Scripting of Domestic-violence Simulations to Improve Prehospital Emergency-care Diagnostic Probity and Healthcare Responsiveness in Low- to Middle-income Countries

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ABSTRACT

The global occurrence of domestic violence is a disturbing problem which leaves both victims and interventionists with a sense of helplessness. Emergency-care providers have been identified as a critical contact point for victims. The interlude between the act of violence and the victim's hospitalisation provides opportunities for screening, medical care and appropriate referral (primary, secondary and tertiary prevention). Both the current training of emergency-care providers and research on the domestic-violence response are unjustifiably minimal. Simulation training is not foreign to prehospital emergency care. However, the use of domestic-violence-related scripted scenarios (to promote diagnostic probity) is novel. Therefore, the primary research question was: How does the scripting of evidence-informed simulations of domestic-violence cases enhance practitioner responsiveness and patient safety among prehospital emergency-care students?

The paradigm and methodology for this qualitative study was social constructivism and grounded theory respectively. The data collection comprised a literature review, focus-group discussions and participant observation during patient simulations. The data was analysed through the method of constant comparative analysis.

It was found that the scripting of simulations with the use of peer-based training may be an effective method of achieving improved responsivity to domestic violence. Traditional EMS training with expensive manikins may not be as effective for this purpose, as students require a level of feedback and fidelity through which they can convey their empathy and history-taking skills. Further research should be conducted to determine the most effective methods for assessing standardised domestic-violence patient simulations.

Keywords: Domestic violence, gender-based violence, medical simulation, patient script, emergency care, emergency-care provider, screening implementation, prehospital, qualitative, social constructivism, grounded theory, low- and middle-income countries (LMICs)

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INTRODUCTION

Domestic violence (DV) is a complex healthcare burden for South Africa and the rest of the world (World Health Organization/WHO, 2013). This act of violence is a gross violation of human rights and in South Africa particularly, it is on the rise. A survey conducted by Stats SA in partnership with the South African Medical Research Council (SAMRC), found that 21% of women 18 years old and older reported that they had experienced violence at the hands of a partner (South Africa, 2017). Globally, in 2012, women were as likely to die by the hands of an intimate partner or a family member as they were to die by the hands of a stranger (UN, 2017). Emergency-care providers employed by Emergency Medical Services (EMS), firefighters and the police service have a distinguishing characteristic in that they are by default the first interventionists on the scene of an emergency. EMS possess a unique trifecta of capabilities allowing them to conduct primary, secondary and tertiary-level prevention in relation to DV (Naidoo, Knight, & Martin, 2013). Prehospital emergency-care providers are in an advantageous position for the early detection of DV occurrences, allowing them to screen, medically treat and refer victims to appropriate care (specialised medical or psychological care), as well as collect/maintain forensic evidence (Naidoo et al., 2013).

Despite the global concern, there is a paucity of studies directly pertaining to emergency-care (EC)-provider responses to victims of domestic violence, particularly in low- to middle-income countries (LMICs). Little research effort has been made to enhance prehospital emergency-care providers' responses to victims of DV, and at the time of this study, no direct research was found on how South African EC-provider responses to DV can be improved with specialised medical simulation training. The aim of the study was therefore to determine how EC-provider responses to DV can be enhanced through the deliberate scripting of DV-based simulations.

BRIEF OVERVIEW OF THE LITERATURE ON SIMULATION-BASED MEDICAL EDUCATION IN EMERGENCY CARE

Simulation is defined by the *Healthcare Simulation Dictionary* as "A technique that creates a situation or environment to allow persons to experience a representation of a real healthcare event for the purpose of practice, learning, evaluation, testing, or to gain understanding of systems or human actions" (Lopreiato, 2016, pp. 34). Simulation-based education is increasingly used in healthcare for training, research and assessment, as a way of mitigating the challenges of present-day healthcare and ensuring the safety of

patients (Tun, Alinier, Tang & Kneebone, 2015). The professions which benefit the most with this approach to training are the ones which inherently involve complex situations.

