debrief fills the gap that I may have missed. (Participant 7)

[I]t solidifies whatever theory content that I have learnt in this situation. (Participant 7)

As mentioned above, and to reiterate, participants confirmed that the debriefers guided them in a direction that promoted growth, development, and improvement while simultaneously aiding students to better understand concepts through discussions. The feedback was aimed at providing direction, offering positive critique, correcting practices, and improving clinical reasoning.

[B]ut also, just looking at how to correct those mistakes and how to fix them and become a better practitioner. (Participant 3)

[G]et an opportunity to debrief and talk about how you have performed, what have you done good and where you could have improved in your treatment. (Participant 2)

Additionally, participants felt that discussions led by the debriefer and feedback received from the debriefer enriched their clinical reasoning and decision-making abilities and prepared them for when they had to treat 'real' patients.

[O]nce you out there working with real patients and you can reflect on the debriefing and what you have done in a simulated environment versus what is supposed to be done in a real situation. (Participant 2)

So, I think that for me as well, even the clinical placements, I've always benefited a lot from, because sometimes something that I've said, or something that I've done that's been said in the debriefing, I take it with me into my clinical practice, often with regards to a mistake that I've made or a mistake that I've recognised that I need to correct. (Participant 5)

If I get a little flustered on the road or in my clinical shifts then I can just think back to the simulation and debriefing where the learning occurred. (Participant 6)

4.2.1.2 Sub-theme 2: Learning through collaboration

Peer learning is an approach where groups of individuals learn collaboratively within a group, sharing their strengths, and developing their interpersonal skills. As mentioned in chapter 2, peer feedback enables learning during the simulation, creates trust amongst students, strengthens relationships, and promotes comradeship. During debriefing, students typically learn from each other's experiences. The eight participants, however, had mixed opinions about learning from other peers. Some participants felt that they learnt from each other and valued each other's opinions.

It is having other colleagues in the class with you or students with you in the class making everybody understand where you could have improved. (Participant 2)

I think we value each other's input a lot and it's good to get other people's opinions. (Participant 3)

[C]lassmates will bring up, will be more like what I'm thinking, so I find it helpful. (Participant 6)

I could improve myself and I do believe whatever feedback that I get from my peers. (Participant 7)

Others considered that the feedback provided by peers added to their uncertainty.

[P]eer feedback, I mean it just creates more confusion for students during their debriefings. (Participant 8)

Another aspect that was raised related to the nature of the comments provided and the comments' value. They felt that there was no need for students to be embarrassed, threatened or vulnerable because of the feedback provided by their peers. The feedback provided by their peers and their opinions were valued.

It is having other students with you in the class who makes you understand where you could have improved is beneficial instead of making you feel threatened during the debriefing. (Participant 2)

[T]hey give a good comment or either negative comment or bad comment obviously that you can reflect on. (Participant 7)

Collaborative learning was not only between peers but between the student and debriefers as well. Learning was described as having taken place when the debriefer shared their "lived experience" (participant 5) with the student. This lived experience included good and bad experiences they encountered when treating patients in the field. One interviewee specifically found more value when debriefers shared their stories of real-life patient encounters and their lived experiences with the students rather than just pointing them in the direction of literature they should read.

[W]hat I really like when a debrief, when there's some sort of lived experience and not just everything is research-based. (Participant 5)

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Sharing these experiences, either good or bad, helped students to learn.

> *Most of the times when I think of the value from a debrief is when a lecturer gives me the experience on the road and kind of reflex it to what I've done and kind of tells me that you know I'm not deviating from the wrong, but this should be considered. (Participant 5)*

Also, having a co-led debriefing session intensifies learning by having more than one debriefer sharing their experiences or viewpoints and opinions. A common view amongst some participants was that their learning was heightened when there was more than one debriefer facilitating the debriefing session. Participants experienced that a simulation that is co-debriefed was beneficial to them.

> *Sometimes it can work, they feed off each other. (Participant 3)*

This was, however, not shared by all the participants. Two of them felt that when debriefers had a difference in opinion, the discussions were negatively shaped.

> *There could be times where there are two debriefers who are not on board with each other could confuse. (Participant 1)*

> *When you have different lecturers with different opinions affects your discussion. (Participant 7)*

4.2.1.3 Sub-theme 3: Learning by way of self-reflection

Self-reflection is the process where students grow their self-awareness and make meaning out of their learning experiences. They acknowledge their feelings and emotions experienced during the learning experience by reflecting on what they have done well or not so well. Furthermore, they analyse their actions undertaken during the learning experience and seek ways to improve their future practice.

All eight participants appreciated the opportunity to reflect during the debrief session. The debrief also allowed participants to reflect upon their performance during the simulation, intensifying their learning experience.

> *I think the most useful thing I find from the debriefing itself is the chance of self-reflection. (Participant 1)*

This reflection also fostered improvement and growth.

> *[N]o growth will occur unless there is a debrief because I mean, you need to know what went well, what, what went poorly, what are things that can be worked. (Participant 8)*

One participant acknowledged that reflection creates an opportunity for the student to go back and look at what mistakes ensued during their simulation and to rectify the mistakes by way of analysing literature outlining best practises.

> *I believe that reflection allows you to go back and look at what mistakes it is that you have done during your simulation and refer to the, what the literature says should have been done. (Participant 7)*

Another participant added that, through the debrief, students could reflect on how they could improve treatment given to the simulated patient or add finesse to the skills that they may have performed during the simulation.

> *…. get an opportunity to debrief and talk about how you have performed, what have you done good and where you could have improved in your treatment. (Participant 2)*

4.2.2 Enablers for learning during the debrief

A second theme, identified in the data, related to those factors that enable learning during a debrief such as creating safe learning spaces and encouraging effective communication.

4.2.2.1 Sub-theme 1: Creating safe learning spaces

All eight participants revealed that the space reserved for debriefing should be safe. A participant described the debriefing to be daunting.

> *…the debrief, it's a bit daunting. (Participant 1)*

The debriefer should be mindful that the feedback they are providing should be constructive and aimed at improving, refining and honing the performance of skills. As one interviewee reported, the feedback provided by the debriefer should guide the student, be constructive and the criticism should be positive rather than malicious and aimed at punishing or humiliating them.

More about am I being guided properly, am I being helped and am I getting constructive criticism versus punishment, and I think that some lecturers miss the point of debriefing. (Participant 2)

According to participants 6 and 8, the debrief should be aimed at making students feel safe to engage without judgement.

I feel a safe space needs to be created during the debrief. (Participant 6)

[A]ct in such a way as to make it make them feel safe to engage without judgement. (Participant 8)

Participant 8 elaborated by saying that, if a student was going to reflect on their innermost thoughts and feelings, they should do so in a safe space.

[A] safe space that should be created where, if you're going to be reflecting your innermost thoughts and your feelings. (Participant 8)

Participant 2 also felt that students should feel safe in the space in which they are.

I think the students should feel safe in the environment that he is in. (Participant 2)

Participants 5 and 6 wanted the debriefer to create a space that is comfortable for the student to easily identify what they did right and wrong.

My thing wouldn't be just to make the environment comfortable for the student to easily identify rights between wrongs. (Participant 5)

I feel a safe space needs to be constructed where you're not going to be judged for commenting on the mistakes you've just done or like it makes it feel like a place of learning rather than a place where you're going to be judged. (Participant 6)

4.2.2.2 Sub-theme 2: Encouraging effective communication

The key to guide discussion was communication. Participant 6, for example, felt that the clinical educator should possess the skills to encourage effective communication with students and to guide the discussions. This respondent further felt that the debriefer should use probing questions

to provoke the student to either think critically or to explore the student's clinical reasoning. Participant 3 revealed that the debriefer probing them to think about what they could have done better, not only sparked discussion but also encouraged reflection, the importance of which has already been described.

