

https://dspace.org/

Experiences of University of Johannesburg paramedic students in the debriefing of patient simulations activities

2019-06-06
https://hdl.handle.net/10539/28958

Downloaded from a DSpace repository. https://dspace.org/

EXPERIENCES OF UNIVERSITY OF JOHANNESBURG PARAMEDIC STUDENTS IN THE DEBRIEFING OF PATIENT SIMULATIONS ACTIVITIES

ANDREW R. MOSIANE

[1261282]

A research report submitted to the Faculty of Health Sciences, University of the Witwatersrand, in partial fulfilment of the requirements for the degree of:

Master of Health Science Education

2019

Declaration

I Andrew R. Mosiane, declare that this Research Report is my own, unaided work. It is being submitted for the Degree of Master of Health Science Education to the Faculty of Health Sciences, Centre of Health Science Education at the University of the Witwatersrand, Johannesburg. It has not been submitted before for any degree or examination at any other University.

……

(Signature of candidate)

……day of ……June ….2019…….in……Pretoria……

Dedication

I dedicate this research report to my family which continuously inspire, support and believe in me. I am forever grateful to their contribution to my development.

Abstract

Background

Paramedics during their training are exposed to a variety of pedagogical approaches including Simulation Based Medical Education (SBME). SBME is adopted as an appropriate instructional design for Emergency Medical Care (EMC) training as it affords the students an opportunity to practise in a safe learning environment and narrows the theory practice gap. Post simulation debrief activity is a pivotal part of SBME as it presents the opportunity for students to reflect on practice and knowledge gaps.

Objective

The study explored the experiences of paramedic students at the University of Johannesburg (UJ) in the debriefing of patient simulation based activities.

Methodology

A descriptive qualitative study, using semi-structured interviews of the 4th year Bachelor of Health Science (BHSc) EMC students at the UJ was conducted. Data were analysed using the thematic analysis approach as described by Braun and Clarke.

Findings

A total of 18 participants were interviewed face to face. The interviews were approximately 20 minutes long per participant. Three themes encompassing nine categories, emerged from the data: 1) debrief methodology 2) debrief role players and 3) debrief lived experience. Paramedic students at the University of Johannesburg, Department of EMC expressed an overall positive experience with patient simulation debriefing activity. The students also highlighted their concerns with regards to certain aspects of the patient simulation debrief: 1) the 2nd year experience in classroom practice simulation debriefing, 2) debriefing of assessment patient simulation across all years of study and 3) the lack of consistent structure for the patient simulation debriefing. Experiential learning theory and reflective practice remained the overall underpinning concepts for the effectiveness of patient simulation debrief as a learning experience.

Conclusion

The study concludes that the paramedic students share the valuable role that patient simulation debriefing add as an integral part to SBME. The findings of this study further pave a way for future research within the field of EMC in SBME.

Keywords: Simulation Debrief, SBME, EMS, EMC, Paramedics, Students, Experiential Learning, Reflective Practice.

Acknowledgements

This research report is part of the fulfilment for the Masters of Health Science Education, a new qualification offered by the Centre of Health Science Education at the University of Witwatersrand. The following special individuals are acknowledged for their contributions in the successful completion of this report:

Mrs. Shirra Moch, my supervisor who worked tirelessly with me to ensure that we always put our best foot forward, we work hard towards the successful completion of my Masters' degree. Your continuous support and faith in me is forever cherished.

Prof. Patricia McInerney for developing an exceptional program that has made my love for pedagogy to grow every time I attend a class with her. For always believing in the first cohort of the Masters' program and ensuring that we always work tirelessly even when you feel like dropping out, by just a mere recollection of her charming face and her dedication to this program you can't help yourself but give that little last effort.

Prof. Christopher Stein for his assistance in ensuring that the ethics clearance was facilitated from the University of Johannesburg without any headaches and unnecessary delays.

The University Of Johannesburg Department Of Emergency Medical Care under the auspices of Prof. Craig Vincent-Lambert for availing the classrooms and students for the study.

The BHSc. EMC fourth year group for availing themselves as part of the research with a lot of enthusiasm and commitment in all meetings scheduled for the interviews without any fail every time. The study was not possible without your participation.

Last but not least, all glory be to God Almighty who makes all things possible through Him….

Table of contents

Declaration i

Dedication ii

Abstract iii

Acknowledgements vi

List of Figures x

List of Tables xi

Abbreviations xii

CHAPTER 1 1

1 Introduction and literature review 1

1.1 Introduction 1

1.2 Study Aim and Objectives 3

Aim: 3

Objectives: 3

1.3 Background and Terminology 3

1.4 Literature Review: Debriefing of patient simulation activities 5

CHAPTER 2 13

2 Methodology 13

2.1 Research Question 13

2.2 Researcher positionality 13

2.3 Research Paradigm 15

2.4 Research Design 16

2.5 Population and Sampling Strategies 16

2.6 Data Collection 18

2.7 Data Analysis 18

2.8 Limitations of this study 20

CHAPTER 3 22

3 Data Analysis 22

CHAPTER 4 28

4 Findings and Discussion 28

4.1 Debrief Methodology 28

4.1.1 Structure 29

4.1.2 Conduct 32

4.1.3 Performance 35

4.1.4 Emotions 39

4.1.5 Rationale 43

4.2 Debrief Role Players 45

4.2.1 Facilitator role 45

4.2.2 Student Role 47

4.3 Debrief Lived Experience 48

4.3.1 Overall Simulation Debrief Experience 48

4.3.2 Study Year Specific Experience 53

4.4 Experiential learning 55

4.4.1 Reflective practice 56

CHAPTER 5 58

5 Recommendation and Conclusion 58

5.1 Recommendations 58

5.1.1 Debrief Methodology 58

5.1.2 Emotions 60

5.1.3 Overall Simulation Debrief Experience 60

5.1.4 Study Year Specific Experience 61

5.2 Conclusion 62

References 64

Appendices 70

Appendix A: Ethics Clearance Letters 70

Appendix B: Interview Guide 72

List of Figures

Figure 2.1, *Application of Braun and Clarke's six-step approach to data analysis* 20

Figure 3.1**,** *Codes, Sub-Categories and Categories as part of Braun and Clarke 6 steps, adapted from Braun and Clarke, 2006*……..21

Figure 3.2, A *Thematic Map detailing the relationship of the themes with the overall theoretical framework for interpretation of the study findings (adapted from Braun and Clarke, 2006)*..... 22

List of Tables

Table 3.1, *Deductive Codes, and Categories extracted from literature for the Themes developed as part of Braun and Clarke's 6 steps,* 24

Abbreviations

BHSc EMC - Batchelor of Health Science in Emergency Medical Care

ECP - Emergency Care Practitioner

ED - Emergency Department

ELT - Experiential Learning Theory

EMC - Emergency Medical Care

EMS - Emergency Medical Services

HEI - Higher Education Institution

HPCSA - Health Professions Council of South Africa

ICU - Intensive Care Unit

NQF - National Qualifications Framework

OSCE - Objective Structured Clinical Examination

SA - South Africa

SBME - Simulation Based Medical Education

Sim Lab - Simulation Laboratory

Sims - Patient Simulation

TA - Thematic Analysis

TL - Theory Lecture

UJ - University of Johannesburg

CHAPTER 1

1 Introduction and literature review

1.1 Introduction

This paper is an account of a descriptive study on debriefing of patient simulations conducted on a group of Emergency Medical Care (EMC) students at the University of Johannesburg (UJ). The study explored the experiences of final year students in patient simulation debrief, a component of Simulation Based Medical Education (SBME), through the use of face to face interviews.

The field of emergency medical services (EMS) in South Africa (SA) recognises a variety of qualifications, some aligned to the national qualification framework (NQF) and others not. The NQF aligned qualifications are offered by Higher Education Institutions (HEIs) and the non NQF aligned are mostly offered by the private and public ambulance colleges. In 2016, the Minister of Health, Dr. A. Motsoaledi signed the promulgation for closure of non NQF aligned EMS programs thus resulting in all EMS qualifications being NQF aligned (South Africa, Department of Health, 2017).

A Bachelor's degree in emergency medical care (BHSc EMC) is an undergraduate degree aligned to the NQF and offered by numerous HEIs including the UJ. This program is a full time study course offered over a minimum period of four (4) years, pitched at an NQF level 8. Upon successful completion of this degree the graduate is eligible to register as an emergency care practitioner (ECP) with the Health Professions Council of South Africa (HPCSA). In this paper we will refer to these ECP as paramedics.

Within their education system, paramedic students are exposed to various pedagogical approaches ranging from theory lectures (TL), Objective Structured Clinical Examinations (OSCE) including patient simulations (Sim). The variety in pedagogy assists in creating meaningful learning opportunities for paramedic students. This approach to teaching and learning is adopted on the BHSc EMC program, offered at the UJ.

The nature of the EMS profession is predominately skills orientated. The programs and curricula designs for most EMS qualifications still makes emphasis on more time spent on practical exposure as compared to theoretical classes. One of the approaches adopted by institutions to bridge the theory-practice gap is the use of SBME.

UJ, department of EMC has a state of the art simulation laboratory (Sim Lab) used during SBME. This Sim Lab, is used for both classroom practical and assessment SBME. The Sim Lab is designed to resemble multiple clinical areas ranging from the ambulance patient compartment, hospital emergency department (ED) and hospital intensive care unit (ICU) etc. High and low fidelity manikins are used in the Sim Lab including all diagnostic and emergency lifesaving equipment needed to train students in the performance of emergency skills and procedures. The entire area in the Sim Lab is capable of video recording.

Students are expected to perform simulations in teams and mostly in pairs with one student role playing a qualified paramedic and the other an assistant. The facilitator role plays the patient prompter and manikin controller. During classroom practicals, other students are expected to observe the performance of the students managing the patient simulation either as direct observers or via a video feed, while during assessment simulation the students do not observe the performance of others, however assessors grade and score the performance of students. The observation of assessors can be directly or through a video feed. Post classroom practical simulation activity, students are debriefed as part of SBME.

The current practise at UJ is that, at the end of the classroom practise patient simulation, the class conducts a post-simulation debriefing activity, which is led by the facilitator and the observing students are afforded an opportunity to comment on observed actions and/or omissions. The assessment patient simulation debriefing is a one-on-one, facilitator/student meeting limited to low performing students and conducted on an appointment basis approach. The EMC department mostly practice post-simulation debriefing, conducted face to face. Even though facilitators are expected to debrief students during classroom practise and assessment patient simulations, no formal training is afforded to staff at UJ for patient simulation debriefing practises.

The Paucity of published research in South Africa within the EMS settings exploring the use SBME in achieving the desired competencies for paramedics as recognised by the profession creates an opportunity for a descriptive qualitative study to be conducted. The exploring of

EMC students' experiences in the simulation debrief, a component of SBME is a project that is intended to contribute to the local body of knowledge on the debriefing experience in students' learning and also to form the basis for future research.

1.2 Study Aim and Objectives

Aim:

The aim of the study was to explore the experiences of UJ paramedic students in debriefing of patient simulations activities.

Objectives:

1. To describe the experiences of UJ paramedic students in debriefing of patient simulation based activities.
2. To identify recommendations for enhancement of learning opportunities in the debriefing activity.

1.3 Background and Terminology

1.3.1 Simulated Training

Simulated training is an educational technique that allows interactive and at times immersive activity by recreating all or part of a clinical experience without exposing the patient and the student to all associated risks (Maran and Glavin, 2003; Williams, et.al, 2016). As the complexity of medical training has progressed, with large increase in student numbers, it was deemed unsafe and unethical for patients to be exposed to the traditional apprenticeship style of clinical skills learning, that was historically used for medical students.

The term simulated is used to describe that reality is reproduced using artificial, controllable learning environment that closely resembles reality (Maran and Glavin, 2003; Williams, et.al, 2016). The simulated learning environment can be achieved by the use of simulator manikins that can range from low to high level fidelity (Hartwell, et.al, 2014; Williams, et.al, 2016). The term fidelity is better described as the extent to which a simulator or simulation matches the appearance and behaviour of the realistic environment and systems (Hartwell, et.al, 2014; Maran and Glavin, 2003; Williams, et.al, 2016). Fidelity can further be sub-divided into engineering/physical fidelity and psychological/functionality fidelity (Maran and Glavin,

2003). Engineering fidelity refers to the degree in which the training device or environment resembles the physical characteristics of the real task and psychological fidelity regards the degree in which the skills in the real task is represented by the simulated activity. Simply elaborated, low fidelity simulations will mostly use low technology manikins in order to replicate simple skills e.g. intravenous cannulation. High fidelity simulations will mostly use high technology manikins in order to replicate complex training activities e.g. patient simulations activities.

Even though patient simulated training intends to bridge the gap between teaching, learning and real clinical practice (i.e. theory/practice gap) in preparation of learners to face the real clinical practice world, the use of manikins whether low or high fidelity is only one aspect thereof. The additional components that are deemed essential to create a holistic teaching and learning environment for meaningful learning opportunities incorporate the use of feedback, debriefing and deliberate/ repeated practice (Hartwell, et.al, 2014; Williams, et.al, 2016).

1.3.2 Feedback versus Debriefing

Provision of feedback as part of patient simulations is a common practice within the field of EMC education and training. Feedback is defined as providing specific corrective information regarding observed performance gaps to participants either during or after the simulation activity for future improvements (Sawyer, et.al, 2016; Burns, 2015; Voyer and Hatala, 2015; Van der Ridder, et.al, 2008; Eppich and Cheng, 2015; Motola, et.al, 2015). Feedback may be provided in various forms i.e. oral face to face, written and video recording play back (Motola, et.al, 2015). Feedback in relation to patient simulation intends to afford an opportunity for the instructor to inform the student/s about his/her errors including how they can be corrected, in order to change future thinking and/or practice.

The afore stated feedback definition highlights "*providing specific corrective information*" as the key focus while being silent on the exploring of the participant cognitive domain which is closely linked to these observed activities. Sawyer et.al,(2016) also make mention of feedback as a unilateral activity where the provider of feedback focuses on correcting the participant, not creating an environment conducive for dialogue, thus creating a teacher centred learning environment. As a learning exercise, one-way post-event correction (with no opportunity for the student to interact, reflect and re-try the skills) is deficient for a holistic learning opportunity.

Simulation debriefing in contrast to feedback, is defined as a reflective practice that supports constructive, continuous learning (Sawyer, et.al, 2016; Burns, 2015; Jaye, et.al, 2015; Voyer and Hatala, 2015). The definition is further expanded by these authors as an interactive, conversation which involves some level of facilitation/guidance by the authority figure and/or other observing or participating students during or after the patient simulation activity. Patient simulation debriefing includes elements that were identified as deficiencies in the feedback model. These crucial elements include reflection and conversation (Sawyer, et.al, 2016; Burns, 2015; Voyer and Hatala, 2015).

1.4 Literature Review: Debriefing of patient simulation activities

Out of all components of SBME, debriefing is the most important aspect that strengthens learning from an experience (Fanning and Gaba, 2007; Kelly, et.al, 2014; Levett-Jones and Lapkin, 2014; Ali and Musallam, 2018; Eppich and Cheng, 2015). Motola, et.al, (2015) refer to simulation debriefing as "*the heart and soul of SBME*". Debriefing is introduced as a guided discussion and analysis of an experience, evaluating and integrating lessons learned into one's cognition and consciousness for future practice. Debriefing provides an opportunity to explore and reflect on simulated event/s or experience, discussing it holistically and identifying future improvement practice plans (Fanning and Gaba, 2007; Gardner, 2013; Eppich and Chang, 2015; Ali and Musallam, 2018).

Eppich and Cheng, (2015) identified the essential elements for simulation debrief to be 1) active participation beyond the receipt of passive feedback, 2) intentional focus development on learning and improvement, 3) discussion of specific events including 4) inputs from multiple sources. These elements gives simulation debrief the strong learning focus it offers.

Sawyer, et.al (2016); Gardner (2013); Fanning and Gaba, (2007), agree that debriefing as part of simulation based medical education (SBME) was adopted from other fields of study e.g. the army and aviation. Historically the army initially adopted the use of feedback to convey specific information about observed performance compared against a particular standard, however feedback largely focused on negative aspects and it was poorly received by members of the military. Holding debriefing at a higher regard as compared to feedback due to its ability

to better improve performance dates as far back as World War II (Gardner, 2013; Fanning and Gaba, 2007).