During medical education, students are exposed to real patients so that they can acquire the necessary skills which form the basis of their profession. These skills are associated with clinical and non-clinical learning outcomes, the former being interventions such as intravenous access, oxygen therapy etc, and the latter including outcomes such as patient/family communication and conveying sympathy. There is an ethical and moral obligation to provide optimal treatment to patients and to ensure their physical and emotional wellbeing. However, paradoxically, students honing their skills may indiscriminately place patients at risk of unnecessary harm (Lateef, 2010). The value proposition of simulation training is that learners are free to make decisions without any life-altering repercussions. There is no risk of self-harm, or harm of the simulated patient or bystanders (Alharbi, 2016). Medical, nursing and various other healthcare staff therefore use this form of training to develop and refine their skills, repeatedly if necessary, but without the risk of harm associated with 'conditioning' in the traditional sense.

The use of simulation training not only enhances technical and functional training. Improvements can also be made in problem-solving and decision-making skills. The skills of interpersonal communication or team competencies may also be improved (Lateef, 2010). The common factors in these potential improvements are the requirements of active listening and collaboration, in addition to foundational knowledge and practical skills. The evidence for the effectiveness of simulation training in the improvement of patient-care outcomes is not strong. The relatively few studies which were conducted appear to confirm an improvement in clinical performance after simulation training (in the context of anaesthesia) (Shear, Greenberg & Tokarczyk, 2013). Smith and colleagues were also able to show that simulation training improved perinatal care and outcomes, decreased litigation claims and reduced midwifery sick leave (Smith, Siassakos, Crofts & Draycott, 2013).

In the academic sector, however, there is a considerable body of evidence indicating the improvement of educational outcomes with the use of simulation training. It has been shown that learners who perform simulated tasks show noticeable improvement when an additional simulated task is completed (Lateef, 2010). Excluding skill performance, researchers who were attempting to find a link between simulation training and an improvement in patient safety noted an increase in the confidence of students (based on self-reporting in questionnaires) when performing various skills; they also noted an improvement in student preparedness (Green, Tariq, & Green, 2016).

Simulation-Based Medical Education (SBME) will be the specific term used in the context of EC-provider training. SBME can consist of various learning orientations to achieve different results, such as the behaviourist, cognitivist, humanist, social learning and constructivist approaches (Torre, Daley, Sebastian & Elnicki, 2006). There has not been a proven 'best-fit' learning orientation which supports EC-provider students' approaches to domestic violence incidents.

International data from the United States of America suggests that simulation training may be effective in enhancing the confidence and competence of nursing students when addressing interpersonal violence (Wood, 2016). In Israel, standardised patients were used to improve the perceived capabilities and overall management of DV cases for physicians. The improvements came from addressing the lack of knowledge, lack of skills and psychological difficulties associated with domestic violence (Shefet, Dascal-Weichhendler, Rubin, Pessach, Itzik, Benita & Ziv, 2007). A study by Cox-George et al., in the United Kingdom, found that simulation teaching is likely the best way to teach under- and postgraduate students about DV as it closely resembles real-life clinical scenarios. There are also the added benefits of incorporating multi-disciplinary approaches and of feedback and debriefing in a protected environment (Cox-George, Moffatt & Jones, 2017).

UNDERSTANDING THE VALUE OF SBME LEARNING ORIENTATIONS

There are multiple learning orientations, each with their own attributes and areas of benefit. The behaviourist orientation makes use of 'Learning Theory'. This theory is teacher-centred, where the role of the teacher is to manipulate the environment/objects in the environment to provoke a predefined response from the learner. The behaviourist learning orientation is particularly advantageous when developing the learner's psychomotor skills, such as programming a syringe driver or inserting an intravenous catheter (Torre et al., 2006). The cognitivist orientation "focuses on the learner's cognitive structures and internal environment; the learner will make use of his/her insight, perceptions, information processing, and memory to facilitate learning by assigning meaning to events" (Torre et al., 2006, pp. 904).