> *Other than that, also, just there's not really prompts, but there's maybe the questions like, do you feel like you could have done something better, made discussions flow and made me reflect on something I did. (Participant 3)*

The debriefer uses probing questions to explore clinical reasoning, to keep the discussion going, and encourages reflection. Participant 5 added that the debriefer will use probing to guide the discussion or learning.

> *[W]hat I've picked up is that lecturers in, especially in a simulation debrief, they think to probe you in a direction just to guide you to be like this is where you should be going. (Participant 5)*

Six of the eight participants felt that the debriefers made proper use of probing questions to either foster discussion or to guide them through the discussion. Participant 7 also mentioned that debriefers attempted probing by asking students how they felt their simulation went.

> *[L]ecturers ask you how you feel your simulation went and what is it you can reflect on. (Participant 7)*

In addition to probing questions, introductory questions can also be useful. For example, participant 3 felt that, during the debriefing session, the debriefer should ease the tension by posing an introductory question. This idea behind an introductory question is to set the tone for the discussion and to alleviate the stress attributed to approaching the debriefing session.

> *[T]hat's often a nice feeling for me where I'm feeling super stressed and there is some question and it's almost like a little ice breaker question. (Participant 3)*

Furthermore, participants highlighted that debriefers could ask leading questions to assist students to make meaning of the learning experience by pulling together various concepts. Also, the leading questions would help students to process what they have reflected upon to ensure a deeper understanding of a concept.

…asking leading questions to try and get the learner to put together the pieces of the puzzle also help the reflection to sink in. (Participant 4)

Participant 6 believed that, for a beneficial debriefing experience, the debriefer should actively listen to what the students are saying during the discussion or reflection.

… if they are more open, and if I feel like they are listening to what I'm saying, then I'll be more inclined to have a better debrief. (Participant 6)

4.2.3 Barriers restricting learning during the debrief

The barriers restricting learning during the debriefing emerged as the third theme. The barriers included distractions, the students' emotional state during the debrief, poor debriefing practice, and the debriefer's attitude.

4.2.3.1 Sub-theme 1: Distractions

Participants described how a range of factors, personal as well as environmental, could serve as distractions during the debrief. For example, the emotional state of the students following a simulation was mentioned as impeding learning or engagement during the debriefing session. Participants reported that anxiety, intimidation, irritation, and sarcastic remarks were elements that distracted students during the debriefing. Other distractions included noises created when packing away the equipment used for the simulation whilst debriefing sessions resumed.

Being distracted by somebody's packing equipment away for the thing in the background. (Participant 3)

Sometimes there were times when I was a bit irritated after the sim, irritated with myself or because I perhaps not, I'm not performing as well as I should. (Participant 4)

These distractions during the debriefing were described as frustrating and this frustration caused them to lose interest during discussions, create a poor debriefing experience as well as a poor learning experience.

[S]o, many of the times when I when I get distracted, or I lose focus in what is being said is because I'm frustrated with myself. (Participant 5)

Another participant added that the packing away of equipment during communication between the student and the debriefer or if someone walked into the room during the discussion was a distraction. However, it did not cause them to lose interest during the debrief.

> *I did not particularly lose interest, but it was more of a distraction. It could be things like during the cross-communication between students and the debriefer and you become distracted by the pickup crew packing away the equipment, or during the debrief someone else will enter the room and speak to the debriefer. (Participant 1)*

Another participant added that they were distracted during their debrief when the debriefer interrupted them whilst in conversation. The result of this distraction led to the participant feeling impeded during their conversation with the debriefer.

> *[L]ecturers not listening or they're interrupting me the whole time, or they just feel closed off, then I'll be less inclined to have a proper debrief. (Participant 6)*

4.2.3.2 Sub-theme 2: Emotions experienced by students during the debriefing

Participants felt threatened and feared critique from the debriefer.

> *The person doing the simulation feel calm and be able to reflect without feeling threatened by the debriefer. (Participant 2)*

When asked what debriefers could do to improve debriefing, a participant suggested that the debriefer should be able to communicate with the students without creating a hostile environment. For example, a participant disclosed that they did not want to feel judged by the mistakes made during the simulation. The debriefer should create a space free from negative criticism so to facilitate learning.

> *…make it feels like you're not going to be judged for commenting on the mistakes you've just done, but rather make it feel like a place of learning rather than a place where you're going to be judged. (Participant 6)*

A common view amongst the participants was that, when they were extremely stressed following a simulation experience, they did not remember their actions undertaken during the simulation. They then went on to say that the debriefing of a student's performance directly after a simulation

allowed them to better remember the mistakes they made during the simulation. Although there was this barrier, students found a way to overcome it through reflection.

> *I think under stress. Following a simulation, you sometimes find yourself not thinking or recalling what you did in the sim. (Participant 2)*

> *[D]epending on each person and how they react in how they manage the stress of the sim, some people can't remember stuff straight or can't remember everything straight after their sim. (Participant 3)*

> *[U]nder stress or pressure, and then you kind of lose track of where you were going. (Participant 4)*

Another emotion that hindered learning from the debriefing was irritation. For example, one interviewee said that learning did not take place when they were irritated. They did not enjoy being told what was done wrong and would become irritated.

> *[T]he educator just carries on explaining what needed to be done and then I didn't enjoy being told what I was doing wrong and that just made me more irritated I guess, and, in those instances, I didn't learn. (Participant 4)*

4.2.3.3 Sub-theme 3: Poor debriefing practice

Most of the participants felt that the limited time allowed for debriefing negatively influenced their learning experience. They further suggested that it influenced how the debriefers conducted and approached the debrief. The debriefing of a learning experience was less favoured by some clinical facilitators.

> *Previous years, there's not always a debrief. (Participant 3)*

> *…going into a debrief with students, I don't think that happens enough. (Participant 8)*

A participant felt that the focus of the clinical facilitators was just to get as many students as possible to perform a simulation rather than taking the time to debrief the learning experience.

> *[S]o, some of them would prefer to get just all the sims done and kinda just tell you where you went wrong; this does this and then this is what you should have done. (Participant 4)*

This participant further had the sense that the focus of the debriefer was to get through as many simulations as possible and to just inform the students where they went wrong, thus limiting the potential for discussion. Discussion was identified as being an important dimension of the debrief, as discussed earlier.

> *I'd say that the bigger focus is on getting as many people to do the simulations as possible than conducting debriefs but then again it also depends on the lecturers (Participant 4)*

A participant added that they wanted a debriefer to be honest with them and have the ability to find learning weaknesses.

> *[I]f I do perform an intervention and perform the intervention is incorrect and I do not reflect on that, it would be nice for that person to bring it up and discuss it but if that person does not, then I mean that that opportunity for learning goes to waste, which is what I feel is happening quite often. (Participant 8)*

4.2.3.4 Sub-theme 4: The attitude of the debriefer

Given the critical role of two-way communication in ensuring a successful debrief, it is important to consider how the students perceived the attitude of the debriefers towards them. Other participants reported that non-verbal gestures, such as facial expressions, gave the student the sense that the debriefer disagreed with what was being discussed or reflected upon or that the debriefer was getting annoyed by what the student was saying.

> *…making a facial gesture whilst you are talking. (Participant 7)*

I asked participants to describe the non-verbal gestures. Participant 1 affirmed that "they kind of look at you in a confused manner, which kind of throws you off." The participant also described their facial expressions as a grimace, whilst participant 8 expressed that some of the debriefers would roll their eyes at them.

> *I mean then you get an eye-rolling kind of response. (Participant 8)*

In addition to the non-verbal gestures, participant 6 felt that the debriefers demonstrated poor listening skills during the debrief session – an issue alluded to previously. Participant 5's response resonated with participant 6's claim that debriefers had poor listening skills by stating that

debriefers would disrupt students during a discussion or even make conversation with other educators that may be present in the venue.