Debriefing within the army and other fields was mostly based on facilitated group discussions with set objectives for performance indication, in a non-punitive atmosphere that fostered self-reflection and learning from each other (Gardner, 2013; Fanning and Gaba, 2007). Rudolph, et.al (2014); Fanning and Gaba, (2007), expand on the non-punitive atmosphere as a psychologically safe learning space that must be established for students to have a conducive environment for learning. The facilitator must commit to respecting the students views to foster a safe space for conversation. As part of debriefing, a group member who is the facilitator, helps others to analyse the observed performance, he/she further guides the group in extrapolating and applying lessons learned for future situations while promoting active participation by all through a guided discussion (Gardner, 2013; Rudolph, et.al, 2014; Fanning and Gaba, 2007). Studies have shown that effective debrief can result in an increase organisational and individual performance (Tannenbaum and Cerasoli, 2013; Shinnick, et.al, 2011; Boet, et.al, 2013; Van Heukelam, et.al, 2010). In a quantitative descriptive study conducted by Kelly, et.al, (2014), looking into the components of SBME most valued by nursing students due to their importance in supporting clinical judgement, facilitated debrief followed by post-simulation reflection was highly rated. Cheng, et.al (2016) adds to the discourse by stating that learner centred debrief supports students learning and long term retention of knowledge.

Even though debriefing is an import aspect of SBME and has been aligned with increased learning and performance, Fanning and Gaba, (2007) do warn that if the environment created during debriefing is not conducive it has the possibility of regressing students future learning and performance.

1.4.1 Methods of Debriefing

Dieckmann, et.al (2009); Voyer and Hatala (2015) refers to two types of debrief approaches i.e. post-scenario and during-scenario debriefing. Post-scenario debriefing happens after the actual experience while during-scenario debriefing happens while the experience is still active (Dieckmann, et.al, 2009; Voyer and Hatala 2015). Sawyer, et.al (2016) expands on the post-scenario debriefing being guided by either the facilitator or learners themselves and during-scenario debriefing being guided by the facilitator. The relationship between when to debrief

and who debriefs results in three general debriefing methods: 1) facilitator guided post-event debrief, 2) self-guided post-event debrief and 3) facilitator guided within-event debrief (Sawyer, et.al, 2016; Burns, 2015).

Facilitator guided post-event debriefing is reported to be the most commonly used approach. Facilitator as the debriefer fulfils the role of guiding the conversation between participants ensuring that learning objectives are met and the simulation event is discussed as per observations (Sawyer, et.al, 2016; Burns, 2015; Fanning and Gaba, 2007). In contrast to facilitator guided post-event debrief, for self-guided post-event debrief, participants conduct the process of debriefing in the absence of a facilitator, making use of cognitive aids to guide the discussions (Sawyer, et.al, 2016). These cognitive aids can be predetermined simulation objectives including discussion points and predetermined protocols. Facilitator guided within-event debriefing purely focuses on participants redoing certain skills post corrective feedback been provided, a concept referred to as deliberate practice (Dieckmann, et.al, 2009; Sawyer, et.al, 2016).

Scholars mutually agree that there is no universally accepted golden standard when it comes to structuring SBME debriefing (Gardner, 2013; Fanning and Gaba, 2007). Lederman (1992) has identified seven key structural elements for debriefing which includes: 1) debriefer, 2) participants to be debriefed, 3) an experience i.e. simulated case, 4) the impact of experience, 5) recollection, 6) report and 7) time.

The identified structural elements are further elaborated as follows: 1) the debriefer is the person responsible to facilitate debriefing, 2) participants are the learners partaking on the scenario and the observers, 3) an experience is the structured and well-designed patient simulation or real case, 4) the impact of experience relates to the emotional, stressful, anxiety or elating experienced by the participants, 5) recollection relates to activities undertaken during the simulation 6) report refers to a formal documentation that must be completed i.e. survey, patient report forms or questionnaire etc. and 7) time refers to the period that lapses between the end of the case/simulation and initiation of debriefing (Lederman, 1992).

The debriefer and the debriefed are role players within the debriefing activity. Simplified these role players represent the facilitators and learners respectively. Fanning and Gaba (2007) and Dismukes, et.al (2006), highlight the need for facilitators to position themselves as co-learners

in a debrief activity instead of being experts and authority figures, this approach supports the learner centred learning model synonymous with debriefing.

Furthermore, a facilitator to be an effective debriefer should neither be harshly nor falsely judgmental, berate nor sugar coat or camouflage students' performance, but should rather be clear, honest, critique in a respectful way and be curious about the learners' perspective (Rudolph, et.al, 2008).

Learners must assume an active learning role with the skills set to critically analyse their own performance retrospectively, beyond event re-calling but including analysis and rationalising such actions and omissions while contributing actively to the learning process for themselves and others (Fanning and Gaba, 2007; Dismukes, et.al, 2006).

The commitment to learning and co-learning by role players during the debriefing activity, leads to the expected degree of active involvement during the activity. An approach adopted from the aviation industry makes reference to 1) High facilitation, 2) intermediate facilitation and 3) low facilitation (Fanning and Gaba, 2007). High facilitation refers to a debrief situation where the learners largely self-debrief with the facilitator gently guiding the debrief process and discussion, while intermediate facilitation the is an increased facilitator involvement which may include assistance with analysis of experience, however the learners still have some degree of autonomy in discussions, lastly with low facilitation, the facilitator guides the team through the debrief experience and he/she is more involved in debriefing with minimum group independence.

In addition to structural elements identified by Lederman, (1992), Sawyer, et.al, (2016) makes reference to conversational structures used mostly during facilitator guided post-event debriefing, these structures are employed to ensure that debriefing is broken up into phases that guide the conversation from beginning to the end in an arranged manner. A variety of conversational structures being used in SBME have been identified which ranges from three (3) phased to multiple phased conversational structures (Sawyer, et.al, 2016).

The aim of debriefing is to guide the participants into analysing and understanding what they thought, felt, performed and omitted during a simulation activity in order to improve future performance (Rudolph, et.al, 2008). The three phased conversational structure approach will be adopted and discussed in this paper as presented by Rudolph, et.al, (2008) and Sawyer, et.al,

(2016) as it is user friendly. The three phased conversational structures is composed of: 1) the reaction phase, 2) the understanding/ analysis phase and 3) the summary phase.

The reaction phase affords the learners the opportunity to express their emotional reaction to the simulation and the facilitator the opportunity to provide facts underlying the simulation in order to clear any confusion the learners might have had (Rudolph, et.al, 2008). Sawyer, et.al, (2016) states that the reaction phase occurs immediately after the simulation has ended and the learners have assembled for a post-simulation conversation.

The understanding or analysis phase is the heart and soul of simulation debriefing and it also supports learning. This phase allows the debriefer to learn about what happened from the perspective of the participant/s and the debriefer probes deeper to explore the participant/s frames of reference (Rudolph, et.al, 2008; Sawyer, et.al, 2016). Advocacy enquiry is a technique used during this phase as it promotes conversational transparency and minimizes guess work (Sawyer, et.al, 2016). The advocacy aspect of this technique creates the opportunity for the participant/s to voice their views, thoughts, emotions and judgment in promoting a particular action or omission, while the enquiry aspect affords an opportunity for the debriefer and/or other observing participants to ask key questions based on the advocacy and/or their observations promoting a productive transparent conversation (Sawyer, et.al, 2016).

Under the summary phase, the debriefer and participant will review the lessons learned and reduce them to practical memorable concepts that the participants can take into their daily practice. The debriefer must ensure that through advocacy enquiry the participants identify what they have learned from the simulation and how this will change their future daily practice (Rudolph, et.al, 2008; Sawyer, et.al, 2016).

Jaye, et.al, (2015), presents a guiding illustration for the 3 phase approach conversational structure. Jaye and colleagues work covers the aspects from the traditional 3 phased approach, however extends it with scaffolding for novice debriefers by adding leading questions and reminder points to guide the conversation better. The essence of the approach was to promote a consistent practice to simulation debriefing by both novice and experienced debriefers within faculties. The use of a script during simulation debrief improves performance for both novice and experience debriefers (Sawyer, et.al, 2016; Jaye, et.al, 2015; Garden, et.al, 2015).

Patient simulation debrief is a pedagogical competency that needs to be acquired by the facilitators. Faculty development is key to improving proficiency in debriefing skills for facilitators. Cheng, et.al, (2015) defines faculty development as a range of interventions that an institution use to capacitate faculty members in execution of their duties. Fanning and Gaba, (2007); Cheng, et.al, (2015), make reference to multiple approaches that faculties can adopt in order to develop facilitators which may include formal and informal courses in simulation debrief offered to faculty members. The complexity of these courses can be structured for basic and advanced competencies thus allowing growth within the practice (Fanning and Gaba, 2007). Mentoring for novice facilitators by pairing them with experience debriefers creates an environment where the novice can learn from the experienced mentor and the experienced mentor can role play for the novice to appreciate the holistic experience while creating a supportive environment for both facilitators (Fanning and Gaba, 2007; Cheng, et.al, 2015). Faculty development has been found to improve individual competencies of staff including a positive influence of cultural change within organisations (Cheng, et.al, 2015).

Structural elements and conversational structures aligns with the face to face individual or group oral debriefing methods. Fanning and Gaba (2007), highlights other methods to simulation debriefing which includes self-debriefing, video play-back and video based debriefing. Self-debrief allows the participants to self-critique, a practice that seems to create an inaccurate assessment of performance as majority of the learners when asked to self-debrief either become too lenient and exaggerate on their performance or too critical and under credit themselves (Fanning and Gaba, 2007; Boet, et.al, 2011). Self-debrief is a method that needs to be developed overtime with the facilitator guiding the students and being heavily involved in the beginning of the practice. The use of video playback and video debrief relies a lot on access to technology and is the most expensive method stated Fanning and Gaba (2007). Even though financially demanding, the use of video playback and video based debriefing has documented advantages that support debriefing even though studies show that there is no added learning advantage when video is used as compared to traditional debrief methods (Sawyer, et.al, 2016). Video playback allows the learners to re-watch the simulated activity and use that to self-debrief while video debriefing affords the facilitator an opportunity to have a debriefing session without a face to face interaction between the role players who might be in different locations (Fanning and Gaba, 2007; Sawyer, et.al, 2016).

1.4.2 Debrief Reflection and performance improvement

Reflection is the cornerstone for experiential learning while debriefing is a guided reflection practice (Dieckmann, et.al, 2009; Taylor and Hamdy, 2013; Burns, 2015). Experiential learning is learning by doing, thinking about doing and assimilation of lesson learned into everyday practice (Fanning and Gaba, 2007; Dieckmann, et.al, 2009). Making sense of the experience in terms of your own world is the epiphany of experiential learning and the foundation of reflection (Fanning and Gaba, 2007).

Kolbs' theory of experiential learning cycle makes reference to 4 phases that are paramount to a complete experience i.e. concrete experience, reflective observation, abstract conceptualisation and active experimentation (Kolb, 1984). Reflective observation ensures that the experience is translated into a meaningful encounter that assimilates into knowledge gained. Reflective practice is not a natural process for all learners, thus debriefing allows for such engagement to guide the process and create the practice (Taylor and Hamdy, 2013; Fanning and Gaba, 2007; Burns, 2015).

The supporting argument on the outcomes from multiple studies comparing instructor led debrief to other forms of debrief including but not limited to self-debriefing, fundamentally depends on the instructor being able to guide the students better during the reflective observation phase of the experience (Boet, et.al, 2011; Dufrene and Young, 2014). Sandars (2009) defines reflection as "*a metacognition process that creates a greater understanding of self and situation so that future actions can be informed by this understanding*". This definition is in-line with Donald Schön's (1991) documented understanding of making the tacit knowledge explicit in order to examine it for future application beyond the prescribed context (Lavoie, et.al, 2013).The need to reflect and have a discourse as part of simulation debriefing is an important dimension to SBME as it supports learning (Kihlgren, et.al, 2015; Levette-Jones and Lapkin, 2014; Ali and Musallam, 2018; Fanning and Gaba, 2007).

Schön (1991) identified 2 types of reflection i.e. reflection in-action and reflection on-action. Reflection in-action refers to thinking while doing and reflection on-action is thinking after doing. Mann and MacLeod (2009), state that reflection and reflective practice are important capabilities in health care as the professionals function in a forever changing environment due to complex patients and health care challenges. Reflection in and on-action, both approaches resonates with the EMC practice as the field is very unpredictable and paramedics will have to

continuously be thinking about their actions while still managing a patient and also do a post treatment reflection after servicing the call.

Simulation debriefing as part of SBME is well documented, extending from the historical origins to the recommended practice and approaches to conducting it (Fanning and Gaba, 2007). However, most of this research has been conducted on nurses and medical students. In the field of EMS even though SBME is part of the curricula, there is a paucity of primary research focusing on patient simulation debriefing. Therefore studies exploring any aspect of SBME adds to the body of knowledge. In my study I explored the experiences of paramedic students in patient simulation debriefing. I envisage that the outcomes of this study will provide insight to the practices of patient simulation debriefing from a leaner experience perspective and thus enhance SBME in the field of EMC in higher education, specifically for UJ EMC students and teaching staff.

CHAPTER 2

2 Methodology

2.1 Research Question

This study explored the research question:

What are the experiences of paramedic students at the University of Johannesburg in the debriefing of patient simulation based activities?

2.2 Researcher positionality

Creswell (2014), states that qualitative research is an involved research, it requires the enquirer to be in close relations with the participant/s and their experiences. Maree (2013) also expands that qualitative studies recognise researcher subjectivity as something that cannot be ignored and sees the researcher as a data gathering "research instrument". In this study, I was the primary data collector, thus a description of my prior experience and perspectives is important in considering my influence during collection and analysis of the study data.

Bracketing or reflexivity in qualitative studies, is an explicit reflective activity continuously conducted by the researcher. The researcher explicitly documents how his/her background, perception, beliefs and assumptions relate to the study including how his/ her presence as a "research instrument" may affect the study findings (Creswell, 2014).

Bracketing is not limited to the initial declaration of researchers' biases at the beginning of the study, it is a continuous process that the researcher actively engages with even when analysing data and discussing findings (Fischer, 2009). Bracketing raises researcher self-awareness and enhances how the researcher engages with the study data to ensure accurate analysis and reporting (Fischer, 2009).

In this study, I bracketed my experiences as follows: I am currently a practicing paramedic educator. I am an alumnus of UJ and studied as an undergraduate over a decade ago. I have experience as a paramedic student and was debriefed on patient simulations during my undergraduate studies at UJ. While I was a student at UJ, my experience was that whilst feedback was provided to learners by the lecturer following simulation activities, comments mainly focused on mistakes and omissions during the activity, rather than holistic debriefing of the event. I noted that, as a learner my emotional and psychological reactions were seldom focussed on, including the probing of rationale for my actions and/or omissions. The lecturer predominantly led the feedback sessions, while other learners were asked to add on what the lecturer might have missed. The feedback sessions did not have any formal structure that was applied consistently. Even though the correct patient management including highlighting of students' errors was done by the lecturer, it was seldom that I understood the lecturer rationalisation thereof. While I was an undergraduate paramedic student at UJ, I perceived doing patient simulations as a burden, however had to subject myself to the activity as it was necessary to practise in front of a lecturer. When I discussed with fellow classmates during those days, the feeling was mutual across my peers. This is my perception with regards to patient simulation debriefing at UJ while I was an undergraduate paramedic student.

My experience as an undergraduate paramedic student at UJ in patient simulation debriefing and my present knowledge of the role of debriefing as part of SBME has created a dichotomy for me between experience and current knowledge, however I acknowledge that it has been over a decade since I was an undergraduate learner at UJ. I am also aware that, as an HEI, UJ continuously seeks to improve teaching and learning experiences through research and evidence based approaches. I was therefore interested in investigating the current lived experiences of UJ paramedic students in patient simulation debriefing, a decade after my own experience.

Fischer (2009), emphasises that, the idea of bracketing/ reflexivity allows the researcher to be self-aware, it also ensures that the researcher works with a co-coder or co-researcher who ensures that the researcher refrains from imposing data to fit in his own frame of reference but allows data to naturally emerge as either confirming or disputing the researcher perspective. In conclusion, I (as the researcher) bracketed my perspective and worked with a research supervisor as a co-researcher and co-coder. I was continuously aware of my own experiences in relation to the project data and my co-researcher oversaw that I did not impose a bias in

drawing meaning from the data however it emerged. The afore stated approach was done to ensure quality data analysis and accurate findings for this study.