In contrast, social constructivism is a theory of knowledge which maintains that all cognitive functions, including learning, are dependent on interactions with others (such as parents, lecturers and peers) (McInerney, 2002). It is for this reason that for learning to take place, a successful collaborative method is warranted. The teaching must occur in a situationally specific and contextually bound medium for learning to take place (McInerney, 2002). Social constructivism has a role to play in medical simulation, in specific and appropriate learning opportunities. The learners can make meaning from the practical lessons (in the

form of simulations) by interacting with one another and with the simulation facilitator (which could be educational staff or even other learners), and by drawing on past experiences (real-life or simulated). The situation or context of the simulation can, however, influence the achievability of the learning outcome.

RESEARCH DESIGN AND METHODS

RESEARCH DESIGN

Within the social-constructivist paradigm (Charmaz, 2008), a qualitative design was utilised, owing to its value in expanding knowledge on a topic of which little is known (Griffiths & Mooney, 2012). This design is advantageous to explore the perceptions (formed through knowledge, attitudes, beliefs, and practices) of participants concerning the topic at hand (domestic-violence-related emergency care). Using focus-group discussions and participants' observation, non-verbal language could be observed, providing rich data that included body language, mannerisms and signs of distress (such as sweating or the use of eye contact) (Oltmann, 2016). By contrast, a quantitative design would not have been appropriate, as it was unlikely to provide an in-depth description of the nature of the underpinning complex events (Fahie, 2014). This study used focus-group discussions before *and* after simulation testing, as well as participant observation *during* the simulation testing. Participant observation further concretes the use of a qualitative design, as simulation training is a display of human behaviour that is classically a qualitative observation.

Furthermore, the study followed a grounded theory design to guide, collect and code data in order to identify emerging categories and generate practice-theory (Charmaz, 2008). An assumption is made that although the physical world exists, (apart from perception) reality itself is social (Feeler, 2012). This reality emerges in the language individuals use to refer to their experiences (and perceptions) of that world, in conjunction with the researcher's involvements and interactions. What the researcher may bring to the data influences what they see in it (Charmaz, 2008).

Social constructivism is a theory of knowledge which stipulates that all cognitive functions, including learning, are dependent on interactions with others (such as parents, lecturers, peers). The central idea of the paradigm is that human learning and knowledge are constructed and shared through social interaction, rather than resting on individual experience (Vygotsky, 1978). Vygotsky's theory of the Zone of Proximal Development may tie into the teaching of DV to EC-provider students, as it acknowledges that there are ranges of skills or tasks which may be too difficult for an individual to master alone. However, with assistance or guidance by peers and/or more knowledgeable individuals, the task can be mastered

(Vygotsky, 1978). It is for this reason that for learning to take place, a successful collaborative method is necessary. In the *Handbook of constructionist research* Charmaz (2008) stated that the extent to which grounded theorists invoke social constructionist premises depends on their epistemological stance and approach to research practice. The varied disciplines of psychology, education, nursing, and occupational and environmental medicine have all made use of Charmaz's theory in developing their constructivist approach for their respective studies (Mills, Bonner & Francis, 2006). This study (which easily draws from the philosophies of education, psychology, forensics, medicine and social work) uses the approach proposed by Charmaz.

PARTICIPANT AND SITE SELECTION

The sampling of the study participants was purposive. The inclusion criteria for participant selection consisted of EC providers who were registered as undergraduate students in the Bachelor of Emergency Medical Care (BEMC) programme at the Cape Peninsula University of Technology, Cape Town, South Africa, who, when qualified, would register with the Health Professions Council of South Africa (HPCSA) as independent practitioners. Postgraduate students were excluded, since simulated practice is absent in postgraduate study. The ideal participant was a student who was regularly training in the simulated environment, so as to avoid the performance anxiety and associated 'confounding' of first-time simulated practice. The value proposition of simulated clinical practice may be relative to the design of the educational programme, hence a single university familiar to the researcher and participants was selected. These criteria allowed for rich data to be collected during the focus-group discussions and simulation testing, as some participants may have had years of experience while others had no experience in encountering domestic violence in the prehospital setting (notwithstanding their personal experiences with DV). People not registered with the institution or the HPCSA (as an Emergency Care Practitioner Student) at the time of the study were excluded. Finally, because this sampling was based on volunteerism, people who did not wish to take part in the study were self-excluded.