> *[T]hey would disturb you when answering their question, maybe saying something to the other lecturer whilst you are talking. (Participant 5)*

4.2.4 Approaches to learning during simulation debriefing

The fourth theme identified in the data related to the students' expectations from the debrief. The conventional learning approach preferred by students, consistency in the structure of the debrief, and the timing of the debrief are the sub-themes.

4.2.4.1 Sub-theme 1: Learning approach adopted by students during simulation debriefs

The debriefers often implemented a self-directed learning approach. However, the approach was less favoured by the participants who wanted more direction and guidance.

Some debriefers deferred feedback and would not discuss the mistakes made by the students but instead asked them to read up what the current literature is saying about what they think they did wrong. Participants felt that this approach did not inspire learning to take place.

> *So, I feel instead of the lecturer just saying, oh so you don't know, maybe go read up on that because then I feel like the learning doesn't happen. (Participant 6)*

Participants are told to go read up on pathophysiology and treatments but with little to no direction as to what articles, books or chapters should be read.

> *Debriefers just say maybe you should read up more about it, so we have no frame of reference to further our investigations. Rather just a blanket of you should figure it out kind of thing. (Participant 1)*

> *I do understand that medicine sometimes is a grey area, but I mean if 70% of the feedback that you get is to go and read the guidelines… (Participant 8)*

A participant proposed that if debriefers wanted them to read, then, the debriefer should point them to the proper literature. One participant commented: "I understand that they do make points most of the time and that they are here to facilitate our learning, but at some point, I feel like

facilitation needs to point you in some kind of direction in which you can self-learn where I don't think it's guided in some of these cases" (Participant 1).

> *Instead of saying, you know there's a good article, read that because that could maybe give you direction. (Participant 2)*

If no direction is given, learning might not take place:

> *[T]he learner may or may not go read up on it and the issue isn't resolved. (Participant 6)*

4.2.4.2 Sub-theme 2: Consistency in the debriefing structure

The participants also felt that there should be standardisation with some sort of structure to the debrief.

> *[I]mplement a proper debriefing strategy. (Participant 8)*

> *The department should adopt a standardised structure that is available to students. (Participant 3)*

Participant 3 thought that debriefing during the simulation was just as valuable as debriefing afterwards.

4.2.4.3 Sub-theme 3: The timing of the debrief

For the debriefing to be meaningful and contribute to the students' learning experience, the timing of the debrief is important. Time should be allowed for students to calm down and gather their thoughts. In addition, the duration should be sufficient for learning to take place.

Participants 4 and 5 felt that, for the debrief to be effective, added time should be afforded to the students to calm themselves down and to gather their thoughts. Students may not consciously be thinking of everything done during the simulation and added time should be allowed for the student to arrange their thoughts. Interestingly, participant 5 revealed that:

> *Sometimes I walk away with uncertainty from a debrief, not because necessarily from it was a mistake from the lecture side, but it's just because I never had enough to catch my breath.*

Participant 4 reiterated this sentiment by saying:

>*…if the students are visibly irritated, then I think taking time, changing the scenery, maybe fresh air, maybe even doing it in a more private capacity.*

When the participants revealed that there should be an interval following the debriefing, participants were probed to learn what they would consider the ideal duration for this interval to be. Participant 6 felt that a five or ten minute break between the simulation and debriefing should be sufficient to gather one's thoughts and to think about what was done. Ten minutes was the average time the other participants felt should be allowed to "cool down" to gather one's thoughts.

Participant 4 suggested that a change in scenery would help students dispel negative emotions they might carry from the simulation into the debrief. Students and debriefers could leave the simulation venue and go sit in a different but more informal or relaxed location to discuss the simulation.

The duration of the debriefing session should be standard in all simulation rooms. When participants were asked about how long they felt that a debriefing session be, participant 3 believed that the debrief session should be as long as the duration of the simulation. Participant 6 preferred a shorter, more concise debrief. Thus, it was clear that different students had different expectations and preferences.

4.2.4.4 Sub-theme 3: Debriefing following a practical assessment

One unanticipated finding was that the participants expected a debrief session following a practical examination. The participants revealed that, during the practical examination, they were asked a few generic questions. However, those questions did not help them to learn.

>*So, to some extent with the specifics of the questions, they will ask you a question about what you think was wrong with the patient, your diagnosis, and there's always an ethical question. (Participant 1)*

>*That does not help us to progress further in terms of laying down the finer details of our practice and what we aim to achieve when we practice. (Participant 1)*

>*I'm saying again I look at our formal assessments lacks debriefing. The assessors often just ask, so how do you feel about your sim? Wait, tell us what were your goals and your*

goal therapies for this patient? What was wrong with the patient? So, they're asking questions. (Participant 3)

Feedback received during a formative practical assessment is directed at areas in the student's performance needing improvement and refinement. However, participants reported this was lacking. The formative assessment is described in the literature as an assessment designed for learning. This lack of feedback will not ensure corrected and improved practice during the summative assessment and clinical placements.

[I]t's difficult to improve your practice in a real-life work environment and other assessments if during an assessment you don't receive feedback. This is not conducive to growth because of lack of feedback. (Participant 8)

4.3 Conclusion

The findings suggested that, in general, debriefing added value and direction to students' learning experiences, aided in identifying gaps in knowledge, improved their practice, encouraged learning by way of collaboration, and encouraged learning through self-reflection.

This study found that participants preferred debriefing to take place in a space that was safe, where they felt free to reveal their innermost thoughts and feelings as well as feel comfortable to acknowledge when they did something well or wrong. Also, debriefers should effectively communicate with students during the debrief. Debriefers should make use of probing questions that promote critical thinking and open-ended questions to encourage discussions and reflections.

Another major finding was that there were barriers present that restricted learning during the debrief. These barriers included distractions such as irritation and frustration, the students' emotional state, poor debriefing practices by the debriefer, and the debriefer's attitude. These barriers could negatively contribute to the debrief and result in poor learning experiences.

Students made their expectations of debriefing known. These students wanted guidance from the debriefer regarding their learning, especially when assessed during their formative practical assessments. They wanted feedback. Feedback following an assessment informed them of areas

needing rectification and improvement in preparation for the summative assessment and clinical practice.

CHAPTER 5: DISCUSSION

5.1 Introduction

Experiential learning is essential for future health professionals to construct a meaningful learning experience (Dewey, 1938). Students learn through hands-on experience (Dewey, 1938; Casey & Quennerstedt, 2020; Kaufman & Mann, 2014) that shapes their cognitive, psychomotor, and affective learning domains. However, hands-on learning experience by paramedic students during clinical placement rarely happens. Mentors let paramedic students watch skills being performed rather than letting these students perform the skills on real live patients (Liebenberg et al., 2019).

High-fidelity simulations offer an alternative to a real-time learning experience for paramedic students within a safe environment. The simulation is followed by a debriefing session that further promotes learning, by way of feedback and reflection. The purpose of the high-fidelity simulations, followed by a compulsory simulation debriefing, is vital to prepare students for their clinical placement but also to supplement the lack of hands-on learning they endure in the field.

In this chapter, the research findings outlined in chapter 4 are discussed and interpreted. By unpacking these findings, I aimed to understand how the final year Bachelor of Emergency Medical Care (BEMC) students at the Cape Peninsula University of Technology (CPUT) experienced their simulation debriefings and to explore what they found useful, less useful, or valuable.

5.2 Discussion

5.2.1 The value of the debrief

"[N]o growth will occur unless there is a debrief because I mean, you need to know what went well, what went poorly, what are things that can be worked".