2.3 Research Paradigm

A research paradigm is the world view that a researcher uses to inform his/her undertakings in a study. The choice of research paradigm is strongly influenced by the researcher's beliefs and preferences and influences the type of study conducted (Creswell, 2014). In this section I will explore various paradigms and further elaborate on the choice adopted in this study.

A positivist paradigm, is referred to as the scientific approach that intends to investigate cause and effect without the researcher being a subject of the enquiry. This approach is seen as objective, with no manipulation of the studied phenomenon variables since the researcher remains "outside" of the experimental field and data is collected through measurement or direct observation (Krauss, 2005). In this paradigm, researchers are inclined to conduct quantitative studies and report on empirical data.

In direct contrast is the constructivist approach. Researchers that operate within this paradigm believe that there is no one reality but multiple realities based on how people view and make sense of the world (Krauss, 2005). The constructivist approach is mostly adopted within the social sciences field and it tends to be associated with a qualitative research approach, which focuses on understating how people make meaning of their world as they experience it.

A post-positivist approach is less ephemeral than the interpretivist paradigm of multiple realities, researchers developed an approach known as "critical realism". Realism is a paradigm that pivots around the view that people are individuals with subjectivity however affected by similar environmental impacts that allows them to perceive the same things differently i.e. multiple perceptions of single reality (Krauss, 2005).

In this study a realism approach was adopted which is in-line with the research question, since the study was concerned with students' varied experiences of one aspect of their programme delivery.

2.4 Research Design

This study used a qualitative descriptive approach. Sandelowski (2000), defines qualitative descriptive methodology as a fundamental type of qualitative research, which intends to present the facts of phenomena in everyday language. A qualitative descriptive approach is suitable in obtaining straightforward and largely simple answers to questions of special relevance to researchers, using language that is very close to the participants own everyday words.

Whilst the reduced scope of a research report favours such straightforward methodology, analysis of the qualitative descriptions of the participants' actual (lived) experiences of patient simulation debriefing in their course was guided by a more nuanced phenomenological approach. Phenomenology is defined by Creswell (2014), as a type of qualitative research approach where the researcher describes the lived experiences of individuals about a particular phenomenon as accounted for by the participants. Since this is a research report, a deep, phenomenological analysis was not explored, but its' principles guided the development of recommendations for practice following the research.

The phenomenological methods involved in this enquiry included the use of face to face interviews with participants, using open ended questions in the interview guide regarding the lived experience of participants on patient simulation debriefing, and documentation of the physical environment, available equipment, interpersonal interactions, and attitudes of the students. Data analysis using the principles of phenomenological approach included the analysis of significant statements from participants (coding), generating meaning (categorising) and developing essence description (theming), (Creswell, 2014).

The qualitative descriptive approach applied in this research was an appropriate method to explore the experiences of the paramedic students in simulation debrief at a straightforward level, especially in light of research paucity within the field of EMC pedagogy.

2.5 Population and Sampling Strategies

2.5.1 Population

All final year (4th year) registered BHSc EMC students for the 2018 academic year were considered to be the study population, totalling 19 students. The inclusion criteria for the study were: 1) current registration at UJ, 2) final year BHSc EMC students i.e. 4th year, 3) previous participation in patient simulations activities as either team leaders or partners and 4) previous

participation in patient simulation debriefing session with a facilitator post patient simulation activity.

The focus on final year students facilitated the opportunity to explore the lived experiences of students across their entire journey of studies i.e. 1st to 4th year.

2.5.2 Sampling Strategy

Qualitative study allows for the use of purposeful sampling, which means that the participants are selected based on a common defining characteristic that makes them the holders of data suitable for the enquiry (Maree, 2013). Creswell (2014) comments that for qualitative research, purposeful sampling renders the researcher better positioned to attain answers to the research question and problem.

All participants who met the inclusion criteria were invited to take part in the study. A class meeting was held with the final year BHSc EMC students, where the study was explained and all interested students were invited to participate. Nineteen students attended the class meeting where they were given written information on the study and signed consent forms to participate and be audio recorded

2.5.3 Sample Size

All participants who met the inclusion criteria were regarded as the sample group. Creswell (2014) advocates that, for a qualitative study the researcher can interview 3 to 10 participants as the sample group or until saturation point is reached. Saturation point is defined as a collection of data by the researcher until no new themes emerge from data collection process (Maree, 2013).

Although a larger than the recommended sample size for qualitative research, all 19 volunteers were included in the sample group for several reasons: Firstly, being a novice in this research methodology, I felt that I was improving my interview techniques with experience, and that I may not have elicited the full range of possible experiences from the first few interviews. Secondly, there was such enthusiasm in the class to participate in the research that I did not want to privilege some students by allowing them to participate, at the expense of others who also wanted to share their views. Finally, I wanted to include a diverse range of ideas and

opinions, and felt that the larger sample size would assist in developing this richly detailed data set.

2.6 Data Collection

Permission to conduct the study was obtained from both the Human Research Ethics Committee of the University of the Witwatersrand and the Faculty of Health Sciences Research Ethics Committee of the University of Johannesburg. Qualitative research requires that rich, detailed and documented data from the first person point of view be collected, (Hutchison and Cochrane, 2014; Sandelowski, 2000). The conducted semi-structured interviews were approximately 20 minutes per participant. A semi-structured interview guide was developed to use during interviews, which had a combination of open ended and a few closed ended questions. The guide was used to give shape to the discussions and allow for consistency between interviews and as a memory aid for the novice qualitative researcher **(Appendix B)**.

All interviews were audio recorded with the permission of participants. Transcripts were developed verbatim and all participants were given the option of reading the transcripts for actual and intended meanings (doing member checking) if they were interested. The participants were reassured by the researcher that all the recordings would be kept confidential and the transcripts would be anonymised by allocation of participant numbers to denote participant responses in the text. According to the ethics committee protocol, recordings will be kept in a locked location (password protected) and will be destroyed after 6 years, or after two years if the study is published as a journal article. All interviews were conducted at the UJ, Doornfontein campus for the convenience of the participants. The interviews were conducted in a suitable room, away from the training area, from which responses to interview questions could not be overheard. Where participants did not honour the interview meeting a rescheduling was arranged if the participant was still keen to continue participating in the study.

2.7 Data Analysis

Content and thematic analysis are classified under the qualitative descriptive design as techniques used to analyse textual data and develop themes (Mojtaba, et.al, 2016).

Elliot and Timulak (2003), state that the first step to data analysis is preparation and they advocate for the use of different fonts for field notes, researcher views and observations including participants' views during the interview process. For this study, all the audio taped

data were manually transcribed verbatim and prepared as per Elliot and Timulak recommendations.

The Data analysis strategy used in this study was Thematic Analysis (TA) according to the method of Braun and Clarke (2006). TA is a data analysis method that is used to identify, analyse and report patterns within a data corpus. This approach to qualitative data analysis is not restricted to any pre-existing theoretical framework and is therefore a suitable method, congruent with the realist interpretive lens of this research.

The researcher adopted the deductive/ theoretical approach as part of TA. Braun and Clarke (2006) describe deductive TA as a theme identification approach that is rooted on the knowledge that the researcher has acquired in relation to the research enquiry. This data analysis approach provides less rich description of data but more detailed analysis of certain aspects of data.

Semantic theme identification focuses on the superficial/explicit level of theme identification as expressed (in words) by the participant. The researcher doesn't interpret data beyond what is made explicit by the participant (Braun and Clarke, 2006). In this study, the researcher used previous literature within patient simulation debriefing, to guide development of categories and semantically develop themes (as explained in Table 3.1 in the next Chapter).

In summary, the researcher in this study adopted Braun and Clarke's (2006), 6 step approach to TA. By coding data using the deductive approach and developing themes using the semantic approach. The diagram below (Figure 2.1) denotes how this analysis was implemented.

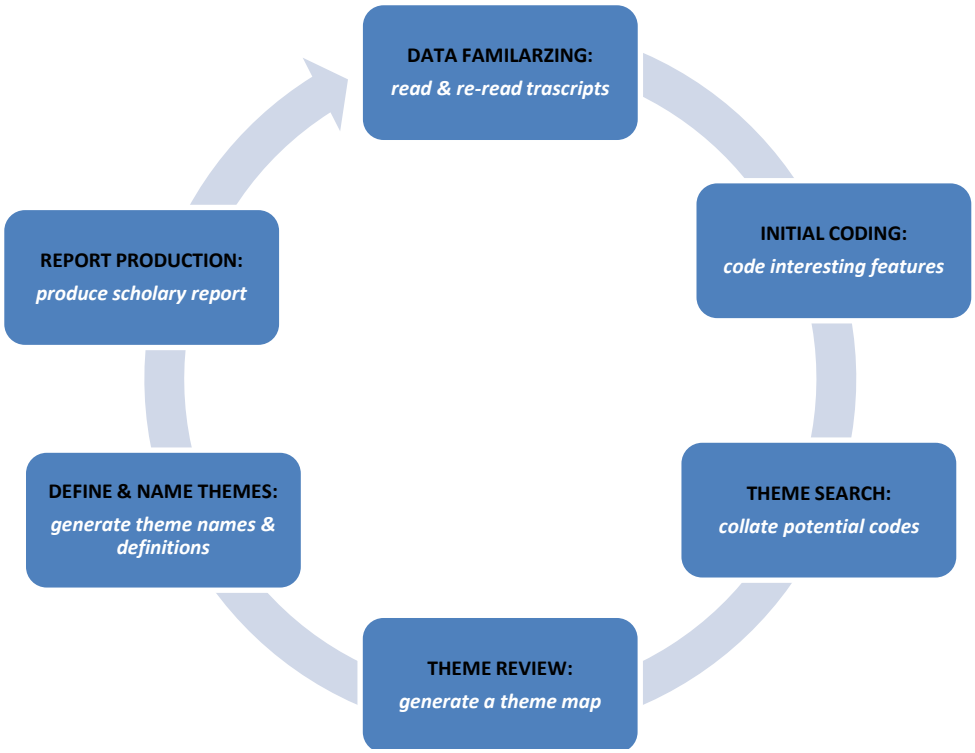

Figure 2.1 *Application of Braun and Clarke's six-step approach to data analysis (adapted from Braun and Clarke, 2006)*

2.8 Trustworthiness in qualitative Research

Guba (1981) defines trustworthiness in qualitative research as consisting of credibility, dependability, confirmability and transferability, where credibility is developed by showing that the research indeed answers the questions posed; dependability refers to the likelihood of similar data arising from similar project methods; confirmability is the degree to which the data collected is a true reflection of the naturalistic environment in which the project is situated; and transferability is the extent to which the findings of the project can be applied to other contexts.

In this project, credibility was developed by an investigation of previous literature to guide question development and to frame findings; choice of a well-documented and appropriate research methodology; training of the researcher in interview techniques including iterative questioning; reflective statement of positionality of the researcher, including familiarity with the culture of the research site; availability of member checking if required and the choice to code data individually between researcher and supervisor, before collaboration on development of themes. Dependability was ensured by the careful documentation of methods employed in the study. Confirmability was addressed by the researcher's confrontation of his own bias in the positionality statement, a recognition that there are shortcomings in the study and a clear description of research process which led to data extraction. Transferability could be achieved

since the context of this study is clearly described and the nature of the research question is straightforward – leading to its possible application in other environments.

2.9 Limitations of this study

The following aspects are identified as limitations to the study:

1. Only 4th year students were interviewed, rather than interviewing students in each year of study – It was assumed that this group would be able to recall their study journey spreading across a minimum of 3 years, and this would result in a more detailed data set than interviewing students who had not had such a range of experiences.
2. Since the research relied on participants' perceptions, the possibility that participants' recall of phenomena was not accurate should also be viewed as a limitation of the work.
3. Only one program in one university was investigated– which could limit the generalizability of the findings, however developing an in-depth understanding of one programme could contribute to enhancement of that specific environment.
4. Students were the only participants–facilitators were not interviewed, thus no inferences can be made about the perspectives of facilitators concerning simulation debriefing.
5. Interviews were conducted in English and may have constrained the full range of expression of non-English first language speakers.

CHAPTER 3

3 Data Analysis

Burnard, et.al (2008), alludes to two types of approaches a researcher can adopt when analysing textual data, as either deductive or inductive. The deductive approach allows the researcher to code and analyse data using a pre-determined schema while an inductive approach relies on the researcher developing codes from the data without any preconceptions.

As part of a critical realist approach, the interview guide used to elicit students' perceptions was developed from available literature on patient simulation debriefing practice (**see Annexure B**). The literature was also used as a basis to facilitate deductive coding and categorising of data, (***see table 3.1***.)

Coding refers to identification of interesting and meaningful narrative stated by the participant in relation to the research enquiry (Sutton and Austin, 2015). Qualitative data analysis is interactive and allows the researcher to continuously modify coding systems in order to accommodate new emerging data (Sandelowski, 2000). In this project, data analysis was initiated with a pre-determined set of codes (As detailed in Table 3.1) however additional codes were added as necessary when they arose in the data.

All interview recordings were transcribed verbatim. Manual coding of the data was done separately by the researcher and the research supervisor, and consensus was achieved on the codes, categories and themes to be adopted post discussions and rectifications. The use of a co-coder limits researcher bias and thus increase trustworthiness of data analysed. Sutton and Austin (2015) advise that there is no statistical approach that can be used to validate or check reliability of qualitative research analysis and recommends the approach where more than one person codes data, which enhances credibility of data analysis.

Codes were then grouped into nine categories, whilst ensuring that the grouped codes that represented each category had participants' own quotes that were representative of these identified categories. Maguire and Delahunt (2017), advocate for this afore stated approach,

which is in line with step 3 of Braun and Clarkes' 6 step TA approach. From the 9 categories identified, 3 themes emerged, ***see table 3.1 and Figure 3.1.***

a. Debrief methodology
    i. Refers to components deemed necessary to be in place for an effective patient simulation debriefing to be conducted.
b. Debrief role players
    i. Refers to pertinent participants during patient simulation debrief and their perceived roles by the learners
c. Debrief lived experience
    i. Refers to the learners' generalised and specific perception of patient simulation debrief as related to their years of studies.

Braun and Clarke, advocates for the naming and defining of categories and themes. This approach allows the researcher to be consistent and explicit in determining what each part of the data represents and how it relates to the research inquiry. In line with Braun and Clarke 6 step approach to TA, a thematic map is presented for this study, ***see figure 3.2***.

In summary, thematic analysis in this study was accomplished using Braun and Clarke's (2006) qualitative data analysis methodology. Interview recordings were manually transcribed verbatim, transcripts were read repeatedly, codes were assigned, categories developed and themes of the research emerged, in order to guide discussion of the findings.