There was no unfair exclusion or inclusion. Participants were recruited exclusively on the grounds of volunteering. The age, gender, race, years of experience and religious views of the participants were not predefined or targeted. Twenty-nine participants were recruited for the study. This number of participants allowed for a lively discussion during focus-group discussions, but also maintained a small enough group so that everyone would be able to contribute to the discussion (Rewey, Zimmerman & Scholz, 2011). The participants were separated into groups based on their year of study (first year, second year, etc). The recruitment strategy was based on direct recruitment of voluntary participants and involved informed

consent. Ethics approval for the study was granted by the university's Departmental Research Ethics Committee *(CPUT/HW-REC 2018/H28).*

RESEARCH METHODS

To enable theoretical propositioning (as is the goal of grounded theory), the intent of the study was to conduct between-method triangulation. The methods included a literature review, focus group discussions (FGDs) (held before and after simulated practice), and participant observation of simulated practice.

PRE-AND POST-SIMULATION FOCUS GROUP DISCUSSIONS

There were eight FGDs throughout the data-collection period; one before and one after a patient simulation session for each of the four groups. There was an average of seven participants per FGD. These focus-group discussions were used to generate information on collective views and to determine the rationale for those views. They were useful in generating a rich understanding of the participants' perceptions. A multi-method design was used in the discussions, to explore the topic. Group languages and narratives derived from the discussions were used in later stages of the data-collection phase. Different participant groups may have different interpretations of or beliefs about a specific topic. Alternatively, each participant cohort also has the potential to bring across a belief which is identical to that of other cohorts, although they may use different vernaculars/narratives to portray this belief. The data gained in these discussions was used to help develop four patient scripts for implementation in the participant observation phase of data-collection.

As indicated, this study was based on a grounded theory methodology. These FGDs lasted approximately 60 minutes each and all were audio recorded. The FGD data collection procedure was performed over a period of one month. During this time, EC provider/student personal beliefs and professional attitudes regarding DV victims and emergency-care simulated practice were documented. The focus groups were facilitated by the researcher, as this ensured a standardised approach to data-collection and participant interaction. Having different facilitators for these discussions could have caused exposure to confounding factors, such as facilitators with different worldviews, different methods of phrasing questions and different ways of handling sensitive topics. Having one focus-group facilitator deepened the authenticity of the study and created an insider status.

PARTICIPANT OBSERVATION OF PATIENT SIMULATIONS

Participant observation has utility when there are multiple opportunities to observe nonverbal expressions of feelings and interactions between participants. It is particularly useful when there are interactions between individuals who are unable/unwilling to share, due to societal norms or out of respect to other participants (Kawulich, 2005).

For this study, the participants were asked to separate into two groups (one being the EC providers and one being the DV victims). The standardised patients were provided with a pre-brief before the scenario (indicating patient characteristics, mannerisms, medical history, social history, etc.). The standardised patients were scripted not to dialogue but rather to the actions/inactions of the participant playing the role of the EC provider. Improvisation was encouraged for the scenario to flow realistically.