This was a statement made by a participant emphasising the value of simulation debriefs. The simulation debrief is essential for nurturing student growth and development. Growth and development are accomplished when the debriefers facilitate discussions during the simulation debrief. Well-facilitated discussions, held during simulation debrief, enable participants to bridge the theory-practice gap and clear up any misunderstandings that might have arisen during the

simulation event. The debrief platform, a fertile ground for learning (Bender & Walker, 2013; Gum et al., 2011), allows debriefers to provide feedback to students. After receiving the feedback, students engage in discussions with the debriefer regarding their performance during the patient simulation. Through the discussions and feedback, students better understood theoretical concepts, the reason for performing certain skills, and best practices for performing those skills. Like playing football, a player can read literature on how to kick a football, but it is only when they play the game that the theory makes sense to the player. On the side-line, the football coach identifies the strengths and the weaknesses of the player and, at the post-game analysis, the coach provides the player with feedback suggesting areas needing improvement. Similarly, during a simulation the students can practice the skills and the feedback provided by the debriefer is aimed at correcting psychomotor skills, therefore, encouraging personal growth and increasing the student's self-confidence (Doherty-Restrepo et al., 2018). In this study, it was clear that, through discussions, students' clinical reasoning skills are developed or improved and debriefer feedback promoted self-development and self-improvement.

Primum non nocere, in Latin meaning "first, do no harm", is the ethical principle and Hippocratic oath to which medical professionals adhere (Cucinotta, 2020). The principle of non-maleficence (do no harm) is stressed by the regulatory body governing paramedics in South Africa (Health Professions Council of South Africa, 2019). To prepare paramedic students to safely treat patients and not harm them (Dubé et al., 2019), clinical facilitators use high-fidelity simulation to create life-like learning experiences these paramedic students could encounter in the field (Makkink & Dreyer, 2021). In this study, it was evident that discussions aided students to better understand the emergencies and to acquaint themselves with the medications and the dose of the medication they administered during the simulation. Errors made by students during the simulation were discussed and feedback was provided addressing areas needing improvement. These discussions and feedback aided students to prepare for future encounters with similar patients or situations, which would reduce medical errors and lessen patient harm (Dubé et al., 2019).

The feedback provided by the debriefer should be positive and of a constructive nature that in no way is intended to disparage, humiliate, or punish students (Ramani et al., 2019; Tutticci et al., 2018). This study confirms that participants preferred feedback that was constructive, encouraged learning, and not destructive or punitive. However, while students valued feedback that was provided to them by debriefers, they admitted that feedback was not always offered to them. The absence of feedback was frustrating for students. Without feedback, they felt unmotivated, and self-improvement would be delayed.

It is well-known that peer learning is the sharing of knowledge between students (Doherty-Restrepo et al., 2018; Ha, 2020). Debriefing supports such social learning amongst peers and debriefers. Through social learning, students develop into collaborative practitioners. Students who are collaborators, set up working relationships based on trust and respect. This trust allows future practitioners to include peers or other medical professionals in their decision-making regarding patient treatment, as well as foster a trusting relationship that allows the frequent sharing and discussion of cases with peers to obtain different perspectives combined with knowledge sharing (Doherty-Restrepo et al., 2018; Schreiber et al., 2020). In this study, social or peer learning was met with mixed emotions by the participants. Some saw the value in learning from peers (Doherty-Restrepo et al., 2018) whilst others did not value their peers' inputs as they felt that their peers lacked experience.

The participants also shared mixed sentiments concerning co-led debriefing. Some saw the benefit of a co-led debriefing session as debriefers fed off each other in a way that enhanced the learning experience whilst others admitted finding discussion difficult when facilitated by co-led debriefers with a difference in opinion. Co-led debriefs reduces any confusion or misunderstandings that may arise during the debriefing, allows for a more diverse viewpoint, and inspires teamwork and communication (Cheng et al., 2017). Furthermore, having two or more debriefers facilitate a session meant a larger pool of knowledge to collectively manage students' expectations and resolve challenging situations. Given these benefits, it was of concern that the students in this study did not all experience co-debriefing positively.

The debriefing not only improved competency but encouraged reflective practice. Students found benefit in the debrief when debriefers encouraged them to critically reflect on their simulation experience. Speaking about their performance amplified students' learning experience. They could reflect on what went well, what did not go well, and highlighting areas they think need improving. Students then considered the learning experience as insightful and valuable. Interestingly, students found value when debriefers shared their real-life experiences with them. Not only did students learn from these experiences, whether good experiences or bad, but this also created a platform for collaborative learning and a platform where students felt more at ease to reflect.

Thompson et al. (2020) support the practice of reflection by affirming that reflection supports the development of knowledge and skill through critical evaluation. The debrief encourages students to become reflective practitioners and encourages lifelong learning. Fanning and Gaba (2007) highlighted that reflection is a feature on which experiential learning depends. Fanning and Gaba

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(2007) go on by saying that the ability to reflect, appraise, and reappraise is considered a foundation of lifelong learning (Fanning & Gaba, 2007). Li et al. (2020) affirm Gibbs's reflective cycle (see section 2.3.5) to be a useful tool to promote reflection. They further state that the Gibbs reflection cycle provides a framework that encourages students to analyse thoughts and feelings, consider alternative solutions, and draw up action plans (Li et al., 2020).

Participants revealed that during the debrief, debriefers would often not answer their questions directly, but rather asked them to seek answers in the medical literature. Students were encouraged by the debriefers to find evidence that would be relevant to their practice or scholarly activities (Royal College of Physicians and Surgeons of Canada, 2019). In this context debriefers may be promoting a more self-regulated approach to learning. However, the students seemed reluctant or lacked the confidence to take responsibility for their learning, which is of concern. These students preferred the conventional learning approaches where teachers impart knowledge to them. The Royal College of Physicians and Surgeons of Canada (2019) believes that medical personnel's knowledge gaps are addressed when they navigate through resources, synthesise evidence to address those gaps, and arrive at clinical decisions. From this study, we learnt that through the process of reflection students could look back at the mistakes they made during the simulation. Together with the feedback, they could refer to the literature on how to rectify those mistakes so that those would not happen in the future or to discover ways to overcome those mistakes should they happen again. However, the students seemed unenthusiastic to take accountability for their learning.

5.2.2 Making the debrief meaningful

For the debriefing experience to be beneficial for the student, the debriefer should create a space that is perceived as safe by the student (Ross, 2020). This safe learning space is neither daunting nor malicious. Sawyer et al. (2016) further added that, for students to feel psychologically safe, they should not be fearful about what they express during the discussions or reflection. Creating a safe space that encourages learning should begin with the debriefer establishing a welcoming environment for the student. Tutticci et al. (2018) emphasised that learning is optimised and reflection opportunities are encouraged when the debriefing environment is safe and nurturing. The International Nursing Association for Clinical Simulation and Learning (INACSL) advocated for the debriefing to be carried out in a safe space and by a competent debriefer. In this study, participants acknowledged that when the debriefing environment is safe and conducive for learning, trust between the debriefer and students is established. This allows students to better

receive the feedback provided to them by the debriefer and encourages analysis of the students' learning through reflection.

In reflecting on enabling practices, participants described how they felt that, instead of the debriefer diving straight into debriefing, they could also relieve tension by asking students an introductory question. A small number of those interviewed in this study suggested that an introductory question breaks the ice with the students and alleviates stress, which creates a welcoming environment. When an introductory question was asked at the start of the debrief, participants felt that breaking the ice calmed them down. This relieved the stress and other tensions and sparked engaging discussions between them and the debriefer. Rudolph et al. (2014) and Sawyer et al. (2016) believe that this sort of pre-briefing creates a safe space and eases tensions, ensuring the psychological safety of students. A small number of those interviewed suggested that the stress of being watched by the debriefer is a barrier to learning. Yet, stress may be beneficial for learning (Reynolds et al., 2020). Stress stimuli do contribute to a transformative change known as "stress-related growth" (Rudland et al., 2020:44). Stress is seen as the driving force for students to practice more frequently and study more thoroughly (Rudland et al., 2020).