Table 3.1, Deductive Codes, and Categories extracted from literature for the Themes developed as part of Braun and Clarke's 6 steps

CODES	CATEGORIES	THEMES	REMARKS
Structured Unstructured	Structure	***1. Debrief Methodology***	The quotes from the theme "*Debrief Methodology*" are influenced by published literature and were derived as summarised below: Dieckmann, et.at (2009), refers to post-scenario debriefing as part of SBME. While Lederman, (1992), identified seven structural elements that forms part of simulation debrief. Sawyer, et.al (2016), makes reference to conversational structures that shapes the debriefing conversation and lastly Rudolph, et.al (2008), explains the three phased conversational structures as adopted in this research. All the above stated publications informed the generation of focus area for the interview guide and thus influenced the deductive coding, and categorisation of the theme
Group discussions Socratic questions Sandwich approach	Conduct		
Objective related Not objective related Improvement No improvement Variable improvement Environment related improvements	Performance		
Explored Not explored	Emotions		
Explored Not explored	Rationale		

CODES	CATEGORIES	THEMES	REMARKS
Knowledge source Lead discussions Reflection	Facilitator	***2. Debrief Role players***	The quotes from the category "Debrief role players" are informed by Lederman, (1992), identified seven structural elements and informed the interview guide. Fanning and Gaba, (2007) highlights the role of facilitators and learners during a debriefing activity. The above stated publication informed the generation of focus area for the interview guide and thus influenced the coding, categorising and theming of the "*Debrief Role Players*" deductively
Limited knowledge source Observations Peer review Present alternatives	Students		
Positive experience Negative experience Mixed experience	Overall experience	***3. Debrief Lived Experience***	The quotes from the theme "*Debrief Lived Experience*" are not referenced as they don't originate from any published literature. However they align with the deduced expressions by the participants regarding their lived experiences in simulation debrief.
Variable experience	Study year specific experience		

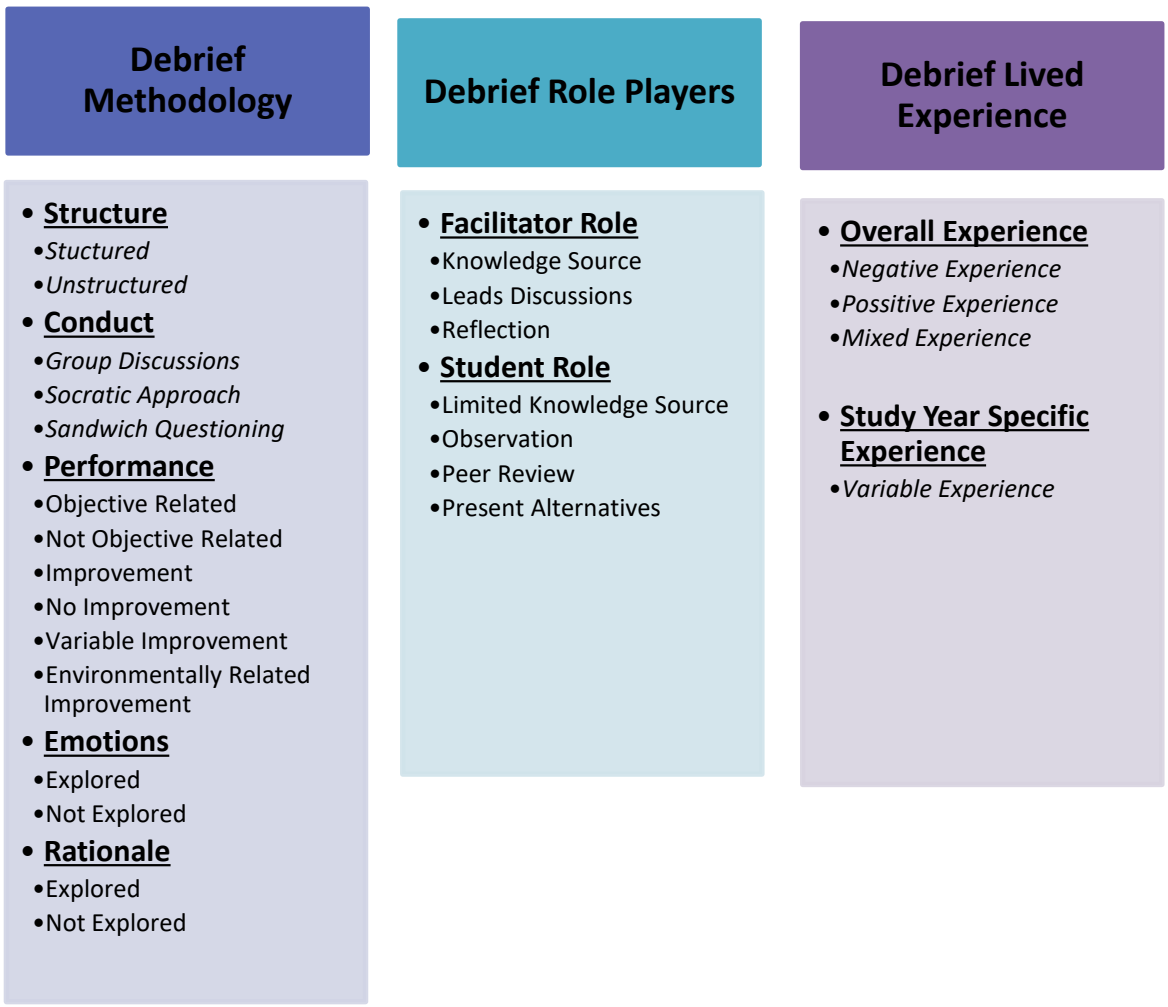

Figure 3.1. Codes, Categories and Themes as part of Braun and Clarke 6 steps

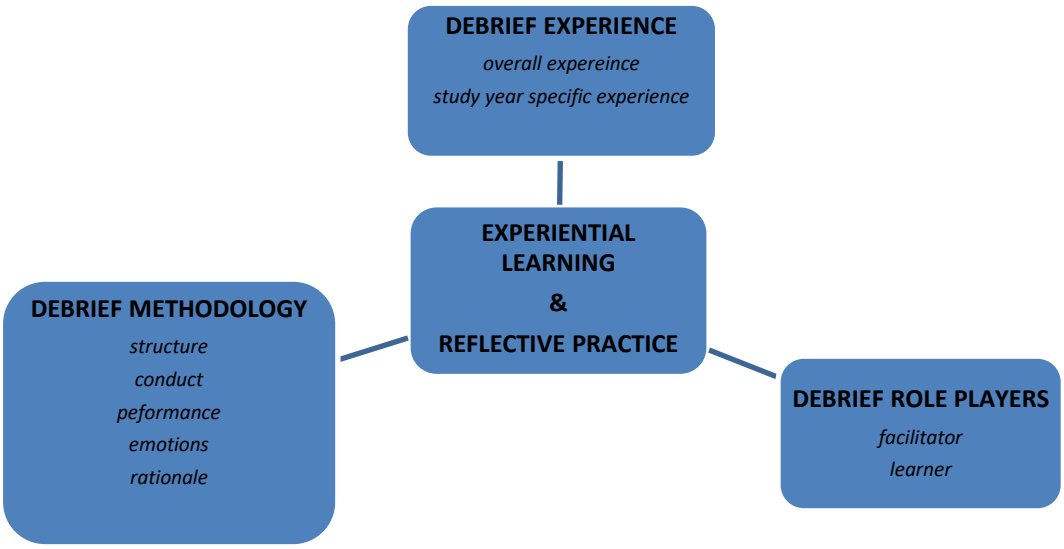

Figure 3.2 A Thematic Map detailing the relationship of the themes with the overall theoretical framework for interpretation of the study findings (adapted from Braun and Clarke, 2006)

CHAPTER 4

4 Findings and Discussion

In this section, the findings of this study with concurrent discussions are presented. The study had a class of nineteen students who were invited to participate in a semi-structured interviews. One student withdrew from the study due to illness thus resulting in eighteen out of nineteen learners participating. Sandelowski (2000), highlights that qualitative descriptive studies seek to adopt the best approach that captures the participants' narrative when presenting study findings.

Multiple approaches of presenting qualitative descriptive findings are explored by Sandelowski, the approach that resonated with this study is the "Rashomon effect". The Rashomon effects seeks to present findings of a study where multiple participants describe the same event (Sandelowski, 2000). In this study, the researcher was interested in perspectives of eighteen participants' experiences in patient simulation debriefing activity not necessarily contradictory views from the participants but personalised interpretations.

The emergent findings of this study were: three themes and nine categories, ***refer to table 3.1***. The three themes included: 1) debrief methodology, 2) debrief role players and 3) debrief lived experience. Reflective practice and experiential learning theory underpinned the findings. The study themes and categories are further discussed below:

4.1 Debrief Methodology

This theme explored the instructional design of the patient simulation debriefing process. The theme is further divided into categories that focused on areas synonymous to published literature regarding the process and composition of patient simulation debrief activity. Lederman (1992) makes reference to debriefing structural elements while Sawyer (2016) brings to light debrief conversational structures. Both these concepts are further discussed later on this section.

The researcher explored the participants experience on how the patient simulation debrief was structured and conducted. This included the participants' experiences on emotions and rationale debriefing as part of a deeper understanding of the implicit aspects of the patient simulation, furthermore the participants experience with regards to the debriefing of the their actual simulation performance in relation to the pre-determined patient simulation outcomes and lastly the impact that patient simulation debrief has on the participants future performance.

4.1.1 Structure

In this study the term "s*tructure*" refers to the composition of the patient simulation debrief activity. The Oxford on-line English dictionary defines structure as "*the arrangement of and relations between parts or elements of something complex*", this definition is synonymous with the use of the same term in this study.

The findings of this study revealed that most participants expressed their experiences with regards to the structure used for patient simulation debrief interchangeably with the category that explored how the simulation debrief was conducted. A reasonable number of participants were able to articulate their experience on the perceived structure used during simulation debrief.

From the cohort that was able to articulate their experiences on the patient simulation structure used, some participants expressed that there was no formal structure adopted for classroom practice patient simulation debrief. In this research, classroom practice patient simulation debriefing refers to debriefing that is conducted during patient simulations as part of teaching and learning, thus not linked to any formal assessments however used for practicing purposes. One of these participants further linked his/her experience to the preferential choices exercised by the various facilitators when conducting simulation debriefing:

"I don't think we have a set structure". Participant #8

"Actually I don't think there is a structure. There is no set structure, every facilitator does it their own way. There is no…. they kind of, some of them will just tell you like,

they ask you to like do a handover for them. And then ask you what you found, what you did, that type of thing but I don't know of a structure that they work with to debrief patient simulations. Unless it's the actual assessment where we go through the assessment forms". Participant #3

"*I don't know if there is a certain… structure, as I mentioned earlier it differs from person to person". Participant #7*

Within the group of participants, there was a cohort that expressed the view that classroom practice simulation debrief had an informal structure, this cohort contributed the "*open discussion*" aspect of debriefing to their experience of the debrief structure being informal. These participant in particular attests the open discussion to resulting in the debriefing not to have a standardised approach or system to be followed. One of the participant further stated that the classroom practice debriefs do not cover the entire simulation activity, however only focus on areas deemed important by the participants and/or facilitators during debriefing.

"A structure is quite informal, it's usually a very open discussion about… there is no… ok! Now we are going to talk about A, now we going to talk about B, now we going to talk about C. it usually.. So! what are your thoughts on the simulation as a whole and then we go on to the specifics that the lecturer is identified, areas that need work, areas that were done well and then usually there is a shorter discussion afterwards", Participant #1

"The practice sims are more informal where they kind… they don't really go with you throughout the whole sim, they kind of like just zero in on areas they thought you can improve. They also give constructive criticism, they like to say 2 good thing, 2 bad things. So give a little bit of constructive criticism and then also pat someone at the back as well for something they did very well". Participant #6

Lederman, (1992) identified 7 structural elements adopted during patient simulation debriefing. These structural elements include 1) debriefer, 2) participants to be debriefed, 3) an experience i.e. simulated case, 4) the impact of experience, 5)

recollection, 6) report and 7) time. These elements are intended to provide a debrief activity with a formal recognisable constitution that can be consistently applied.

From the study findings, the structural composition of a simulation debrief as suggested by Lederman is partially experienced by participants and not consistently applied as already reflected above. Areas of the Lederman structure like the role players, experience and time are found to be in place however deficiencies are expressed in terms of the impact of the experience and the reporting.

Beyond compositions in terms of elements, Sawyer, et.al (2016) and Rudolph et.al (2008), focused on the conversation intended to take place during the debrief activity and introduced conversational structures. The conversational structures are intended to guide the debriefing dialogue by breaking down the discussion into phases from the beginning to the end, in a logical and functional format. The three phased conversational structures were adopted for this study, the adoption of this approach for this study is necessitated by ease of application in the environment where formal structures are deficient. Rudolph and colleagues presented the three phased conversational structures as: reaction phase, analysis phase and summary phase. In my current study, participants commented that there was no formal debriefing structure that was used especially during classroom practicals.

Even though there is paucity in documented research within the EMC settings in South Africa, the practice of patient simulation debrief is well researched internationally and also makes explicit the type of structures that the process can adopt as reflected above.

In contrast to the discussion above, where participants were referring to the lack of structure in debriefing following classroom simulation activities, participant #6 identified assessment patient simulation debriefing as well structured. Assessment patient simulation debriefing, is a post simulation debriefing activity conducted at the end of patient simulations assessments by the facilitator as part of the assessment practices within the university. It is a criterion-referenced system, with a defined list of competencies for the student to exhibit. The student is therefore able to assess their performance on the basis of a “structured standard” rather than the tendency to employ

norm-referencing in comparing them to their peers (or other groups) when doing unstructured (open) debriefing. The participant attributes their views regarding assessment debriefs to the adherence to a consistent approach by the facilitator. Covering all the aspects of the patient simulation activity and not only certain areas of interest, but the simulation activity in totality.

"Well in the formal ones, where the lecturer actually gathers the whole class together is very structured, where as to they go according to how you approached your patient, how you found the problem or diagnose the patient and then your treatment and then you transport or if you didn't transport the decisions you made. So that does follow quite a nice structure as they start from the beginning, how you assessed, how you diagnosed and how you made your decisions". Participant #6

The assessment debriefing is acknowledged to be structured by *Participant #6*. Beyond adhering to Lederman structural elements, i.e. role players, experience, etc. *Participant #6* highlights the specific focus to the impact of experience and recollection thereof being explored and ensuring that it is covered as reflected by Rudolph and colleagues in terms of conversational structures.

In summary the participants perceived the classroom practice simulation debrief activity as not structured, while assessment simulation debriefing was experienced as better structured by the participants. The researcher observations regarding the two types of simulations identified by participants as different to each other. Classroom practise simulations are used as informal training activities where else the assessment simulations are formal activities with assessment marks and weight assigned to them as part of the university assessment policy.

4.1.2 Conduct

In this study the term "conduct" refers to the process that was followed when performing a patient simulation debriefing activity. The Oxford on-line English dictionary defines conduct as "*the manner in which an organisation or activity is managed or directed*", this definition is synonymous with the use of the same term in this study.

Majority of the participants expressed that for classroom practicals, patient simulation debriefing was conducted at the end of the simulation activity, furthermore the classroom patient simulation debrief was conducted through a group discussion with the facilitator leading and concluding the discussions. The students performing the simulation were expected to reflect on their actual activity and also comment on their experience while taking note of the inputs from both the facilitator and other students.

"*Usually once you have done your sim, everybody sits and you get an input from the class as well as an inputs from the facilitator as to what you did wrong, what you did right and certain things that you could do differently or change". Participant#2*

"As the sims ends, they will ask the person that did the sim basically how they felt it went, what they liked, what they disliked about it? Where did they get stuck? What do they think they can improve on stuff? Then it becomes a class discussion, so you will get the opinions of the class, what they saw? What they thought, you know? What was good, what was bad? And then lastly the lecturer will get involved". Participant #8

"Usually after we practice a sim in a group, the people that participate in the sim will have a chance to reflect on what they felt the simulation was about, how they feeling and then the instructor usually gives us some feedback and opens the discussions to the class". Participant #1

Dieckmann, et.al (2009); Voyer and Hatala, (2015) refer to post-scenario, facilitator guided debriefing as one of the multiple approaches that can be use when conducting a simulation debrief. These authors furthermore state that this approach is reported to be the most commonly used. The UJ, EMC department practice is therefore aligned to common practice as published. The inclusion of video play backs for students to re-look at their performance will have an added advantage to the facilitator guided, post scenario debrief (Fanning and Gaba, 2007).

Debriefing is a learner centred activity that requires the students to be actively involved in the process (Eppich and Cheng, 2015). Sawyer, et.al, (2016) and Rudolph, et.al, (2008) mention that one of the activities within the analysis phase in the three phase conversational structures is advocacy. As part of the advocacy section, the participant of the simulation is expected to clarify and advocate for their actions and omissions in

a group discussion setting. Fanning and Gaba (2007) and Rudolph, et.al, (2014) advocate that the discussion must be in an environment conducive for a dialogue. The authors furthermore expressed that the responsibility is vested with the facilitator and the student to both ensure that the environment is appropriate for a discourse. The facilitator and students are co-learners in the debriefing activity (Dismukes, et.al, 2006). Rudolph, et.al (2008) advocates that the facilitator must ensure that he/she is not harshly judgmental, doesn't sugar coat the truth however he/she must ensure honesty, mutual respect and foster curiosity on learners perspectives during a debrief. By so doing he/she will afford the discourse a conducive environment for debriefing.

Reflection is an integral part of correct debriefing and is the core for experiential learning (Taylor and Hamdy, 2013: Burns, 2015). Participant #1 makes mention of "learners being expected to reflect after the simulation", in order to improve the learning opportunity following the simulation activity. Reflective observation is an important part of experiential learning that must be actively engaged with during debriefing as it enhances learning from an experience.

One of the participants expressed their experience in relation to assessment simulation debrief. This debrief experience highlights 2 areas that are in contrast with the practice simulation debrief process, i.e. 1) the debrief is a one on one activity no longer a group discussion, 2) the debrief is no longer open for the entire class but limited to a number of learners that meet a predetermined criteria.

"So with the formal one, the marks will come out and then you'll see how you performed. And then with the people that have performed poorly they will be called into the office and then have a one-on-one debrief with the lecturer. They will receive their marking rubric and they will see where they've lost points, where they've gained points and where they should improve with all the comments of the people that were there assessing on that day. So that's how it's debriefed formally". Participant #12

The difference in the conduct of classroom and assessment simulation debrief as highlighted by the participant #12 shows a dichotomy in practice between classroom practice simulation debriefing and assessment simulation debrief.