The instrumentation used in this study were the Standardised Patient Briefs 1 to 4. The scripts were designed online on iRIS™ software. iRIS™ is a "web-based platform created for the purpose of designing high-quality scenarios that offer the best learning experience" possible (iRIS™, n.d.). The evidence which guided the creation of the scripts consisted of South African statistics about the demographics of victims. This victimology described the variables which could be adjusted to create simulations. Table 1 indicates the various headings which aided in the design of the scripts. The gender, age, marital status, citizenship status, underlying health conditions, home environment, injury patterns and the degree of the victims' acceptance of the violence are all independently adjustable factors which make up the victim descriptions in the simulation. All patients in the designed scripts were female, as they are the most likely victims of DV. The researcher recognises that DV occurs across all genders; however, the most common occurrence of DV is gender-based violence (generally male-on-female violence). Using the 2016 Statistics South Africa report (South Africa, 2017), it was found that the most common age group of victims of physical violence perpetrated by a partner, was the range 18 to 24 years old. Therefore, all but one patient was aged within this range. The patient scripts did not have a race assigned to the victim. In South Africa, separated and divorced women are more likely to experience DV (South Africa, 2017). For the purpose of simulation, the patients in DV cases 1, 3 and 4 were still married to their abusers, and DV case 2 had recently broken up with her partner (ex-boyfriend). The demographics of the patients in DV cases 3 and 4 were almost identical; however, the patient in DV case 3 was an undocumented immigrant (with no support from family or friends). The description of the simulation varied according to the individual simulation. The description included a brief identification of the type of call the EC-provider participant was 'dispatched' to (e.g. assault, fall from height, abdominal pain), the narrative of what had happened to the patient, the general

impression of the patient, and how the patient will respond to being transported for further care. The abuser was not physically present in the performed simulations; however, the threat of his return was made in all of the cases.

Table 1: Standardised Patient Script Domains

Patient demographics	Guided by South African statistics.
Description	The description includes a brief identification of the type of call the EC-provider participant was 'dispatched' to, the narrative of what happened to the patient, the general impression of the patient, and how the patient will respond to being transported for further care.
Presenting history	This is what the EC-provider participant was told just before the simulation started.
Previous medical history and allergies	The medical histories of the scripted patients were mostly insignificant in all of the scripts. The patient in DV case 4 was HIV-positive and on medication.
Patient's opening statement	There were no quoted lines the standardised patient had to say. However, each DV case had its guideline for how the patient should respond to the EC provider at the start of the simulation.
Presentation and behaviour of patient	The general appearance/body language/mood and extent of communication varied according to the extent of the injuries sustained and the victim's outlook.
Open-ended questions and guidelines	The patients in DV cases 1 and 2 shared information openly. However, the patients in DV cases 3 and 4 required more questioning and trust before they could share more details.
Patient's history of violence	This section was specific to the individual injuries sustained.
Family medical history	None of the scripts had a patient with a family medical history.

Social medical history	None of the patients were abusing substances. Most of the patients did not have significant social support. Only 1 out of the 4 scripts had a patient who was currently employed.
Physical exam findings	This is what the EC provider would have discovered in his/her inspection of the patient. The injuries presented in the simulation were mostly confined to the central region (head and back) and limbs.
What should the patient expect from the visit?	All of the scripts had "professionalism, no judgement" under this heading.

Participant observation during simulated practice commenced soon after the initial focus group discussions. As this study used grounded theory as a methodology, there was no contrived focus during the participant observation. The time interval between the first FGD and the simulations allowed for patient scripts to be designed and drafted based on the information and evidence gained during the discussions. This preceded the literature review. It was essential for the simulations to be at a level that the participants would find challenging, yet still informative. The assumption was made that if the simulations were too in-depth and emotionally charged, the participants would struggle to achieve their outcomes of providing holistic care to the patient. The FGDs were therefore used to determine the extent of knowledge/experience of the participants so that suitably challenging simulations could be drafted. The implementation of DV related simulations was therefore based on the concept of knowledge scaffolding. There would be little value in having highly complicated and hyper-realistic simulations, when the knowledge-base of the student is ill-formed. Vygotsky's "Zone of Proximal Development" speaks to the above, as the content which needs to be covered in the simulation may be too difficult for the participant to master alone. However, "it can be mastered with the assistance or guidance of adults or more-skilled peers" (Vygotsky, 1962).

The total frequency of the simulations (n = 14) depended on the data gathered from the FGDs (to reach saturation). These simulations lasted from 7 to 19 minutes each. The purpose of the simulations was to outline the practitioner's approach to a DV victim in the prehospital setting. The simulations were video-recorded. The web-based software, iRIS®, was used to help design and implement the patient simulations. At no time during the simulations was the dignity of the participants impaired. Any participation from the

researcher, during the participant observation, was guided by educational best practice to not render participants vulnerable to undue bias and influence.