Also, a small number of respondents suggested that the debriefer asking either leading or open-ended questions leads to engaging discussions. Asking open-ended questions helped students make meaning of their learning and pull various concepts together. Open-ended questions are beneficial in that it encourages students to reflect on their performance and to explore their thoughts (Sawyer et al., 2016). Eppich & Cheng (2015) also encourage debriefers to ask open-ended questions or probing questions during a debrief whilst Tutticci et al. (2015) added that debriefers should ask open-ended questions or probing questions when conducting inquiries or to add meaning to a discussion.

Participants highlighted that debriefers should actively listen to what they are saying during the discussion or the reflection. When the debriefer listens to the student, it shows that they are interested in what the student is saying (Ross, 2020). When debriefers interrupt students in the middle of their conversations, students might lose interest in the discussions and in the debrief session itself. From this study, participants felt that they were less inclined to have a proper or meaningful debrief when debriefers kept interrupting them when they spoke.

It may also be important for the debriefer to embrace silence and not see the student's silence as an opportunity to ask follow-on questions. Debriefers can encourage participation in the

discussion when they do not rush students to answer (Palaganas et al., 2016). A common view amongst participants in this study was that when they are silent it meant that they were processing their thoughts or formulating a response to the inquiry. Their silence means that they are analysing their train of thought, formulating an argument justifying actions they undertook or self-assessing their performance. Therefore, by understanding why students are silent during the debrief, silence may be less uncomfortable but welcomed as a period where the students process thoughts.

For students to find the debrief beneficial, the debriefer needs to engage with their students during the discussion by encouraging and facilitating the discussions (Bender & Walker, 2013; Bowe et al., 2017; Burns, 2015; Cheng et al., 2017; Doherty-Restrepo et al., 2018; Garden et al., 2015; Omer, 2018; Ramani et al., 2019). Students actively engage in their learning if debriefers actively engage with them. In this study, participants recommended that, for the debriefer to promote engagement or engage with students, the debriefer should possess the skill of effective communication.

For effective communication to take place, communication has to be clear, concise, concrete, coherent, complete, and courteous. Students find communication effective when the debriefer listens to them, expresses themselves, and interprets the student's body language. Additionally, the debrief stimulates students to communicate efficiently. Students pay attention to what the debriefer is saying, process what the debriefer is saying, and provide rationales for their actions undertaken during the simulated learning experience in a clear, concise, and coherent manner.

5.2.3 Impeding student learning during the debrief

Students attributed distractions, their emotions and the non-verbal gestures portrayed by the debriefer as barriers that restricted their learning during the debrief. For meaningful learning to take place, the students should give their undivided attention to the debrief. Yet, the participants of this study mentioned that distractions impeded their attention during the debrief. Once distracted, participants felt that they struggled to fully engage with the learning taking place during the debrief. Participants highlighted that the noises generated by peers packing away equipment as a distraction. Sometimes, when a debriefer is facilitating a debrief, they are interrupted by others entering the debriefing space and the debriefer's focus shifts from the students to those entering the room. Distractions were also seen to give rise to negative emotions. Participants described feeling disrespected when debriefers were distracted by others. They argued that the debriefer should devote their undivided attention to them.

Participants named many emotions that inadvertently distracted them from giving their full attention to a debrief or led them to shy aware from participating in discussions during the debriefing. These emotions include anxiety and irritation but also feeling intimidated by the debriefer or feeling belittled by sarcastic remarks made by the debriefer.

Learning may not take place or will be limited should students not feel comfortable discussing the mistakes they made during the simulation or should they be unable to control their emotions (Ko & Choi, 2020). Students who did not take well to critique, those who had insecurities or those students who were unhappy with the feedback they received from the debriefer would often detach from the debriefing session.

As previously stated, debriefers should pay attention to the non-verbal gestures they exhibit. These gestures could distract students from engaging in the debrief (Ross, 2020). Participants perceived non-verbal gestures such as facial expressions, the rolling of eyes, or grimaces as debriefers becoming annoyed, frustrated, irritated or impatient with them. Similarly, students may sense that the debriefer is losing interest in what they are saying or just not valuing their opinion.

Allowing students to break before the debrief could allow the students to control their emotions so that they are focused during the debriefing. If they are focused during the debrief then learning can take place. The participants in this study felt that a five to ten minute break is sufficient for them to control their emotions. In addition to having a break to "cool down", rest, and gather their thoughts, a few participants preferred the debrief to take place in a location different from where the simulation was. For these students to compose themselves, it may be necessary to allow a break to control their emotions and the debrief may need to take place in a venue other than where the simulation took place. The different venue or change of scenery may further help students control their emotions.

5.2.4 Students' expectations from the debrief

Students expected more time to be devoted to the debriefing, however, they had differing perceptions as to how long an ideal debrief should be. Some participants assumed that the duration of the debrief was to be the same as that of the simulation. Sawyer and Deering (2013) recommended that adequate time should be allowed for a debrief as poor time management could negatively affect the discussions. When inadequate time is allotted for discussing key learning elements, the discussions could be omitted or superficially discussed. This would harm learning. There is no consensus as to the proper duration of the simulation debrief. According to Pivec and Renee (2011), a debrief of 31 minutes is insufficient for a comprehensive analysis but suggests

that the duration of a simulation debrief should last between 20 to 30 minutes or at least two to three times the length of the simulation. A more recent article put forward by Schertzer and Patti (2020), suggested that a debrief session should be the same duration as the simulation. They suggest that a ten minute simulation will need a ten minute debrief (Schertzer & Patti, 2020). There are many inconsistencies in what these authors propose to be adequate time for meaningful debriefing. The time to be allocated for a meaningful debrief depends on many variables such as the length of the scenario, and the type and complexity of the skills performed. During the pre-brief the debriefer plans the debrief session. The debriefer should have to consider these variables when assigning time to conduct a debrief.

The focus of the interviews was to explore how paramedic students registered for a Bachelor's programme experienced their simulation debriefs. During the interviews, the participants drew attention to the fact that no feedback or simulation debriefings occurred after practical assessments. This was an unexpected finding and imperative to report. Thompson et al. (2020) alleged that feedback of high quality occurs when discussions between the student and the assessor take place. Feedback following an assessment, even if learning objectives are assessed in the form of a simulation, is of utmost importance to improve or transform future actions (Ramani et al., 2019). Ramani and her co-authors emphasised that "formative performance-based feedback is essential for students to calibrate their performance and formulate action plans to narrow the gap between their current and expected performance" (Ramani et al., 2019:744). If feedback is not provided to students following the assessment then they would not know where the gap between their performance and their expected performance lies or realise where their strengths and weaknesses lie (Schuwirth & Van Der Vleuten, 2019). Thompson et al. (2020) further recommend feedback following an assessment to guide students' development of knowledge, skills and attitude. A formative assessment is an assessment for learning (Schuwirth & Van Der Vleuten, 2019; Schuwirth & Van der Vleuten, 2014). From the study, we are made aware that during the formative assessment, students reflect on their performance. Yet, feedback provided by the assessor to them regarding their performance is absent. Feedback following a formative assessment is particularly important for learning and for the student to prepare for their clinical placement and summative assessment. Assessors should religiously provide student feedback, informing them of their strengths, weaknesses, areas needing development or errors needing correction. Should these errors go uncorrected, students carry these errors over into the summative assessments and over to real-life patients. These errors could be fatal, yet could have been corrected sooner (Tutticci et al., 2018).

A structure to the debriefing that is clear about the process and expectations will aid in the facilitation of the debrief and will increase learning (Jaye & Thomas, 2015; Palaganas et al., 2016). Having a structured debrief will bring about consistency and standardisation to the debrief practice in paramedic training. To date, there are various models for debriefing paramedic students. A few examples of these models include the Difficult Debriefing Tool (Grant et al., 2018), Promoting Excellence and Reflective Learning in Simulation (PEARLS) (Eppich & Cheng, 2015), the Plus-Delta (Fanning & Gaba, 2007), and the Advocacy-Inquiry Method (AIM) (Timmis & Speirs, 2015). From this study, it is clear that students will prefer if a consistent structure to debriefing is followed but did not experience this.