In summary the participants expressed that the group discussions are used as part of classroom practice simulation debrief and in contrast assessment simulation debrief is

a one-on-one approach with inclusion and exclusion criteria related to the assessment standards. Self-reflection is encouraged during the classroom debrief.

4.1.3 Performance

Under the category performance, two areas of interest were explored i.e. 1) the linking of students' performance with the simulation objectives as part of simulation debriefing and 2) the perception of future performance improvements post simulation debrief.

4.1.3.1 Linking of performance to simulation objectives

High fidelity patient simulations are designed with defined outcomes that must be met when managing the patient these outcomes ensure that acceptable performance standards are made explicit (Issenberg, et.al, 2005). Debriefing provides an opportunity to explore and reflect holistically a simulation activity while also identifying future improvement plans (Fanning and Gaba, 2007; Gardner, 2013; Eppich and Cheng, 2015). Eppich and Cheng (2015), argued that simulation debriefing must ensure that there is an intentional focus on development of learning and improvement while discussing specific events, thus the discussions of the students' performance against set standards is a mechanism to ensure that learning opportunities are identified. .

Majority of the students agreed that their performance was linked to the simulation objectives. It is also apparent from the students' expressions that the facilitators played a vital role in ensuring that the students' performance and simulation objectives are related, especially during classroom practicals debriefing. Participants further expressed that simulations objectives are never prior known by the students and only get revealed by the facilitator during post scenario facilitator guided debriefing.

"During the debriefing session the supervisor will give you like the main learning points of the sim and say "this is what was expected and this how you performed in relation to…. You did well, you did it wrong, you did it differently. Because they obviously have it prepared the simulation, they know more or less what outcomes they are expecting". Participant #4

"Okay so at the end of every sim practice on the Screen though, the objectives will be there that this is what you were supposed to do. And the Facilitator will discuss it that, okay, objective A, this is what was supposed to be – this is what was expected of you and you didn't do it". Participant #12

"During the feedback they kind of… on the Board, one of our Lecturers puts the objectives, like, what was the critical Outcomes of the Patient. And then he kind of goes

step-by-step through them just to show us like, you did this, you did this, but you forgot about this, next time just think about it in the back of your mind when you're doing this". Participant #14

It was apparent that the learners related more to the approach of being provided with the actual information "*feedback*" as compared to the self-realisation of gaps and self-correction "*debriefing*". The use of Socratic questioning during simulation debrief, ensures that the student is guided to self-correction instead of being provided passively with feedback (Gardner, 2013; Eppich and Cheng, 2015; Ali and Musallam, 2018). Eppich and Cheng (2015) advised against passive student receipt of feedback and advocate for active student participation during debriefing activity.

"Our lecturers usually afterwards gives us the objectives. So if you go and don't know what the objectives are, you don't know what the patient is going to be, what the sim is going to be, afterwards they tell us, "this is the objective we would have liked" and you either go with this objective this could have been or you completely missed the objectives, work on this next time". Participant #1

"Okay, so for Practice, they do link them quite well. So if one of the objectives was to give High Flow Oxygen within maybe like five minutes of commencement or early Oxygenation and then you did it, then they do mention it that you met the objective and you know, that was good. If you didn't do it, maybe you gave Oxygen later in the sim they also do mention that you did the objective but it wasn't you know early. You gave Oxygen but it wasn't early Oxygenation". Participant #18

Some participants make mention that not all the simulation objectives get related to student performance to their satisfaction. The practice of relating performance to objectives is mostly done during classroom practicals to the participants' satisfaction and not during assessments debriefing. Simulation assessment debriefing is limited by the use of the assessment rubric that assessors make comments on and secondly not all the students can go for a one on one debrief with the facilitator as there is a criteria that must be met (usually that the student has performed poorly in the activity).

Facilitator guided post-event debrief is documented as the most effective way to support student learning as compared to leaner self-debriefing (Sawyer, et.al, 2016; Burns, 2015; Fanning and Gaba, 2007). The criteria used by UJ for one on one facilitator guided debriefing is based on lowest performing students being afforded that opportunity. The concept of self-reflection and self-correction with minimum interference from the facilitator is supported by both Fanning and Gaba, (2007) & Dismukes, (2006), the authors highlight the need for learners to be actively involved in

their learning process including self-debrief. It goes without say that the lowest performing students will definitely require the expertise of a facilitator to scaffold the experience reflection more than the other students that can use the assessment rubric to self-reflect and self-correct. The following quotes captured the students' concerns:

"Like I said before that I feel like it's not enough that a person that performed poorly is the only one that gets a debrief. I feel like if I got a 50 and one day I do want to get an 80, doing a proper debrief is going to help me as to know where are my strengths, where are my weaknesses and where can I better myself. So I feel like debrief is definitely necessary for future performance". Participant #12

"It's very vague in assessment. Say for instance one of the assessment objectives was to give Oxygen early and you gave it only later, they'll just tell you that Oxygenation – not competent, maybe for example. So you don't know, okay, is it not competent because maybe I used the wrong device? Or maybe I – the Flow wasn't high enough or low enough. Or like, how was it not competent? So they're not specific with the assessment debriefing". Participant #18

4.1.3.2 Debriefing for future performance improvements

Effective debriefing can result in performance and learning improvements (Fanning and Gaba, 2007; Tannenbum and Cerasoli, 2013; Boet, at.al, 2013). Majority of the students agreed that simulation debrief improves their future performance. One of the participants expressed that they get the opportunity to "*nicely link theory to practice*" during patient simulation debrief, while another participant stated that they "*learn from the debriefing even if they were observing other students being debriefed*". Issenberg, et.al, (2005); Dismukes, et.al, (2006); Fanning and Gaba (2007) reiterates that debrief as a learner centred activity enforces students to assume an active learning role and not become passive recipients of information.

"I feel like in debrief they do go through the theory a lot better and once you have understood it you have conceptualized this is an actual patient and this is what I am doing to this patient. To have that theory behind it and explain why you do certain things in debrief, I think does affect the way you start working in that specific sickness or disease or illness". Participant #2

"Like I said earlier that I do personally learn a lot from debriefs especially because I want how… I like to imagine myself when…say a friend is doing a simulation, I like to imagine myself thinking what he is doing, what will I do? And then when we do the debrief I sort of get answers of what is correct and then I can compare my thoughts to

them similarly to when I am doing the simulation I follow my own thinking my own knowledge that I have and then comparing that to what I should have done, I learn a lot from that". Participant #5

"I think from a more positive angle it will definitely improve every single one, especially when it comes to learning from what you done. So for me, Simulation Debriefing, even when I'm not doing a Simulation and I'm observing, Debriefing on that honestly did help me". Participant #10

"So I do feel like debrief helps as to you know it give you a good approach to sims, a good structure toward the sims. I do think it actually helps and I mean if you go into a sim and you don't really understand what you are doing and you just doing it just to get out of the sim, you just say ok! I should do X, Y and Z because that is what I have learned in class, I need to get out of here, you know I want to end this sim. But actually listening to a debrief you know, it will help you with you patient management actually". Participant #8

Within the same argument of simulation debriefing improving learning, some of the participants are able to extend classroom practice improvements into their clinical practice. This further development of practice beyond the safe learning environment of a classroom is consistent with the expectation of both SBME and simulation debrief as a cornerstone of SBME (Sawyer, et.al, 2016; Issenberg, et.al, 2005). Students illustrate this concept:

"I think definitely, because if you can… If you have a good simulation debrief where you are able to get a take home message from each individual simulation that you do, you able to see what objective needed to manage this specific patient. You obviously there is some form of learning, you learning something new each time. I definitely think it affects your future practice whether in reality or simulations because you learned something so you can improve on the next time or do something different the next time". Participant #7

"I would say yes, because lots of that I do.. Did learn in the sims that I do apply now on the road with real patients". Participant #9

"Definitely! Like I think feedback is the best thing ever, especially with one of our Lecturers and it's – in the back of your mind you will always think of stuff that your Lecturer said during feedback, the stuff that you've learnt but because you haven't been exposed to the Patient, once they give that feedback to you it kind of sticks and it's in

the back of your mind the whole time when you treat that Patient. And feedback has helped me a lot to improve my Clinical Practice". Participant #14

The following students' experiences regarding the impact of simulation debriefing on their performance summaries the epiphany of debriefing as part of SBME:

"I think I might be different to other people regarding this, but I think without question, yes, one hundred percent it does. I have, almost you know very nice evidence because my first two Simulations of the year I did very poorly last year, and I then started practicing a lot with other Students, with other Lecturers in my own time, ah, practicing and getting feedback and my Marks doubled, and I was going from getting 30s to getting about 70 for my Simulations. I can almost point out the ways in which it helps. So basically it points out areas which you are struggling, and so you can work on those areas harder. It points out particular mistakes that you make so if you get a similar scenario again you won't make that mistake, and then it just gives you general,– ja, I, I think those are the two, the two main things that the Debrief gives you". Participants #15

"I think it has a very important impact on how we better ourselves. If we consistently doing something wrong and no one ever points it out, how are going to learn? I think it plays a very important role in making us better". Participant #6

In summary, debriefing of patient simulation activities is expected to explore the observed actions of the participants' in-line with the expected outcomes of the simulation, furthermore simulation debriefing is intended to enhance the performance of participants in their future activities including real life practice.

4.1.4 Emotions

Under this category, the researcher explored whether the students' emotional reaction to the patient simulation was investigated as part of the simulation debriefing. The Oxford on-line English dictionary defines the term emotion as "*a strong feeling derived from ones circumstances, mood or relationship with others*".

Simulation activities can create different emotional responses from different participants, which may vary from being pleasant to unpleasant. Some simulations may be designed to trigger a particular emotional response that is intended to raise awareness about a particular learning activity. The reaction phase as part of the three phased conversational structures makes provision for exploring the students' emotional experience on the simulation during debrief (Sawyer, et.al, 2016; Rudolph, et.al, 2008).

Majority of the participants in this study expressed a shared view that emotional response to either classroom or assessment patient simulation experience is seldomly explored as part of simulation debrief. The variation of views regarding participants' explanation of their experience covers a myriad of reasons that will be clustered and presented. Participant#1 and #2 experiences relate to the "*industry expectations*" and highlighted below:

"Emotions! I feel, are kind of taking a side line because it's always rational, what were you thinking? What was you logical steps from A, to B to C. but in debrief I don't feel like emotions is often explored. I know it's not the same as being on the road or being faced with a real patient but I feel like people feel there is a bit of pride in this industry, a bit of like you have to be a tough guy. So I feel like emotions aren't always explored during debrief". Participant #1

"No, that I don't think. I think we focus during a debriefing and simulation in general, we focus more on cause and effect, so! How you reacted and why you reacted, not how you felt! So I mean I think as you said earlier, people are watching what you do instead of how you thinking or how you feeling and I don't think that get explored much. I think whether it has a positive or negative reaction emotionally that is not really touched upon. Honestly! I don't really mind because we have to have some sort of desensitization when it comes to this industry, you can't feel for every single patient, even if it does hit a nerve you need to compartmentalize and put away. I think with the debriefing, with the simulations in general you learn to work as a patient at work.. as if it's a patient, not a loved one or something that might trigger an emotional response. I think that is just in our career, we need it. It is a coping mechanisms". Participant #2

The two participants highlighted above expressed views that are related to the "*industry expectations"* and *"coping strategies*". The explanations are suggestive of a professional stigma and/or expectations that paramedics are to be dissociated from realities of emotional impact. This expectation seem to be resonant with most of the other healthcare workers views regarding their work and emotional attachments to patients, including practitioner emotional self-awareness (Thistlethwaite, 1999).

The study findings further describe that some participants were reassuring as they alluded to the views that even though the emotions might not be explored during the actual simulation debriefing session, the university does have mechanisms in place to ensure that learners do get support if they are emotionally affected by a simulation activity including clinical practice experience. Even though there is still a university support structure in place outside of the simulation learning environment, the

perceptions that some participants carry regarding "*industry expectations*" and "*coping mechanisms*" can be appropriately explored and addressed during a simulation debrief activity as part of exploring emotions (Sawyer et.al, 2016 and Rudolph, et.al, 2008). The quotes below reflect the expressed coping systems that some participants made reference too:

"I can't really…. Usually when people have that kind of problem they usually speak to lecturers privately. I have never actually had a case where that is the issue. The psych add services on campus is willing to help, If you struggle with those flash backs, recollection of those traumatic events stuff like that". Participant #6

"I would say no, not in the simulation debrief no. They won't go further into that. You can... I mean you can talk to the lecturer after about it and have a one on one debrief maybe, but as a class itself its. … I don't think it ever gets done going further into the emotions no". Participant #8

A sub-group in the study expressed their experiences regarding emotions not being explored during simulation debrief, relating it to the dichotomy between the simulation learning environment and reality, particularly the use of high fidelity manikins associated with patient simulation activities. They highlighted their inability to relate emotionally with a "*manikin*" as compared to a "*real patient*" as the pain and suffering is not realistic enough for them to be emotionally affected during a simulated environment. Issenberg, et.al (2005) notes that a disadvantage of simulated practice is the desensitisation of medical personnel to real patients. This is exemplified by the quotes below:

"I think it is very difficult to create a connection with a doll or a prompting situation, it's a lot easier to create a connection with someone who is real and is reacting to you. I think with the doll and everything that is controlled, it's a very controlled environment so I feel like you don't really warry too much about the external factors it's about ok! We have to do this sim and you focus more on what you have to do instead of focusing on the person". Participant #2

"I don't think I have ever been asked how I felt about the sim. The things we use are dummies and it is a…plastic doll and we all have to try and have a bit of imagination. with your clinical mentor while you are at work and then emotions come in a little more cause you then working with real people. Real lives that are affected. Real people that are sad about a loved one then emotions get into it but now it's pretty academic. We just focusing on learning and what we need to do. That is why I think emotions don't really feature in a simulation assessment debrief! Participant #5

"I think in a simulation you are not dealing with a real patient per se, you not dealing with a person, so you not dealing with an actual human pain and suffering or the things that you will deal with in reality. So I don't think… so they are not going to…. and I don't think it has ever been done, they not explore the emotional site of dealing with that patient not like in a clinical debrief where you just managed a patient, where they will ask how does this make you feel? Or what emotions were you feeling when managing this patient? It's not really done in simulations, because I don't think its…. I don't think it's really relevant in simulations, the emotional side. I think it's more relevant in a clinical setting". Participant #7

The expressed experiences from the sub-group above, are congruent with the views of McGaghie, et.al, (2010) regarding the context of education and the impact it has on professional practice. The McGaghie team reviewed SMBE publication for a period of 7 years, the aspect of ensuring that SBME is contextually aligned to the expected competencies that the professionals must acquire during training was flagged as important. Inability of paramedics to contextually position their emotional exposure due to limitations of SBME is an example of context training which was mismatched with expected competencies. The expansion of SBME context to include the use of standardised patients or actors will make it a multi-modal approach closing the gap between real life and manikin use, thus introducing the authenticity and alignment of clinical competency and training context states. This approach is applicable to EMC context.

"*Anxiety, stress and panic*" were highlighted by a sub-group of participant as associated mainly with simulation assessments. These participants identified these reactions as an expected norm known by their lecturers and they were expected to cope with such by taking it as part of the simulation learning activity. Tremblay, et.al, (2017), explored the impact of simulation clinical immersion on the cognition overload and stress on undergraduate pharmacy students. Their study results proved that the simulation environment does result in stress and anxiety for learners. The study recommends that facilitators should consider the design of simulations to cater for the needs of undergraduates so that they are able to cope with the associated stress and anxiety. The quotes below illustrate the participants' experiences:

"I mean the only thing that the lecturers tell is that they know that simulations are nerve racking and that sort of thing but it's never… I mean it doesn't go further, there is nothing they can do for us. I mean if you are stressed then you are stressed. Emotions in simulations is more out of stress of the whole assessment, I am always very stressed about simulations, it's a very.. I mean if it was not for simulations I wouldn't have an

issue like with fourth year I would tell you that I will qualify at the end of the year, but because of simulations I am always very… very stresses about it". Participant #3

"I don't think they go deep into the emotions. I mean we kind of follow the sim, get the sim done, go home. That is kind of… you know that with assessments on the other hand, there you have the whole, the stress the anxiety and stuff like that but it's never… we never you know talk about that and get that out". Participant #8

"it's not that they're disregarded, your feelings or whatever, but it's made pretty clear before we do sims that there is – it's "stressful" you know, and everyone knows that. The Classmates know that, the Lecturer knows that, I think the Lecturer might point out if he sees us stressed, he'll be like, I know that you're stressed. And then maybe, maybe sometimes explore why. Is it because you're scared of the drugs you meant to use? Is it because you're scared you don't have a system in place? But in terms of asking us how we feel about the call and about – no, that's not really explored". Participant #13

In summary the exploration of students' emotional reaction due to simulation design has highlighted various findings that covered a number of views by the participants. Some aspects of the study findings resonated with the published literature regarding the shortcomings of SBME in preparing students for dealing with emotional cases during clinical practice. In contrast to that, an area that still requires further investigations is. the impact of simulations assessments on the emotions of students. This section does however share significant insight in the experiences of EMS students regarding the emotional aspects of SBME.