RESULTS AND DISCUSSION

The category, "Conducting effective DV-based simulations" (Table 2) emerged from the following selective codes: 'Potential value in peer-based training for DV-related simulations', 'The realism in DV-based simulations' and 'Factors that align to realistic simulations'. These selective codes were obtained from the data-triangulation of the pre-simulation FGDs, the simulations, and the post-simulation FGDs. Axial codes were developed from the raw data in the initial phase of data-analysis. These axial codes were used to develop the selective codes.

Table 2: Category Formation

Category formed	Conducting effective DV-based simulations		
Selective codes	Potential value in peer-based training with DV-related simulations	The realism in DV-based simulations	Factors that align to realistic simulations
Axial codes from pre/post-simulation focus-group discussions and participant observation during simulations	Weaknesses of doll-based simulations	The realism in DV-based simulations	Constitution of simulation realism
	Value in peer-to-peer training	Importance of standardised-patient briefing	Factors influencing simulation realism
	Simulations as a proxy for DV education	The value of patient scripting	Limitations of peer-based simulation training
		The value of a learning-centred simulation environment	Movement from traditional simulations to peer-based simulations

			The value in semi-structured simulations

Many of the topics of discussion in the post-simulation FGD were centred on the elements which can make a simulation life-like. For simulations to be effective in their role of training, realism was found to be essential. Participants found that responding to DV in the real world is made challenging because of the potentially hostile environment and the "unknown" (entering a house without suspecting DV). Because the simulations were performed in a "controlled environment" and the theme for the data-collection session was DV, this element of surprise was lost. The participants found that the simulations were extremely immersive in terms of the depth of conversation between the patient and EC provider, body language, patient history and presentation. They remarked that "Thought is being put into it [the simulation scripts]", and "More should be done". There was a connection made between the level of perceived realism in simulation training and the magnitude of effective learning. Simulations require outcomes, as well as limitations. At least one person (the standardised patient or the EC-provider student) should know when the simulation will end. This point came from a participant asking, "Where does it [simulation] begin and where does it end?"

It was found to be critical to have a standardised patient briefing before the simulation begins: "They should brief you … to instil the gravity of the sims."; and "Sim [simulation] victims should have a proper briefing – [the facilitator should start by] chatting to the victims". Simulations involving standardised patients are only as effective as the standardised patient is prepared. Standardised patients should be comfortable and knowledgeable about their role. Although the patient scripts were user-friendly, there was still a need to have the facilitator go through key points for individual standardised patients, before the commencement of the simulations. Scripting of the patient's role was found to be highly effective. Participants without experience in the prehospital environment or experience interacting with victims of DV were able to play the role of the patient effectively. One participant mentioned that, in his experience working with DV victims (in a previous academic programme), the participant (who only made use of the script to guide her presentation) performed in a manner indistinguishable from a real victim. Patient scripting was therefore critical to the progression of the simulation.

The environment in which the simulations took place was one which fostered comfort. Participants did not feel the subjective experience of judgment while performing their simulations. This is in contrast to the environment in which "normal" EMC simulations are performed. As is often remarked: "Someone breathing down your neck won't help". The subjective experience of the participants was that the DV

simulations were learning-centred, as opposed to "stress-testing" or an assessment-based event. A participant explained that DV simulation training was "a subtle art" and should be treated as such. The ability for feedback to occur from the victim's point of view was appreciated – participants were, for instance, able to tell each other if they were "sitting too close or too far away" during the simulation.

The lack of previous DV simulation training was evident in the observations. This was manifested in the almost identical DV victim approach, regardless of the participants' year of study. This suggested that, currently, the progressive years of study are not protective for victims, as one might expect of emerging healthcare professionals. There was a universal, pervasive uneasiness experienced by each of the participants. In times of student 'dis-ease', protocols have the inherent value of providing structure. The DV screening protocol provided the structured approach to the DV victim interaction. This was, however, a 'bare-bones' outline. The participants needed to add their own conversational techniques for the standardised patients to provide information. This was particularly important, as the standardised patients were guided (by the script) to not freely disclose information. The participants in this study agreed unanimously that the use of peer-based training in simulations can be beneficial generally, and specifically in DV education.