In conclusion, students have many expectations from the debrief and how the debriefing should contribute to their learning. The duration of the debrief is questionable. The premise is that if the debrief was too short, not enough time is included for feedback, reflection and discussion. Inadequate time set aside for debriefing will not sufficiently address the students' learning needs, learning will not take place or will be unsatisfactory. Also, students expect to be debriefed after their practical assessments. The feedback would help and prepare them for their summative assessments and clinical placements. Their final suggestion was that debriefing should be structured to standardise the practice of debriefing they received and to ensure consistency.

CHAPTER 6: CONCLUSIONS AND RECOMMENDATIONS

6.1 Conclusions

This study set out to determine how paramedic students experienced simulation debriefing opportunities and to explore the dimensions of debriefing that paramedic students found valuable. The study has shown that the debrief can be an enabling learning experience that provides an opportunity for students to critically reflect on their learning experiences and to identify areas where they need to further develop in terms of future practice. The debrief also encourages learning through collaboration and enhances students' confidence to contribute to learning within a multi-disciplinary team. As such, the debrief has the potential to be a powerful learning tool.

The debriefer needs to be cognisant of the different needs and preferences of the student during the debrief. Debriefers may adopt a constructive learning approach where they encourage learning. However, the paramedic students still preferred a learning approach where the debriefer provides the input and direction. Students preferred the debriefer to point them in the direction of their learning resources.

The simulation debrief encourages social learning. From the literature documented in chapter 2, it is evident that peer feedback is valuable when debriefing. Through peer feedback, trust amongst students is established and relationships are strengthened (Doherty-Restrepo et al., 2018; Schreiber et al., 2020). However, this was met with conflicting views amongst some participants who contributed to this study. Some participants saw the value in learning from peers whilst others did not.

It is imperative that debriefing takes place to intensify the clinical learning experience during a simulation. Debriefers play a pivotal role in students' learning experiences during the debriefing by providing students with feedback. Feedback included advice on how to improve or refine the practice of their skills, encouraging reflection, and evoking thought-provoking discussions. These thought-provoking decisions highlight students' gaps in knowledge but were also aimed at improving clinical reasoning and clinical decision-making. Effective communication is necessary where the debriefer should make use of various techniques when conducting the inquiry with the students and to ensure that the reflections and discussions are thought-provoking and meaningful.

The reflection during the simulation debrief prompts the journey of lifelong learning and inspires these future paramedics to become medical experts. For these future paramedics to become future medical experts they need to develop into reflective practitioners and, as mentioned above, collaborative practitioners. Effective communication skills, practised during the debrief, improves students' ability to collect and interpret information provided by their patient and the family. Collaborative practice ensures safe but best patient care aligned with the most current evidence-based practice.

However, this study highlighted some barriers that might not facilitate learning. Students felt that negative emotions following their simulation and distractions during the debriefing contributed to poor learning experiences. To overcome these barriers so that the debriefing supports learning, the following recommendations were proposed.

6.2 Recommendations based on this study

Some recommendations can be offered based on this study. Firstly, the importance of pre-briefing should not be ignored. Debriefers should meticulously plan not just for the simulation learning experience but also for the debriefing of that learning experience. The planning should include adequate time allocation for the debriefing of the learning experience as well as time for the students to break away from the simulation environment just to gather and process their thoughts.

For meaningful learning to occur, the debrief should take place in an environment that is deemed safe by the students. Students need a space where they feel comfortable to reflect and disclose their innermost thoughts and engage in discussions with debriefers knowing that they will not be judged, humiliated or endure sarcastic commentaries.

Debriefing should also follow simulations that are used as a method for assessment as this offers a further opportunity for learning. Students should receive feedback following assessments so that they are informed of the areas needing correction in order to prevent them from making the same mistakes in other assessments or on a patient.

Students could be guided by the Gibbs Reflective Model when reflecting on their learning experience (Gibbs, 1988). This model will help students to explore their feelings experienced during the learning as well as self-evaluate what went well and what did not go well. The model also encourages them to analyse how they handled that experience against how current evidence

suggests they should have. This could aid the students to develop a plan of action to best manage the situation, should it arise in the future.

Communication between the debriefer and students should be clear, concise, concrete, coherent, complete, and courteous. Debriefers are to guide and engage students in the discussion, as well as encourage higher-level thinking. This could be accomplished by:

1. asking students an introductory question just to break the ice with the students and to alleviate stress, therefore, creating a welcoming environment.
2. the debriefer asking open-ended and probing questions to encourage engaging discussions.
3. debriefers managing difficult conversations by actively listening to what the students say and not disrupt them.
4. whenever there is silence, the debriefer embracing the silence as the student might be processing their thoughts.

Faculties should consider some standardisation or structure to be used when debriefing students following a patient simulation. Standardising the debriefing structure will ensure that all students receive the same level of learning. This structure can be applied for all students enrolled for the Diploma in Emergency Medical Care (DEMC) and the Bachelors in Emergency Medical Care (BEMC).

6.3 Limitations of this study

The findings in this report are subject to at least two limitations. Firstly, this was a small-scale study that explored the debriefing experiences of just eight paramedic students. The voice of these participants represented students from the BEMC programme at the Cape Peninsula University of Technology (CPUT) and not the voices of students registered for other paramedic programmes or those from other higher education institutions. The researcher attempted to answer the research question and to meet the objectives of this study by using a sample that was relatively small in size. Despite that, these eight participants provided rich data. Secondly, this study explored how paramedic students experienced their simulation debriefs and did not explore the lecturers' experiences of simulation debriefings. Contributions from the debriefers could provide a more complete picture.

6.4 Recommendations for future research

While this study has provided preliminary insights from a selected group of paramedic students in terms of their experiences during their simulation debriefs, it also points to avenues for further enquiry. Hearing from the lecturers themselves, for example, could enhance our understanding of the debrief experience and context, and also catalyse future work exploring faculty development needs for debriefers. Ultimately, as simulation continues to be used as a key learning tool in the training of future paramedics, the role, purpose and practice of the debrief will remain an important area of focus.

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ADDENDA

Addendum A: Invitation to the potential participants

Dear 4th-year BEMC student,

My name is Preevan Naidoo and I am a postgraduate - MPhil in Health Professions Education student, enrolled at Stellenbosch University. I would like to invite you to participate in my research project that aims to explore the paramedic learner's experience of simulation debriefing.

The study aims to better understand the paramedic student's experience of debriefing, and the dimensions of debriefing the paramedic student find valuable. The objective of the study is to explore the value of the debrief to enhance simulation learning and to inform and develop lecturers involved in simulation debrief.

This study has been approved by the Health Research Ethics Committee (HREC) the Stellenbosch University as well as the Cape Peninsula University of Technology and will be conducted according to the ethical guidelines and principles of the international Declaration of Helsinki, the South African Guidelines for Good Clinical Practice (2006), the Medical Research Council (MRC) Ethical Guidelines for Research (2002), and the Department of Health Ethics in Health Research: Principles, Processes, and Studies (2015).

Your participation is <u>**entirely voluntary**</u>, and you are free to decline to participate. If you say no, this will not affect you negatively in any way whatsoever. You are also free to withdraw from the study at any point, even if you did agree to participate. Please see the attached information and consent form which you would have to complete and return to this email address. Should you require a printed copy, I will arrange to drop one off for you.

I would appreciate your consideration to participate in this study and inform me via email of dates and times that would best suit you. Participation will take place in the form of confidential one-on-one interviews (semi-structured interviews) that will be conducted, online, through video conferencing. I will use MS Teams as the platform for online interviews. A meeting request will be sent to the outlook student email addresses of those wanting to participate.