4.1.5 Rationale

Under this category, the researcher explored whether the students' rationale was explored as part of the simulation debriefing. Patient simulation activity allows the facilitator and observing students to note the visually observed actions or omissions without fully appreciating the thought process behind them. Without exploring the participant thought process, the observers may not fully comprehend the participants observed actions or omissions during the simulation activity and thus might result in false assumptions regarding the observed performance. Sawyer, et.al (2016) and Rudolph, et.al (2008), in the three phased conversational structures make reference to the analysis phase as part of the debriefing process. The analysis phase affords the simulation performer and observers to have a dialogue through advocacy and inquiry. The observer will enquire about anything deemed necessary to seek clarity from the participant and the participant may explain anything he/she deems necessary including

responding to the questions posed during the enquiry (Sawyer, et.al, 2016; Rudolph, et.al, 2008).

Most of the participants expressed the view that their thought process was explored during simulation debrief as part of class discussions, especially during classroom practical simulation debriefing. The role of the facilitator is expressed by the participants as key in exploring their rationale.

"Okay in practice sims they are explored quite well, because say for instance the Facilitator tells you something and then you tell them that, okay, the reason why – say for instance the reason why I didn't give Morphine is A, B, C, whereas you were supposed to give Morphine. So, you do tell them how you feel about the Clinical decision and then they then tell you, maybe your train of thought was off track. So they tell you that, okay, I get you. I get what you were thinking, but you know it's not how it's supposed to be, but it makes sense why you were thinking like that. So in practice sims they are explored quite well, but not in Assessments". Participant #18

"So they'll ask a question like, what were you thinking? And that, so then you'll feel obligated to explain your rationale towards what you did, and then they'll work from thereon, yes". Participant #14

"It would be part of the discussions when they say, you did this, why did you do this, what did you find to make you think you should do this? Even if it was right or wrong, they will ask you, you did this, it wasn't 100% clear from the outside point of view, how did you get this to this? Could you just elaborate". Participant #4

"The rationale is definitely explored behind each decision that you make you will be probed as to why did you make that decision, what was your thinking behind making that decision and it should like… it needs to be that way I think, for each decision that you make". Participant #7

"I think it also goes back to people trying to understand why you did a certain thing. So they would ask, oh okay, so what were you thinking of if you were giving – why, why did you decrease the Infusion from that to that? And trying to understand. And if you – if your argument is valid then I guess that's how now they explore your, your rationale and your thinking at the moment, as to why you do a certain thing". Participant #12

In summary the findings of this study express the same sentiments synonymous to student advocacy of actions and omission. This practice ensures that patient simulation

activity is not reduced to only observable findings not supported by metacognitive activities.

4.2 Debrief Role Players

Under this theme, the researcher explored the 2 pertinent role players for SBME i.e. the facilitator/s and the students, including their perceived distinctive roles as experienced during patient simulation debriefing. Lederman, (1992) makes reference to seven structural elements as part of simulation debriefing, the first two being debriefer and participants to be debriefed. These two elements are synonymous to facilitator and students partaking in the simulation debrief.

4.2.1 Facilitator role

Participants in this study expressed mixed opinions regarding the perceived role/s that the facilitator fulfilled during simulation debriefing. A fair number of participants referred to the role of the facilitator being provision of "*feedback*" during patient simulation debriefing. This sub-group limited the role of the facilitator to providing information to them about their performance in relation to the outcomes of the simulation, based on what the facilitator perceived as being correct and incorrect. In terms of patient simulation debriefing expectations, the role of the facilitator is far beyond the provision of "*feedback*". The published literature refers to the role of the facilitator extending into the area of "*inquiry*" (Rudolph, et.al, 2008). The facilitator is expected to probe the learners' thought process and justification as related to the observed actions while attempt to bring metacognition to the learners' consciousness through the process of reflection (Gardner, 2013). By so doing, the learners is guided into self-reflection and self-correction as compared to being told what is correct from what is incorrect by the facilitator. The sub-groups' views regarding the role of the facilitator are highlighted below:

"I think to offer us feedback and to point your strength and weakness during the sim. So as a practitioner you can work on them and focus on them". Participant #9

"During the debriefing session the supervisor will give you like the main learning points of the sim and say "this is what was expected and this how you performed in relation to you did well, you did it wrong, you did it differently. Because they obviously have it prepared the simulation, they know more or less what outcomes they are expecting". Participant #4

"The Lecturer's – I think is to observe how the Student performs and then also some worrying aspects, like taking too long to put the Blood Pressure cuff on. Taking too

long to do stuff or focusing more on history when the Patient's stable, stuff like that. And then giving us feedback on it". Participant #14

"Okay, so the Role of the Facilitator is like I said, to tell you what you did good, maybe things you can improve on the things you did good, and what you didn't do so good, and things that you need to look into, you need to go over as well". Participant #18

The majority of the participants expressed their views that they perceived the role of the facilitator as "*knowledge source, authoritative and providing guidance*". These views are aligned to the expected role to be fulfilled by the facilitator during the facilitator guided post-event simulation debriefing activity (Sawyer et.al, 2016). The fundamental principle in this approach is that, the facilitator ensures that the students are central to the discussions during debriefing, the facilitator is there to guide the discourse and ensure correct conclusions are met and learners self-correct (Sawyer et.al, 2016; Rudolph, et.al, 2008; Gardner, 2013).

Dismukes, et.al (2006), advocate for facilitators to fulfil the role of co-learners as part of SBME and in particular debriefing. By becoming co-learners, facilitators strengthen dialogue between themselves and students including formulation of common knowledge and understanding thus enriching the process of learner centred learning. The shared views of these participants are congruent with the published literature on co-learning.

"I think us as Students take the Facilitator's critique very seriously because obviously they know what they're doing. So their role is to "guide" us in the right direction". Participant #11

"I see their role as obviously guiding you through the simulation at first and then at the end to get you to thinking a bit more about what you were doing?". Participant #7

"I think as a student, it's good to question and it is good to try and learn but also think you can only question so much without getting input back and I feel like the facilitator is always there to give input into any queries that the student might have because at the end of the day it is a learning experience". Participant #1

A small sub-group of participants perceived the facilitator going beyond purely focusing on the actual learning objectives for the simulation. These participants were able to identify an area relevant to the role of the facilitator which is key to successful pedagogy. They viewed the facilitator as a "*motivator*". Rudolph, et.al (2008) allude to characteristics that results in effective facilitation during SBME and debriefing as not

being too harsh and not to falsify judgement, not to sugar coat criticism but to be clear, honest and respectful. By being respectful and motivating students, the facilitator creates a safe, conducive learning environment suitable for debriefing (Rudolph, et.al, 2008; Fanning and Gaba, 2007; Gardner, 2013).

"When I felt very negative about a sim that I've done because I wasn't sure what to do, they've said "all" the good things that I did do even if it was a little bit of good things that I did do that made me feel, okay, you know I'm not in the wrong place, I'm studying the right thing kind of ".Participant #11

"I feel the Facilitator should also encourage the person and be supportive towards them because if you have a Facilitator who says you're "dumb" you're not going to want to do a Simulation again, you're going to be scared in the back of the Class because like you don't want to be dumb. No one wants to be inferior. So I think empowering the Students should definitely be a part of the Facilitator's job". Participant #14

4.2.2 Student Role

The role of students aligns with Lederman's, (1992) structural elements in particular the participants to be debriefed. Majority of the participants expressed their views that there are two main roles that the students fulfilled during patient simulation debriefing. These roles are identified as "*peer reviews and alternative approaches*". These participants argued that when students observe others conducting the simulations, during the debriefing activity they are able to discuss matters from the same level of competency as the students that participated in the simulation activity. They further expressed that as observers they are also able to explore and present alternative approaches to specific skills they observed being performed.

Dismukes, et.al (2006) and Fanning and Gaba, (2007) concur that a learner must assume an active learning role during simulation debrief, furthermore learners must possess skills to analyse their own and others' performance beyond descriptive event recalling. Gardner (2013), acknowledges the need for all role players to engage in a group discussion during patient simulation debriefing. The shared views amongst the participants regarding students' roles strengthens group discussions. The participants' views regarding the roles of students is captured below:

"From other Students, which is – it's more of like a peer review system, it's like we're building each other and we're telling each other where you should actually improve from, because now students are actually looking at the simulation in terms of the same

level". Participant #16"And I think students they contribute by giving their own views on how to achieve those outcomes and because there is more than one way to skin a cat, so sometimes you can achieve those outcomes through different ways so it's always helpful to hear from others' different viewpoints". Participant #6

"They give you a different perspective from a student perspective, someone that also doesn't know… is not a qualified practitioner as yet, doesn't know everything sort of to say. So they give you that different perspective of sims and they also then ask questions which brings up new conversations in the debriefing". Participant #5

In summary the participants perceived the role of the facilitator to be multi-faceted. This ranges from a simple provision of feedback to complex expectation like guide learning, become an authority figure and being knowledgeable. With regards to the role/s of students, the participants expressed their views that students mostly do peer reviews and present alternative approaches to specific clinical skills and interventions during patient simulation debrief.

4.3 Debrief Lived Experience

This theme encompasses general students' experiences in patient simulation debriefing and the experience specific to the years of study. In both related categories i.e. general and study year specific experience, the students expressed numerous views that can be grouped as positive, negative and mixed views for the overall experience, while variable views are expressed for the specific years of study.

4.3.1 Overall Simulation Debrief Experience

The students were able to identify with this area of enquiry as a general overview of their experience in patient simulation debrief. The majority of the students identified their overall experience in patient simulation debrief to be positive, contributors like reflective practice and the role played by the facilitator/s were amongst the strengths identified:

"Generally (sim debrief) is quite positive. I find that I gain a lot of information in the debrief rather than in just practicing because you can make the same fault over and over again without being corrected. With the debrief you become more aware of that. So I feel overall is pretty positive". Participant #2

Identified contributors to a positive experience are further discussed based on the expressions by the participants. "*Reflective practice*" as part of SBME and patient simulation debriefing was articulated by one of the participants as a contributor to a positive overall experience for simulation debriefing. The participant elaborates that reflection allowed them to re-live the experience. Debriefing is a guided reflection process, that when correctly accomplished, affords an opportunity to identify areas of correction and growth, so that the necessary changes for future practice can be identified. (Dieckmann, et.al, 2009; Taylor and Hamdy, 2013; Burns, 2015). See the discussion of reflective practice in section 4.5

The role played by the facilitator is also identified as a contributor to a positive debriefing experience by participants. Even though this area was extensively explored under its own theme, the participant highlighted the facilitator as being helpful in improving performance from deficient areas. Sawyer, et.al (2016); Burns, (2015); and Fanning and Gaba (2007) agree that facilitator guided post-event debriefing improves learner performance.

"I think my experience in patient debriefing has actually been a good experience, because just after simulations have been done, ……..then if I get a debrief from the Lecturer or something, it helps me to improve on the areas that I was lacking on". Participant #16

Extending beyond the discussed contributors, a sub-group of participants differentiated between classroom practice simulation debriefing and assessment simulation debriefing. They expressed a positive experience in favour of classroom practice simulation debrief. This sub-group of participants highlighted the classroom practice debrief environment as a contributor to a positive experience due to the nature of debriefing being conducted where both the facilitator and the observing students share inputs in the debriefing activity. That interaction between various role players i.e. the facilitator and students was experienced as a positive aspect for classroom practice simulation debrief.

"Those actually really help, the practice debrief because not only the – you get a debrief from the lecturers perspectives, but some of the students that think from where you are, from the seat that you're sitting on". Participant #17

"I feel like they are very helpful and necessary, because you'd know that we do it in front of the whole Class with the Lecturer present and each Student will have a take on what they think how you've performed. So I feel like it is, it's necessary, it is done and it's "constructive criticism". Participant #12

Extending from the role players during the classroom practice simulation debrief, time allocation was also identified as a contributor to a positive experience. The expressed view was that, when ample time is allocated for a debriefing activity the debriefing gets conducted at an acceptable pace and also in more detail. Issenberg, et.al (2005), refers to the ideal time spent during a debriefing activity being at least twice as long as the simulation time. Adequate time allocated during debriefing ensures that nothing gets rushed and that the debrief activity truly becomes a learning opportunity for participants as they interact with the simulation robustly and completely.

"The debriefing is actually better during practice sims because there – there's – should I say, like there's "time" and you know everybody is together and it's not like you do the sim and then you leave. Like after doing your sim you stay there and then the – whoever is giving you the sim, the Assessor so to say, they, they actually tell you, your pros, your cons, where you went wrong, the things that you did right. So, practice debrief is actually better than assessment debrief." Participant #18

"That's been, you know, that's definitely almost after every sim is a – there's debrief and that goes into quite a lot of detail". Participant #13

In contrast to the positive classroom practice simulation debrief experience, a sub-group of participants expressed negative experiences with classroom practice debriefing. The sub-group raised the quality of debriefing information and facilitator domination of discussions as contributors to negative experience.

"Because they zeroed in on small issues in your actual simulation like your history was a little bit incomplete or you panic a little bit here or you got a little bit nervous here. It wasn't alright, right from the beginning your primary assessment, your secondary assessment, your vitals, your history taking. They don't go through the whole process with you it's just nit picking little areas you can improve". Participant #6

"Because a lot of the time it relies on a discussion between the class member, participants and the instructor, and a lot of the time there isn't much feedback from the surrounding students. So the instructor says 'ok! This was what we were doing and here is your mistakes, this was good, this was bad. Any other comments and there is usually very few other comments", Participant #1

Majority of the participants expressed views of a negative experience in relation to the assessment simulation debriefing. These participants registered concerns regarding the inefficiency of assessment simulation debriefing and identified "*inconsistency in conducting debriefs*" as well as "*generalisation of comments*" and "*limiting who is eligible*" as contributors to the negative experience.

"Okay so it varies in terms of some Lecturers – so in different years some lecturers might find it – or might make it more of a priority and it will be said, we're going to speak about the sim (assessment). And others might carry on next – you know when it could be a debrief, we have a lecture and then maybe the – maybe when the sim marks come out we might speak about it then, but it, it's kind of like an "after thought," whereas not, okay, this period is going to be for Lecture for the sim debriefing and in terms of "scarce" it's, it's quite short and it's not very individually based. It's a general – it's normally always a general debrief". Participant #13

"My experience is that the debriefing has not been specific, it's been quite a – like they don't look at your specific mistake or it's not been specific, it's been very vague". Participant #18

"I feel like one-on-one debriefs are not done as much as necessary as they should be done. I feel like more could be done. I feel like – I don't know if it's a time thing, but I

just wish like after every simulation there could be that one-on-one on debriefing us. I know with last year maybe the bottom five people that failed would have one-on-one debrief but the rest would be fine. So my argument is that, let's say I did pass and I got a 50%, I would want to know how to improve and I feel like debrief could help me move from a 50 to a 70 potentially". Participant #12

Finally, a group of participants' expressed a "*mixed experience*" in relation to general simulation debrief.. This sub-group identified "*patient simulation performance results*", "*facilitator role*", and "*debriefing timing*" as contributors to the mixed experience expressed.

"My experience in patient simulation debrief it's a bit of a mixed bag so, so obviously it depends on how the simulation goes". Participant #10

"My experience has been… I find it very helpful in some instances and in some instances it hasn't really been helpful. That is kind of a lecturer dependent or Supervisor dependent". Participant #4

"my experience is that, I've noticed that debrief helps a lot especially most of the time if it's directly after a Simulation, because everything is still fresh in your mind what you did and what you didn't do, it's still very clear and if they debrief you right there then you can automatically reflect on the things that you did and didn't do. But then again, it builds a lot of stress on you because before you can even get the results, you most probably know how the results will be and that just ruins your whole week, or even month depending on the simulation stake you know". Participant #17

In summary the students expressed a variety of experiences in relation to overall patient simulation experience. Their experiences were mostly positive due to the classroom practice simulation debrief, negative due to assessment simulation debrief and mixed as a result of combination of factors.