A study was conducted by Rantatalo, Sjöberg and Karp in 2018, entitled "Supporting roles in live simulations: how observers and confederates can facilitate learning". The objective of this study was to examine the extent and content of what students learn from participating in live simulations when they take part in roles other than that of a primary participant. The findings of the study (Rantatalo et al., 2018) resonate with the data collected in this study. It was determined that valuable information can be obtained from the participant acting as the DV victim. The standardised patient can provide face-to-face feedback in real time to the participant playing the role of the EC provider. The study by Rantatalo et al. (2018), used Swedish police trainees during their simulation education. It concluded that the participants who were engaged in simulations, but who were not the primary participants (the EC providers in this study), are crucial in producing realistic scenarios for the primary participant to act in. They can also effectively adjust the difficulty of the simulation, therefore contributing to the learning outcomes of the simulation (Rantatalo et al., 2018). The Rantatalo study supports the information gained in the data collection and it reinforces Vygotsky's theory of sociocultural learning, where the candidate needs to be engaged in the learning process with the assistance of other people (Vygotsky, 1978).

The topic of 'simulation realism' was common within all the groups of participants. A contrast was made between traditional manikin-based training and the use of peer-based training (participants with

standardised patient scripts). It was agreed that practising clinical procedures such as intravenous access and intubation on manikins was appropriate, but that gaining patient history (medical or social) was problematic. Similarly, encouraging EC-provider/patient dialogue between a student and a manikin appeared counter-productive, as the simulation facilitator would often take the role of speaking for the patient and any questions directed to the patient by the participant would be answered by the facilitator. The participants found this highly distracting and unrealistic, therefore hindering potential learning opportunities. In this study, the participants were able to make eye contact with another human being, who could react to poor conversational techniques/unwelcoming body language. Also, feedback could be provided from the victim's perspective, which could enhance future attempts at the victim/EC-provider encounter (simulated or real).

There is a growing base of evidence which indicates that the mere presence of a participant in a simulation does not necessarily imply learning. The simulation must be purposefully designed, with measurable outcomes, to potentiate active learning (Dieckmann, 2009; Hopwood et al., 2016; Sjöberg et al., 2019). The fidelity (realism) employed would be a function of the design choices and resource and creative limitations. DV responses are challenged by the limitations of measurable outcomes. In the category named 'Conducting effective domestic-violence-based simulations', the word 'effective' holds little value if outcomes cannot be evaluated. An outcome is a statement which reflects measurable change owing to an intervention/effort that was made (National Resource Center on Domestic Violence, n.d.). The outcome evaluation assesses what occurred as a direct result of the programme, and it must be "measurable, realistic and philosophically tied to program activities" (National Resource Center on Domestic Violence, n.d.:1). Victims' satisfaction ratings of EC providers' responsivity would be ideal, but this is largely unrealistic. Following up on victims is challenging, time-consuming and expensive and may bring increased risk of harm. The use of EC providers' self-reporting of their response can be beneficial, however this is not likely to be a true reflection of the DV response, due to self-reporting bias. Creating systems which can monitor victims' movement from one intervention to the next could assist in appraising uptake of referral, but may result in risk of coercion. Such systems would involve keeping track of when and where an EC provider made contact with the victim; where he/she was transported to (if transported); which facility doctor/nurse made contact; if the patient was referred to a social worker; if counselling services were utilised; if legal proceedings took place; if a victim shelter was used; and finally, if the victim later returned to the abuser (indicating a continuation or interruption of the cycle of abuse).

Future domestic-violence education of EC providers may very well include the use of simulation training in addition to theoretical sessions. The simulations required no equipment (implying that it is not resource-

intensive) and the only resources which were used were the patient scripts and a hard copy of the domestic-violence screening protocol.