I do believe that this study can be of great benefit to us clinical educators better understand how simulations are debriefed in a paramedic context. Your experience will also guide faculties development and inform us, educators, how students prefer to be debriefed. I am looking forward to your positive response.

Kindest Regards,

Preevan Naidoo

Addendum B: Informed consent form

TITLE OF RESEARCH PROJECT:	
Paramedic students' experience of simulation debriefings	
DETAILS OF PRINCIPAL INVESTIGATOR (PI):	
Mr Preevan Naidoo	**Ethics reference number:** S20/03/079 CPUT/HW-REC 2020/H25
ADDRESS: Western Cape College of Emergency Care, on the Premise of Tygerberg Hospital, Francie Van Zijl Dr, Cape Town, 7505	**PI Contact number:** 021 938 4110

I am Preevan Naidoo a lecturer of Medical Emergency 2 on the Diploma in Emergency Care and one of five (5) clinical educators for the abovementioned program. I would like to invite you to participate in a research project that aims to explore the paramedic learner's experience on simulation debriefing as per the requirements for the research component of the MPhil in Health Professions Education.

Please take some time to read the information presented here, which will explain the details of this project and contact me if you require further explanation or clarification of any aspect of the study. Also, your participation is <u>entirely voluntary,</u> and you are free to decline to participate. If you say no, this will not affect you negatively in any way whatsoever. You are also free to withdraw from the study at any point, even if you do agree to take part.

The Health Research Ethics Committee (HREC) at Stellenbosch University and the Cape Peninsula University of Technology has approved this study. The study will be conducted according to the ethical guidelines and principles of the international Declaration of Helsinki, the South African Guidelines for Good Clinical Practice (2006), the Medical Research Council (MRC) Ethical Guidelines for Research (2002), and the Department of Health Ethics in Health Research: Principles, Processes, and Studies (2015).

What is the study about?

The study aims to better understand the paramedic learners experience of debriefing, and the dimensions of debriefing the paramedic learners find valuable. The objective of the study is to explore the value of the debrief to enhance simulation learning and to inform and develop the educators involved in simulation debrief.

What are the procedures involved?

This is a small-scale study and therefore the first 10 students who respond positively to the invitation will be invited to the interview.

One-on-one interviews (semi-structured interviews) will be conducted online through video conferencing to explore the participants' perceptions of the post-simulation debriefing. I will use MS Teams as the platform for online interviews. A meeting request will be sent to the participants' outlook student email addresses. To compensate for the data usage, a fifty (50) rand online voucher will be awarded to all participants.

How long will the interviews last?

It is envisaged that the duration of the interviews will fall between 30 – 60 minutes.

Why did we invite you to partake in the study?

The purpose of inviting you to partake in this study is to explore how do the final year undergraduate Bachelor's in Emergency Care paramedic learners, at the Cape Peninsula University of Technology experience post-simulation debriefings?

Will you benefit from taking part in this research?

The study will present no real benefit to the participants.

Are there any risks involved in your taking part in this research?

The study will present no risk to the participants. The identity of all participants will be anonymized, and confidentiality will always be upheld. All data and personal information will be safely stored on a password-protected computer. Only the primary researcher will keep the key and passwords.

If you do not agree to take part, what alternatives do you have?

You can choose not to participate in the study. Your participation is voluntary. No harm will be caused to you.

Who will have access to your information?

No personal information or data collected during the study will be shared. The primary investigator is the only person to have access to your information. As stated above, all information will be treated as confidential and stored in a secure cabinet or on a password-protected computer

Even though it is unlikely, what will happen if you get injured somehow because you took part in this research study?

No harm will be caused to you during or after the study. If it does, the researcher will ensure that the participant is referred to the appropriate medical facilities immediately.

Will you be paid to take part in this study and are there any costs involved?

No participant will be financially compensated to partake in the study.

<u>YOU WILL RECEIVE A COPY OF THIS INFORMATION AND CONSENT FORM FOR YOUR RECORDS</u>

Declaration by Participant

By signing below, I .... agree to take part in a research study entitled Paramedic students' experience of simulation debriefings.
I declare that:

- I have read this information and consent form, or it was read to me, and it is written in a language in which I am fluent and with which I am comfortable.

- I have had a chance to ask questions and I am satisfied that all my questions have been answered.

- I understand that taking part in this study is voluntary, and I have not been pressurized to take part.

- I may choose to leave the study at any time and nothing bad will come of it – I will not be penalized or prejudiced in any way.

- I may be asked to leave the study before it has finished if the study doctor or researcher feels it is in my best interests, or if I do not follow the study plan that we have agreed on.

Signed at (place) .... on (date) .... 2020.

---   ---
Signature of participant   Signature of witness

Declaration by investigator

I (name) .... declare that:

- I explained the information in this document in a simple and clear manner to
  ....

- I encouraged him/her to ask questions and took enough time to answer them.

- I am satisfied that he/she completely understands all aspects of the research, as discussed above.

- I did/did not use an interpreter. (If an interpreter is used then the interpreter must sign the declaration below.)

Signed at (place) .... on (date) .... 2020.

---   ---
Signature of investigator   Signature of witness

- I may choose to leave the study at any time and nothing bad will come of it – I will not be penalized or prejudiced in any way.

- I may be asked to leave the study before it has finished if the study doctor or researcher feels it is in my best interests, or if I do not follow the study plan that we have agreed on.

Signed at (place) .... on (date) .... 2020.

....
Signature of participant   Signature of witness

Declaration by investigator

I (name) .... declare that:

- I explained the information in this document in a simple and clear manner to

    ....

- I encouraged him/her to ask questions and took enough time to answer them.

- I am satisfied that he/she completely understands all aspects of the research, as discussed above.

- I did/did not use an interpreter. (If an interpreter is used then the interpreter must sign the declaration below.)

Signed at (place) .... on (date) .... 2020.

....
Signature of investigator   Signature of witness

Permission to have all anonymous data shared with journals:

Please carefully read the statements below (or have them read to you) and think about your choice. No matter what you decide, it will not affect whether you can be in the research study or your routine health care

When this study is finished, we would like to publish the results of the study in journals. Most journals require us to share your anonymous data with them before they publish the results. Therefore, we would like to obtain your permission to have your anonymous data shared with journals.

Tick the option you choose for anonymous data sharing with journals:

I agree to have my anonymous data shared with journals during the publication of the results of this study

☐   Signature_____

OR

I do not agree to have my anonymous data shared with journals during the publication of the results of this study

☐   Signature_____

Addendum C: The interview schedule

The Interview Schedule:

- Welcome the participant
- Introduce yourself
- "Ice Breaker" – attempt to create a safe yet relaxed atmosphere
- Brief the candidate about the study and why their participation in the research is of utmost importance and thank them for their participation.
- Explain the importance of keeping the participant identity anonymously
- Inform the participant that any answers provided by him is confidential and will not elicit any malicious behaviour or intent towards them in the future.

PROBING QUESTIONS (Examples)

- "Tell me more"
- "That is interesting"
- "What do you mean"

"SWITCH ON THE AUDIO RECORDER"

Question 1

Think back to a simulation you have done or observed. When the simulation is completed, do you have a chance to discuss/talk about what happened during the simulation?

- What do you talk about?

Debriefing is defined as a structured period of reflective discussion and feedback usually held immediately after a simulation event.

Question 2

What, if anything, do you find useful from the debriefing

- How does it help better understand theory?
- How does it help/prepare you for work-integrated learning or clinical placement

Question 3

What do you think the clinical educator can do to make it easier for you to reflect on?

Question 4

What could the lecturer do differently so that you could benefit from the discussion following your simulation?

Question 5

At any time during the debriefing did you lose interest or were distracted. Why?