4.3.2 Study Year Specific Experience

In this category, the participants expressed their experiences in patient simulation debriefing specifically in relation to their various years of study i.e. from first to fourth year. The students were only able to describe first to third year experiences, as, although they were in fourth year, they had not started with patient simulations activities when the data for this study was collected.

The Majority of the students expressed their experience to be positive for first and third years, with third year being the year students perceived the most meaningful learning opportunities were provided. Students also expressed concerns with second year and identified it as a year with less pedagogical impact than first and third year.

"I think in First and Third Year, those were my best, that those – those sims that we did throughout those years they were debriefed very well. I think Second Year there was a lot of "confusion" in most of the Simulations we did but – so I would say overall my experience with Practice sim debriefing is, is good". Participant #11

A further interrogation of students' experiences, exposes specific areas with every year of study that contributed to their held views with regards to expressed experiences,

"First Year was very structured, very good because obviously we come – I personally came straight from Matric so I'd never – I didn't know what I was getting myself into to be honest. So I knew nothing about Patient Care. I knew nothing about anything, I wasn't a BLS before this, I didn't do – so to have that really good Foundation did help us in Second Year where we felt a bit lost, because I would just refer back to how you approach sims in First Year, but then – because then I was like, if we're going to have sims like this in Third Year and it's more complicated it's not going to be great. But then we came to Third Year and then it was very Structured and we knew exactly what the Outcomes were, we also had to do a lot of Reading by ourselves which I think that – a lot of my Classmates didn't do and then that's why they think that you know, the sims were not our level, but I think that you know we have to be able to Read by ourselves in order to learn. So I think the First and the Third Year were the best structured approach to sims". Participant #11

"I think obviously in third year you will be more in details as you obviously can do more and you have I think more in depth discussions on the case that you did. Where in first year. Ok! First year it is the basics, so I mean you can only debrief so much with the first year. So you know you debrief those tick boxes, you say you went through this, you went through that, why didn't you go through that, where else in third year is more why did you assess that not that? Why did you give this drug not that drug? It's a bit more in depth discussions in the debrief I would say". Participant #8

In SBME the planning phase must cover designing of outcomes for both the patient simulation and the debriefing activity. The facilitator is key to planning and ensuring that every aspect of SBME including the debriefing activity is covered. During a facilitator guided post-event debriefing, the facilitator must ensure that he/she guides all activities across the spectrum of SBME including their related outcomes (Sawyer, et.al, 2016; Burns, 2015; Fanning and Gaba, 2007).

"Like last year he was very prepared and the lecturer knew what he wanted to do and knew what objectives and outcomes to- but in first and second year there wasn't really a set of outcomes and objectives, it was kind of be, you will see with the facilitators when they come in they ask us what we are busy with in EMC and will be like, ok cool I have something let's do this and a lot of simulations that we practiced that I have experienced are based on the facilitator experience". Participant #3

"Different lecturers will handle simulations differently. Like I said in third year it was the power point presentation that helped a lot, when in first year there was the big influence.. Emphasis on the whole giving sims positive, negative criticism". Participant #4

Participant#3 and #4 referred to classroom practice debriefing and highlighted various pedagogical impacts. Below section makes reference to assessment debriefing as an area of focus. Even though the focus has changed, the common trend regarding students' experiences is still consistent i.e. first and third are well designed and support pedagogy where else second year remains deficient for assessment debrief.

"I think as I started in this institute in first year, they were very good. You were debriefed in every single in practice and in assessments. But in second year no! third year, we only seemed to get debriefed if you did really bad in a sim, but then it was still good. They gave you proper pointers as to where you did wrong and where you could improve but if for example you just! Just! pass or you passed, there wasn't really any debriefs on how to say where you can improve or as to what you did right. So I think, the experience is a bit mixed up". Participant #9

In summary the expressed views of the participants highlighted 3rd year being the "best" year of their studies as far as simulation debriefing was concerned, followed by 1st year. However 2nd year simulation debrief experience was the "*least*" effective and enjoyable as expressed by the participants.

4.4 Experiential learning

Experiential learning theory (ELT) is a theory that was developed by Kolb in 1984 (Kolb, 1984). This theory underpins the findings of this study as can be seen from the explanation of the four phases of the described learning experience. i.e. 1) concrete experience, 2) reflective observation, 3) abstract conceptualization and 4) active experimentation (Kolb, 1984; Burns, 2015). Participating in a patient simulation activity only without any further interaction, exposes the participants to the creation of a concrete experience. The concrete experience on its own affords participants a limited learning opportunity if not appropriately explored further. The findings in this study for second year simulation activity experience as expressed by the participants aligns to exposure without guided reflection.

In addition to participating in a simulation activity, simulation debrief aligns with the reflective observation aspect of ELT as stated by Burns (2015) and supported by Kihlgren, et.al, (2015). This particular aspect of the ELT becomes the basis of reflective learning, which is the fundamental reason for simulation debrief (Burns, 2015; Kihlgren, et.al, 2015). The majority of the participants in this study valued the experience the simulation activity afforded them including the accompanied debriefing thereof.

"Okay, so I would say that it's very necessary for like learning because for me personally when I reflect back on what I did in the patient simulation, if I debrief it actually opens my eyes to what should have been done. What ideally should we do or should be done and then like if I don't – I think if you don't debrief then you would do the wrong thing over and over and over again". Participant #14

The aspect of reflection is referred to as part of simulation debrief, which is congruent with published literature (Burns, 2015; Aghera, et.al 2017; Mickleborough, 2015; Lavoie, et.al (2013); Kihlgren, et.al, 2015).

4.4.1 Reflective practice

Dewey in 1910 (as cited in Lavoie, et.al 2013), defined reflection as "*an active, persistent and consideration of any belief or supposed form of knowledge in light of the grounds that support it and the further conclusion for which it tends*".). Schön (1991) and Lavoie, et.al,(2013) extended the work of Dewey by re-defining reflective practice as applicable within professional practice stating that "*tacit knowledge as embedded within practice could be elucidated through critical examination of knowledge and feelings*". Both historical authors i.e. Dewey and Schön concur that individual knowledge is subjective and thus needs to be explicitly examined to ensure that it resonates with others' understanding. Simply stated, reflection is the core of debriefing and SBME (Kihlgren, et.al, 2015).

Reflective practice encourages students to examine their knowledge, understanding and beliefs in order to learn from their own experience and the experiences of others (Tsingos, et.al, 2014; Kihlgren, et.al, 2015; Lavoie, 2013). The concept of reflection in-action and on-action as originally defined by Schon, interrelates with during-simulation and post-simulation debrief approaches. Reflection in-action is referred to by Schön (1991) as during activity thinking while reflection on-action as post activity thinking. Whether post or during activity thinking, both support learning during SBME. Schön, (as quoted in Kihlgren, et.al, 2015) stated that "*the dialogue between the student and the facilitator results in a deeper and broader learning if it is based on a reciprocal and reflective model*". Kihlgren, et.al further advocate that the practice of reflection in-action, enhances medical practice and improves patient safety. Participants in this study have echoed the same sentiment that, during debrief individual learning and also learning from other students occurs:

"So for our first two years there wasn't much feedback because first year was basically learning how to do sims, second year was… We didn't get much feedback and then our third year we started getting a lot more feedback after every single sim. And I feel like that helped me a lot because it feels like you prepared even if you are not doing a sim, you are so invested in what is going on because there is communication between you and your lecturer and you feel like you learn from other peoples' mistakes as well as yours". Participant #1

Kihlgren, et.al, (2015) explored the impact of debriefing on junior doctors and Lavoie, et.al, (2013), explored the impact of reflective practice on nurses and nursing students both concluded that reflective practice improves learning and competencies of these professional groups. The experience from multiple participants in this study resonates with these published findings.

CHAPTER 5

5 Recommendation and Conclusion

5.1 Recommendations

Based on the findings from this study, the following recommendations emerge:

5.1.1 Debrief Methodology

Majority of the participants in this study raised concerns with the category "*Structure*" under the debrief methodology theme. This sub-group expressed that they perceived simulation debriefing to be unstructured predominately, with an exception of 3rd year of study. The majority of the concern is around conversation structures not consistently in place thus undermining the structural elements, Sawyer, et.al, (2016), Rudolph, et.al, (2008) and Lederman, (1992).

Regarding the debriefing structure the following are participants' recommendations:

"I also think it would be helpful if they find one structured approach and use that to kind off just as a guideline when debriefing". Participant #7

"I think like having a structured approach on what you expecting is easier to make debriefing easier. Because I mean debriefing on its own just from the top of your head works but you not… you forget about some of the objectives you wanted to do in the simulation. This is now from the facilitator point of view". Participants #3

"I think that it's – you know, it doesn't maybe need like, the Rules to be too strict, but maybe just give each facilitator kind of a framework to follow. So what I mean by that is that there's kind of a general system where you can go through not just certain aspects of the simulation, go through the entire thing by following almost a "checklist" of things you talked about". Participant #15.

Jaye, et.al (2015) investigated facilitator ease of application for the three phased conversational structure, debriefing method. They developed a guiding illustration that the novice facilitators consistently utilised to aid the conventional structures. Their results proved that the use of an illustrated guide improved the efficiency of novice facilitators in debriefing simulations. The

results of their enquiry were further supported by Garden, et.al (2015) and Sawyer, et.al (2016). The shortcomings regarding structure can be corrected by UJ, EMC department by adopting a particular conversation structure suitable to their needs as per year of study and refined as the study years progress including a guide document or faculty development for novice debriefers.

An additional shortcoming was expressed by the participants on the utilisation of temporary tutors or *"strategic tutors*" for SBME without any understanding or competency in providing "*feedback*" or conducting debriefing activities. Cheng, et.al (2015) expressed views that SBME is a pedagogical competency that must be acquired by all entrusted to conduct it. Faculty development is a priority in capacitating members with skills, knowledge and attitudes that are appropriate for SBME (Cheng, et.al, 2015).

Regarding the "*Strategic tutors"*, the following are participants' recommendations:

"I think just from the strategic tutor point of view just…. Obviously these people know what they are doing because they are strategic tutors but maybe if they could just be briefed on how they should be debriefing students. I feel like that could be very beneficial because they are not lecturers they are not in this environment often". Participant #4

"So feedback. I would say educated people should do it, people who don't – if they don't have time for students, please don't give feedback because it just makes them feel down. And then also I think there should be greater focus when you become a lecturer on like feedback, because some people will give you tons of feedback that's so beneficial, some people will give you tons of feedback that's…." Participant #14

Published literature acknowledges SBME is a specialised form of instructional design, so it needs the "*strategic tutors*" to be orientated beyond the use of manikins and extend into the simulation design and the debriefing thereof in order to make it a meaningful learning opportunity. Faculty development is a formal plan with a range of developmental interventions that an institution adopts to capacitate teaching staff in executing their duties (Cheng, et.al, 2015). Fanning and Gaba (2007) make reference to formal and informal courses that faculty should be exposed to in order to capacitate them in execution of SBME. Fanning and Gaba (2007); Cheng, et.al (2015) mutually agree that a mentorship program for novice facilitator to be paired with experienced facilitators can enhance their skills in SBME. A formal orientation program including faculty developed plan established by the UJ for the "*strategic tutors*" and all faculty members can assist significantly with SBME as a pedagogical approach.

5.1.2 Emotions

It was apparent in this study that the participants' emotions were experienced as an area that was insufficiently explored as part of the debriefing activities. Mileder, et.al (2015) expressed a concern that during health professional training through SBME activities, dealing with emotionally challenging circumstances as part of undergraduate training is very variable and underrepresented. Even though health professionals are faced daily with emotional challenging and stressful circumstances, the focus during training is more on dealing with cases and less sensitive to the impact on the practitioners. Mileder and colleagues (2015) argue that adding the emotional stressors and managing the impact beyond the clinical capabilities but inclusive of practitioner impact and coping skills is proven to have a better impact on undergraduate assessment performance and clinical practice.

5.1.3 Overall Simulation Debrief Experience

Majority of the participants in this study raised concerns with assessment simulation debriefing activity. Their concerns can be summarised as infrequency of debriefing, not capturing specific information and criteria that limits access to debriefing. McGaghie, (2011) makes reference to assessment of learning and assessment for learning. Assessment of learning needs to be supported by rigorous quality assurance practices and standards that ensures that simulations are able to reliably and accurately certify competence, while assessment for learning is underpinned by the quality and consistency of feedback/debrief provided to support learning (McGaghie, 2011). Assessment simulation debrief should adhere to stated standards.

Below quotes highlights the participants recommendations on assessment simulation debriefing:

"Okay, I would like to see a more detailed and structured approach of the assessments, it's the highest level of stress we go – and after that sim where we wouldn't normally afterwards have debrief. I understand it can't happen, sim would take forever for everyone who got debrief, but just some more effort and thought into doing a debrief session of our assessments". Participant #13

"I think that after assessments if we get a proper formal debriefing, maybe not telling us what we should have done or what we could have done, but maybe just telling us the objectives. You know saying, if we monitored Blood Pressure, if we have Adrenalin Infusion, you know, it's good. Not saying that you failed or didn't fail, but just you know highlighting those objectives for us". Participant #11

"Assessment, Definitely improvement because they need to be specific about "what" objectives we didn't meet. What things we missed, you know, because they're very vague. They just tell

you "not competent" with fluids, but you don't know, is it because I gave too much? I gave too little? Is it because I didn't even let the line run so the patient was not getting any fluids, you know? So, so they need to be specific with each student simulation". Participant #18

The *participant # 18*, expressed the need for the individual assessment tool i.e. "*rubric mark sheets*", used to score and remark for every students' performance to be documented in a detailed, accurate and specific manner. The "*rubric mark sheets*" are provided to learners to note assessor remarks and scores allocated per section of the simulation and are used to form part of the simulation debrief interaction between the student and the facilitator. If these documents were detailed and accurately remarked, students could self-reflect and self-correct most of the times and only a few would need to have appointments with facilitators for a one-on-one debriefing activity. The practice of self-debrief is supported by Williams, et.al (2016) where the approach was found to be sufficient and favoured by students.

5.1.4 Study Year Specific Experience

The majority of the participants in this study raised concerns with the 2nd year simulation debriefing activity. Amongst the 3 years that were explored, 2nd year was expressed to be the least favourable with regards to debriefing. Adopting any type of conversational structure whether three or multiple phased as stated by Sawyer, et.al, (2016) and Rudolph, et.al, (2008), the UJ will enable to standardise patient simulation debriefing activity and eliminate inconsistencies in practice. Faculty development will capacitate all facilitators and enable them to apply acquired knowledge and skills aligned with the adopted conversational structure (Cheng, et.al, 2015).

Below quotes are inputs from the participants:

"I think the biggest thing is just to keep it consistent from first year till third year, because sims do get more difficult and just because you did sims in first year and was debriefed well in first year, it helps with the structure but it doesn't if you have structure but the newer interventions and the newer… the higher difficulty of sims you don't get the proper debrief like you did in first year". Participant #9

"So let's just have a foundation that's across the board and then you can just build on that, obviously because as the simulations get more complex the simulation gets harder and then the debriefing gets obviously a bit longer. But across the board maybe procedures, ideal treatment plan, objectives of the thing, Standard, across the board. I think that would be a bit easier for students to incorporate, to get into especially going from one year to the next year. So instead

of from one personal preference, Facilitator's personal preference to another personal preference. It's not that personal preference anymore. So it will be – I think it will be much better if it's – if debriefing is just standardised, just standardised". Participant #10

5.2 Summary of Recommendations

a. UJ, department of EMC should consider adopting a standardised conversational structures to be used during classroom practise and assessment patient simulation debrief activities.
b. The department should develop a formal faculty development plan for SBME inclusive of patient simulation debriefing. This should be inclusive of strategic tutors prior to being allowed to teach students.
c. Patient simulation debrief should be inclusive of exploring students emotional response and impact, thus affording a learning and teaching opportunity to both student and lecturer.
d. 2nd year SBME and debriefing activities should be aligned to other years of study with respect to lecturer approach and systems in place.