CONCLUSION

The paradigm of social constructivism enabled the topic of domestic-violence (DV) intervention by emergency-care providers to emerge organically. The central idea of the paradigm is that human learning and knowledge are constructed and shared through social interaction, rather than being an individual experience (Vygotsky, 1978). The grounded-theory methodology, in turn, gave access to a poorly researched area. The validation of this methodology in the emergency-care (EC) field is evidenced by this study and may hold significant value for future research endeavours.

This study aimed to position EC providers as advocates for DV victims' interests during the (simulated or real) emergency-care interaction. The primary research question was answered by utilising data from a literature review, pre-simulation focus-group discussions, patient simulations with participant observation, and post-simulation focus-group discussions. The literature review indicated that although efforts were made to determine the use of simulations in various contexts, little research was done on simulation training for EC providers. Prior research was conducted on the thoughts, attitudes and beliefs of nurses, doctors and social workers about simulation. However, the evidence for EC providers in general, was limited. The literature review included evidence that was used to construct the patient simulations and scripts. This allowed the creation of simulations using real-world data, rather than personal judgement or experience. This was the first documented attempt at creating evidence-informed DV simulations for South African EC providers.

THE CONTRIBUTION TO KNOWLEDGE

The value proposition of domestic-violence simulated practice in EC is that future simulations can be developed using real-world statistics, thereby mitigating simulation facilitator bias in DV education. EC-providers' responsivity may be enhanced by allowing students to interact with standardised DV victims, who can provide a level of authenticity through which they can convey their empathy and hone history-taking skills, while receiving feedback during and after simulations – all of which are lacking in manikin-based simulated practice. This form of simulation training is inexpensive – therefore, resource intensity will not become a barrier to a scaled implementation of simulated practice which aims at enhancing domestic-violence intervention capacity within the academic sector and civil society.

THE RECOMMENDATIONS FOR PRACTICE/POLICY

Further research may be needed on how to best assess the outcomes of scripted simulations of DV cases for EC providers. Simulations need outcomes to make them effective (Rantatalo et al., 2018). There is little evidence to suggest the most effective method of assessing standardised patient simulations within a domestic-violence context (Heron et al., 2009), or in the EC-provider context. Like the phenomenon of domestic violence, domestic-violence simulations have an inherent complexity. Intuitively, it would be unwise to assess simulation participants on how well they follow a script, as the human dynamic is what makes scripted simulations beneficial. The quality of domestic-violence documentation in a peer-based simulation could be a component of a larger quality assessment. Victim intervention with rigorous quality-control measures for documentation will likely potentiate improvements for future emergency care.

There is secondary evidence suggesting that inter-professional training can be of benefit for cases such as domestic violence cases (Kuliukas, Oehlers & Berlingeri, 2016). There is thus room for further research into this proposition for the South African context, which may include the South African Police Services, Emergency Medical Services, hospital staff (doctors and nurses) and social workers. This may promote a culture of domestic-violence response within the public sector (stakeholders in domestic-violence intervention), thus supporting the needs of some of society's most vulnerable.

Domestic violence must be seen as a medico-legal concern for all those involved. The criminal act of DV is repetitive (and serial) in nature, and in its most violent form, may lead to grievous bodily harm, femicide and suicide. The United Nations reports that in 2012, globally, women were *as likely* to die by the hands of an intimate partner or a family member as they were to die by the hands of a stranger (UN, 2017). Poor or non-responses from emergency-care systems render the profession complicit in normalising the occurrence of domestic violence and in undermining opportunities for early detection and prompt care and referral. Provider responsiveness (in a professional capacity and in fulfilment of obligations) specific to domestic violence has not been appropriately stressed in emergency-care providers' training. It is imperative that EC providers respond to the health effects of DV by working to *interrupt* the cycle of abuse, provide supportive care for victims and protect and promote medico-legal evidence while performing their healthcare duties. Self-identified male and female caregivers have the opportunity to reframe their own attitudes about domestic violence and are *invited* (rather than *indicted*) to play a role in violence prevention. That we do this within the resource constraints of low- and middle-income countries, nuances the value proposition of simulation scripting for domestic-violence interruption.

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