- What did the educator do to encourage your participation during the debrief?

Question 6

In your opinion, what could the clinical educator do to provoke engaging discussions?

Question 7

Are there any recommendations you would suggest for the clinical instructors to improve the debriefing or feedback post simulations?

Closing

- Thank you for taking the time out of your busy schedule to partake in this research. Your input has provided a wealth of information and will positively contribute to this study.
- Thank you.

"END RECORDING"

Addendum D: Stellenbosch University's HREC Approval Letter

LS

UNIVERSITEIT
STELLENBOSCH
UNIVERSITY

Approval Notice

New Application

10/06/2020

Project ID:14726

HREC Reference No: S20/03/079

Project Title: Paramedic Students' Experience of Simulation Debriefing

Dear Mr Preevan Naidoo

The Response to Modifications received on 22/05/2020 08:46 was reviewed by members of Health Research Ethics Committee via expedited review procedures on 10/06/2020.

Thank you for attending to the requested modifications, your research protocol is now finally approved.

Please note the following information about your approved research protocol:

Protocol Approval Date: 10 June 2020

Protocol Expiry Date: 09 June 2021

Please remember to use your Project ID 14726 and Ethics Reference Number S20/03/079 on any documents or correspondence with the HREC concerning your research protocol.

Please note that the HREC has the prerogative and authority to ask further questions, seek additional information, require further modifications, or monitor the conduct of your research and the consent process.

After Ethical Review

Translation of the informed consent document(s) to the language(s) applicable to your study participants should now be submitted to the HREC.

Please note you can submit your progress report through the online ethics application process, available at: Links Application Form Direct Link and the application should be submitted to the HREC before the year has expired. Please see *Forms and Instructions* on our HREC website (www.sun.ac.za/healthresearchethics) for guidance on how to submit a progress report.

The HREC will then consider the continuation of the project for a further year (if necessary). Annually a number of projects may be selected randomly for an external audit.

Provincial and City of Cape Town Approval

Please note that for research at a primary or secondary healthcare facility, permission must still be obtained from the relevant authorities (Western Cape Departement of Health and/or City Health) to conduct the research as stated in the protocol. Please consult the Western Cape Government website for access to the online Health Research Approval Process, see: https://www.westerncape.gov.za/general-publication/health-research-approval-process. Research that will be conducted at any tertiary academic institution requires approval from the relevant hospital manager. Ethics approval is required BEFORE approval can be obtained from these health authorities.

We wish you the best as you conduct your research.

For standard HREC forms and Instructions, please visit: Forms and Instructions on our HREC website https://applyethics.sun.ac.za/ProjectView/Index/14726

If you have any questions or need further assistance, please contact the HREC office at 021 938 9677.

Yours sincerely,

Mrs. Brightness Nxumalo
HREC 2 Coordinator

National Health Research Ethics Council (NHREC) Registration Number:

REC-130408-012 (HREC1)•REC-230208-010 (HREC2)

Federal Wide Assurance Number: 00001372

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Addendum E: Cape Peninsula University of Technology Ethics Clearance Certificate

Cape Peninsula
University of Technology

HEALTH AND WELLNESS SCIENCES RESEARCH ETHICS COMMITTEE (HW-REC)
Registration Number NHREC: REC- 230408-014

P.O. Box 1906 • Bellville 7535 South Africa
Symphony Road Bellville 7535
Tel: +27 21 959 6917
Email: sethn@cput.ac.za

20 November 2020
REC Approval Reference No:
CPUT/HW-REC 2020/H25

Faculty of Health and Wellness Sciences

Dear Mr P Naidoo

Re: APPLICATION TO THE HW-REC FOR ETHICS CLEARANCE

Approval was granted by the Health and Wellness Sciences-REC to Mr P Naidoo for ethical clearance. This approval is for research activities related to research for Mr P Naidoo at Cape Peninsula University of Technology in the department of Emergency Medical Sciences.

TITLE : Paramedic students' experience of simulation debriefings

Approval will not extend beyond 21 November 2021. An extension should be applied for 6 weeks before this expiry date should data collection and use/analysis of data, information and/or samples for this study continue beyond this date.

The investigator(s) should understand the ethical conditions under which they are authorized to carry out this study and they should be compliant to these conditions. It is required that the investigator(s) complete an annual progress report that should be submitted to the HWS-REC in December of that particular year, for the HWS-REC to be kept informed of the progress and of any problems you may have encountered.

Kind Regards

Ms Carolynn Lackay
Chairperson – Research Ethics Committee
Faculty of Health and Wellness Sciences

Addendum F: Permission letter to perform research at the Cape Peninsula University of Technology

Office of the Deputy Vice Chancellor:
Research, Technology Innovation & Partnerships
Bellville Campus
P O Box 1906
Bellville 7535
Tel: 021-9596242
Email: PHAHOD@cput.ac.za

20 November 2020

Mr Preevan Naidoo
Lecturer: Diploma EMC
College of Emergency Care
Department of Health
Western Cape Government

Dear Mr. Naidoo

RE: PERMISSION TO CONDUCT RESEARCH AT CPUT

The Institutional Ethics Committee received your application entitled: "*Paramedic students' experience of simulation debriefings*" together with the dossier of supporting documents.
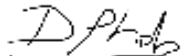
Faculty Ethics Committee Approval Date: 20 November 2020

Faculty Ethics Committee Approval Reference No: CPUT/HW-REC 2020/H25

Permission is herewith granted for you to do research at the Cape Peninsula University of Technology.

Wishing you the best in your study.

Sincerely

Dr David Phaho
Deputy Vice-Chancellor: Research, Technology, Innovation & Partnerships
Cape Peninsula University of Technology | #WeAreCPUT

t: +27 (0) 21 959 6242 | e: dvcresearch@cput.ac.za w: www.cput.ac.za
PO Box 1906 Bellville 7535 | Symphony Way, Bellville, Cape Town, South Africa

Addendum G: Example of a coded transcript

Interviewer:
Do you have a chance to discuss, talk about what happened during the simulation?

Participant:

Thinking back to my self previously, doing the short-term courses after simulation we never had the opportunity to talk about how your simulation went but with the short term courses as you walk out of the room you not sure or you don't get the opportunity to maybe discuss where you have done good or bad? In my current situation, as I'm studying the BMC after the simulations, normally you get an opportunity to debrief and talk about how you have performed, what have you done good and where you could have improved in your treatment. However, you were managing the patient, I think between the short-term courses and the BEMC, there is a huge difference from the days when I came from as short-term causes has stopped now, so I would assume that hasn't changed.

> **Commented [PN1]:** Debriefing allows for reflection (Advantage of Debrief)

Interviewer:

OK, so thank you for that participant number 2. So when you refer to the new training that you involved with the BEMC, what do you talk about following a simulation or post-simulation?

Participant:

What I'm talking about is. Post simulation allowed you to discuss your treatment. You manage your management and how you could have improved. And you can have an opportunity to reflect on your simulation.

> **Commented [PN2]:** Encourages discussion
>
> **Commented [PN3]:** Corrective practice
>
> **Commented [PN4]:** Debriefing allows for Reflection

Interviewer:

So debriefing is defined as a structured period of reflection or reflective discussion. Feedback usually held immediately after a simulation event, so I just have to summarize that for you debriefing is a structured period of reflective discussion and feedback, which happens immediately after the simulation event. So with that definition What, if anything, do you find useful from your debriefing?

Participant:

The usefulness of the debriefing would be to allow me to discuss my management that could not maybe be clear in my actions or in the way I managed the patient so it could then give a clear distinction on what the train of thought would be during the simulation, and then you can share that obviously with your examiners and that allows you to also give feedback on what would be more appropriate or whether your management for the simulation was appropriate.

> **Commented [PN5]:** Discussion Reflection
>
> **Commented [PN6]:** Promotes feedback

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Addendum H: Example of the coding journal