5.3 Conclusion

Paramedic students at the University of Johannesburg, Department of EMC have expressed an overall positive experience with regards to learning from patient simulation debriefing activity. The students also highlighted areas of concern that need to be strengthened for the efficiency of SBME to be fully realised. Second year classroom practice simulation debriefing including debriefing of assessment patient simulation across all years of study were the major concerns raised. Adopting a uniform debriefing conversation structure for the EMC department, utilised by all facilitators across the years of study, for both practice and assessment simulation debriefing would aid in addressing the raised concerns.

Faculty development focusing on capacitating both the full-time teaching staff and the strategic tutors, will ensure that simulation debrief is a competency share amongst all the teaching staff and thus eliminating the inconsistency between facilitator proficiency in SBME. Faculty development is an effective way of ensuring that the teaching staff acquire the necessary skills

and knowledge to be able to efficiently apply SBME and conduct effective debriefs enhancing student learning opportunities.

The findings of this study provide important data for the University of Johannesburg, Department of EMC to consider and possibly implement specific changes as recommended by the students and reported in this research.

EMC education is one of the largest consumers of SBME. Most EMC programs emphasise practical competency as the core focus for the profession, this ideology is further incorporated into the programs' curricula designs. The findings of this research paves the way for future research within the area of SBME, specifically debriefing in the local and international EMC settings. The research is not intended to be limited to areas already identified but to also extend into using different methodologies i.e. mixed method study that will involve facilitators and the program manager, extended scope beyond UJ and include other universities that offer the same/ similar program/s and also use SMBE as part of pedagogy.

The findings of this study confirm that simulation debriefing is core in the learning process of students as part of SBME. The conversation between the students and facilitators post an experience (i.e. simulation) triggers individual reflection/s and group discussions that aids into formulating a common understanding. The research question focused on students and did not explore the experiences of the teaching staff, which is a limitation for this study and an opportunity for extended future studies.

References

Aghera, A., Emery, M., Bounds, R., Bush, C., Stansfield, R.B., Gillett, B., Santen, S.A., (2018), "A Randomized Trial of SMART Goal Enhanced Debriefing after Simulation to Promote Educational Actions", *Western Journal of Emergency Medicine*, **19**(1): 112-120

Ali, A.A., Musallam, A., (2018). "Debriefing Quality in Nursing Education Simulation-Based Education", *Clinical Simulation in Nursing*, **16**, 15-24

Boet, S., Bould, M. D., Bruppacher, H. R., Desjardins, F., Chandra, D. B., Naik, V. N., (2011). "Looking In The Mirror: Self-Debriefing Versus Instructor Debriefing for Simulated Crises", *Critical Care Medicine*, **39**(6), 1377-1381

Boet, S., Bould, M. D., Sharma, B., Revees, S., Naik, V. N., Triby, E., Grantcharov, T. (2013), "Within-Team Debriefing Versus Instructor-Led Debriefing for Simulation-Based Education: A Randomized Controlled Trial", *Annals of Surgery*, **258**(1), 53-58.

Braun, V., Clarke, V., (2006), "Using Thematic Analysis in Psychology", *Qualitative Research in Psychology*, **3**(2), 77-101

Burnard, P., Gill, P., Stewart, K., Treasure, Chadwick, B., (2008), "Analysing and Presenting Qualitative Data", *British Dental Journal*, **204** (8), 429-432

Burns, C.L., (2015), "Using Debriefing and Feedback in Simulation to Improve Participant Performance: An Educator's Perspective", *International Journal of Medical Education*, **6**,118-120

Cheng, A., Grant, V., Dieckmann, P., Arora, S., Robinson, T., Eppich, W., (2015), "Faculty Development for Simulation Programs: Five Issues for the Future of Debriefing Training", *Simulation in Healthcare*, **10**(4), 217-222

Cheng, A., Morse, K. J., Rudolph, J., Runnacles, J., (2016), "Learner Centred Debriefing for Health Care Simulation Education Lessons for Faculty Development", *Simulation in Healthcare*, **11**(1), 32–40

Creswell, J.W., (2014), *Research design (4th ed.)*, California, Sage Publications

Dieckmann, P., Molin Friis, S., Lippert, A., Ostergaard, D.,(2009), "The Art and Science of Debriefing in Simulation: Ideal Practice", *Medical Teacher*, **23**(2), 287-294

Dismukes, R. K., Gaba, D. M., Howard, S. K., (2006), "So Many Roads: Facilitated Debriefing in Healthcare", *Simulation in Healthcare*, **1**, 23-25

Dufrene, C., Yung, A., (2014), "Successful Debriefing – Best Methods to Achieve Positive Learning Outcomes: A Literature Review", Nurse *Education Today*, **34**, 372-376

Elliot, R., Timulak, L., (2003), *Descriptive and interpretive approaches to qualitative research*, retrieved from:
http://nideffer.net/classes/GCT_RPI_S14/readings/interpretive.pdf

Eppich, W., Cheng, A., (2015), "Promoting Excellence and Reflective Learning in Simulation (PEARLS) Development and Rational for Blended Approach to Health Care Simulation Debriefing", *Simulation in Healthcare*, **10**(2), 106-115

Fanning, R. M., Gaba, D. M., (2007). "The Role of Debriefing In Simulation Based Learning", *Simulation in Health Care*, **2**(2), 115-125.

Fischer, C.T., (2009), "Bracketing In Qualitative Research: Conceptual and Practical Matters", *Psychotherapy Research Methods*, **19**(4-5):583-590

Gardner, R., (2013), "Introduction to Debriefing", *Seminars in Perinatology*, **37**(3), 166-174

Garden, A.L., Le Fevre, D.M., Waddington, H.L., Weller, J.M., (2015), "Debriefing After Simulation-Based Non-Technical Skill Training in Healthcare: A Systematic Review Of Effective Practice", *Anaesthesia and Intensive Care*, **43**(3):300-308

Guba E.G.,(1981) Criteria for assessing the trustworthiness of naturalistic inquiries, *Educational Communication and Technology Journal* 29: 75–91.

Hartwell, D.A., Grayling, A., Kennedy, R.R., (2014), "Low Cost High Fidelity Anaesthetic Simulation", *Anaesthesia and Intensive Care*, **42**, 371-377

Hutchinson, T., Cochrane, J., (2014), "A Phenomenological Study into The Impact of The Sign Off Mentor in The Acute Hospital Setting", *Nurse Education Today*, **34**, 1029-1033

Issenberg, B.S., McGaghie, W.C., Petrusa, E.R., Gordon, D.L., Scalese, R.J., (2005), "Features and Uses of High Fidelity Medical Simulations that Lead to Effective Learning: A BEME Systematic Review", *Medical teacher,* **27**(1), 10-28

Jaye, P., Thomas, L., Reedy, G., (2015), "The Diamond: A Structure for Simulation Debrief", *The Clinical Teacher,* **12**,171-175

Kelly, M. A., Hager, P., Gallagher, R., (2014). "What Matters Most? Students' Rankings of Simulation Components That Contribute To Clinical Judgment", *The Journal of Nursing Education,* **53**(2), 97-101

Kihlgren, P., Spanager, L., Dieckmann, P., (2015), "Investigating Novice Doctors' Reflections in Debriefings After Simulation Scenarios", *Medical Teacher*, **37**: 437–443

Kolb, D.A., (1984), "Experiential Learning: Experience as a Source of Learning and Development". Englewood Cliffs, NJ: Prentice Hall.

Krauss, S.E., (2005), "Research Paradigms and Meaning Making: A Primer", *The Qualitative Report,* **10**(4): 758-770

Lavoie, P., Pepin, J., Boyer, L., (2013), "Reflective Debriefing to Promote Novice Nurses' Clinical Judgment After High-Fidelity Clinical Simulation: A Pilot Test", *Canadian Association of Critical Care Nursing,* **24**(4), 36-41

Lederman, L.C., (1992), "Debriefing: Towards a Systematic Assessment of Theory And Practice*", Simulation Games,* **23**(2), 145-160

Levett-Jones, T., Lapkin, S., (2014). "A Systematic Review of The Effectiveness of Simulation Debriefing in Heath Professional Education", *Nursing Education Today,* **34**, e58-63

Maguire, M., Delahunt, B., (2017), "Doing a Thematic Analysis: A Practical, Step-by-Step Guide for Learning and Teaching Scholars", *All Ireland Journal of Teaching and Learning in Higher Education,* **3**, 33501-33514

Mann, K., MacLeod, A., (2010), "Reflection and Reflective Practice in Health Professions Education: A Systematic Review", *Advance in Health Science Education*, **14**, 595-621

Maran, N.F., Glavin, R.J., (2003), "Low to High Fidelity Simulation-A Continuum Of Medical Education?", *Medical Education,* **37**, 22-28

Maree, K., (2013), *First steps in research (13th ed.),* Pretoria, Van Schaik Publisher

McGaghie, W.E., Issenberg, S.B., Petrusa, E.R., Scalese, R.J, (2010), "A Critical Review of Simulation-Based Medical Education Research: 2003–2009", *Medical Teacher,* **44**, 50-63

McGaghie, C.W., (2011), "Use of Simulation to Assess Competence and Improve Healthcare", *Medical Science Educator,* **21**(3), 261-263

Mileder, L.P., Vajda, C., Wegscheider, T., (2015), "Patient Death in Simulation Based Medical Education", *International Journal of Medical Education,* **6**, 109-110

Mojtaba, V., Hannele, T., Terese, B., (2013), "Content Analysis and Thematic Analysis: Implications for Conducting a Qualitative Descriptive Study", *Nursing and Health Sciences,* **15**, 398–405

Motola, I., Devine, L. A., Chung, H. S., Sullivan, J. E., Issenberg, B., (2013) "Simulation in Healthcare Education: A Best Evidence Practical Guide. AMEE Guide No. 82", *Medical Teacher,* **35(**10), e1511-e1530

Oxford on line dictionary, retrieved from: https://en.oxforddictionaries.com/

Rudolph, J.R., Simon, R., Raemer, D.B., Eppich, W.J., (2008), "Debriefing as Formative Assessment: Closing Performance Gaps in Medical Education", *Academic Emergency Medicine,* **15**(11), 1010-1016

Rudolph, J. W, Raemer, D. B., Simon, R., (2014). "Establishing a Safe Container For Learning in Simulation", *Simulation in Healthcare*, **9**, 339-349

Sandars, J., (2009), "The Use of Reflection in Medical Education: AMEE Guide No. 44", *Medical Teacher,* **31**, 685-6950

Sandelowski, M., (2000), "Focus on Research Methods Whatever Happened to Qualitative Description", *Research in Nursing and Health,* **23**, 334-340

Sawyer, T., Eppich, W., Brett-Fleegler, M., (2016), "More Than One Way to Debrief, A Critical Review of Healthcare Simulation Debriefing Methods", *The society of simulation in healthcare,* **11**(3), 209-217

Schön, D. A., (1991), "The Reflective Practitioner: How Professionals Think in Action", Aldershot, England: Avebury/Ashgate.

Shinnick, M. A., Woo, M., Horwich, T.B., Steadman, R., (2011), "Debriefing: The Most Important Component in Simulation?", *Clinical Simulation in Nursing*, **7**, e105–e111

South Africa, Department of Health, (2017), "*National Emergency Care Education and Training Policy*" available at

http://www.health.gov.za/index.php/2014-03-17-09-09-38/policies-and-guidelines/category/327-2017po?download=2123:necet-policy

(accessed 4 June 2019)

Sutton, J., Austin, Z., (2015), "Qualitative Research: Data Collection, Analysis, and Management", *Canadian Journal of Hospital Pharmacy*, **68**(3), 226-231

Tannenbaum, S.I., Cerasoli, C.P., (2013), "Do Team and Individual Debriefs Enhance Performance? A Meta-Analysis", *Human Factors and Ergonomics Society*, **55**(1), 231-245

Taylor, D.C.M., Hamdy, H., (2013), “Adult Learning Theories: Implications for Learning and Teaching in Medical Education: AMEE Guide No. 83”, *Medical teacher*, **35**, e1561-1572

Thistlethwaite, J.E., (1999), “Integrating Communication Skills and History-Taking”, *Medical Teacher*, **21**(1), 83-84

Tremblay, M., Lafleurb, A., Leppinkc, J., Dolmansc, D.H.J.M., (2017), “The Simulated Clinical Environment: Cognitive and Emotional Impact Among Undergraduates”, *Medical Teacher*, **39**(2),181-187

Tsingos, C., Bosnic-Anticevich, S., Smith, L., (2014), “Reflective Practice and Its Implications for Pharmacy Education”, *American Journal of Pharmaceutical Education*, **78** (1),1-10

Van de Ridder, J. M., Stokking, K. M., McGaghie,W. C., ten Cate, O. T. J, (2008). “What is Feedback in Clinical Education?”, *Medical Education*, **42**(2), 189-197

Van Heukelom, J. N., Begaz, T., Treat, R., (2010), “Comparison of Postsimulation Debriefing Versus In-Simulation Debriefing in Medical Simulation”, *Simulation in Healthcare*, **5**(2), 91-97

Voyer, S., Hatala, R., (2015), “Debriefing and Feedback Two Sides of The Same Coin”, S*imulation in Health Care*, **10**(2), 67-68

Williams, B., Abel, C., Khasawneh, E., Ross, L., Levett-Jones, T., (2016), “Simulation Experiences of Paramedic Students: A Cross-Cultural Examination”, *Advances in Medical Education and Practice*, **7,** 181-186

Appendices

Appendix A: Ethics Clearance Letters

R14/49 Mr Andrew Mosiane

HUMAN RESEARCH ETHICS COMMITTEE (MEDICAL)

CLEARANCE CERTIFICATE NO. M171063

NAME: (Principal Investigator)	Mr Andrew Mosiane
DEPARTMENT:	Centre for Health Science Education Department of Emergency Medical Care University of Johannesburg
PROJECT TITLE:	Experiences of University of Johannesburg Paramedic Students in the Debriefing of Patient Simulations Activities
DATE CONSIDERED:	27/10/2017
DECISION:	Approved unconditionally
CONDITIONS:	
SUPERVISOR:	Mrs Shirra Moch
APPROVED BY:	Professor P. Cleaton-Jones, Chairperson, HREC (Medical)
DATE OF APPROVAL:	13/12/2017

This clearance certificate is valid for 5 years from date of approval. Extension may be applied for.

DECLARATION OF INVESTIGATORS

To be completed in duplicate and **ONE COPY** returned to the Research Office Secretary on the 3rd floor, Phillip Tobias Building, Parktown, University of the Witwatersrand. I/We fully understand the conditions under which I am/we are authorised to carry out the above-mentioned research and I/we undertake to ensure compliance with these conditions. Should any departure be contemplated, from the research protocol as approved, I/we undertake to resubmit to the Committee. **I agree to submit a yearly progress report**. The date for annual re-certification will be one year after the date of convened meeting where the study was initially reviewed. in this case, the study was initially review October and will therefore be due in the month of October each year. Unreported changes to the application may invalidate the clearance given by the HREC (Medical).

Principal Investigator Signature Date

PLEASE QUOTE THE PROTOCOL NUMBER IN ALL ENQUIRIES

FACULTY OF HEALTH SCIENCES

RESEARCH ETHICS COMMITTEE

NHREC Registration no: REC-241112-035

REC-01-01- 2018

7 February 2018

TO WHOM IT MAY CONCERN:

Researcher: MOSIANE, AR

TITLE OF RESEARCH PROJECT: Experiences of University of Johannesburg Paramedic Students in the Debriefing of Patient Simulations Activities

DEPARTMENT OR PROGRAMME: NON – DEGREE PURPOSES

SUPERVISOR: Mrs S Moch **CO-SUPERVISOR:**

The Faculty Research Ethics Committee has scrutinised your research proposal and confirm that it complies with the approved ethical standards of the Faculty of Health Sciences; University of Johannesburg.

The REC would like to extend their best wishes to you with your postgraduate studies.

Yours sincerely

Prof C Stein

Chair : Faculty of Health Sciences REC

Tel: 011 559 6564

Email: cstein@uj.ac.za

Appendix B: Interview Guide

SEMI-STRUCTURED INTERVIEW PROBING QUESTIONS

1. What is your experience in patient simulation debriefing?
2. How is the patient simulation debrief conducted?
    a. What is the role of the facilitator and other students?
    b. What structure is used to debrief patient simulations?
    c. How is your performance debriefed in relation to simulation objectives?
    d. How is your emotions and rational explored during the debriefing?
3. Does the patient simulation debrief have any impact on your future performance?
4. Is there any difference to your experiences of patient simulation debriefing over your different years of study?
5. Do you think patient simulation debriefing can be improved? Elaborate.