

Evaluating Knowledge Management Capabilities During Crime Scene Processing in the Detective Service

Jacob Tseko Mofokeng¹, Mmabatho Portia Aphane²

¹ Tshwane University of Technology, Faculty of Humanities, Department of Safety and Security Management, Aubrey Matlakala Street, Soshanguve – K, Soshanguve, 0001, Pretoria, South Africa

² College of Law, School of Criminal Justice, Department of Police Practice, University of South Africa, Pretoria, South Africa

² Corresponding author: aphanmp@unisa.ac.za

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Abstract: Knowledge is, arguably, considered to be a prime asset for organisations, especially in the public sector organisations that are considered to be knowledge-intensive organisations. Forensic science departments are part of the public sector, whose primary mission it is to detect and prevent crime. Consequently, knowledge management (KM) is crucial in such a fast-paced environment as forensic science. The aim of this paper is to evaluate the level of knowledge management capabilities (KMCs) during the processing of the crime scene by the South African Police Service (SAPS). Thus, the initial investigative process requires speedy and effective use of knowledge from four main sources: objects and scenes; people; investigators' own experience; and knowledge-management systems. The management of such knowledge for decision-making during the initial stages of a police investigation of a crime is, essentially, a process of intuitive patternmaking ahead of verification. In this research, the role of forensic science, including the use of forensic photography in the crime scene reconstruction process, was evaluated. This exploratory study was mainly qualitative, with it being based on participative observation and interviews with police officers. Evaluations of complex interventions in the public sector, such as the KMC of public workers, like the CST and general detectives, are frequently undermined by problems identifiable before the effectiveness study stage. Exploratory studies, often termed pilot and feasibility studies, are a key step in assessing the feasibility and value of progressing to an effectiveness study. Such studies can provide vital information to support relatively robust evaluations, thereby reducing the costs and minimising the potential harm of the intervention concerned. This study involved over 1 350 hours of participant observation and 30 interviews, consisting of three focus group discussions, which formed part of a series of interviews conducted with the crime scene technicians (CSTs) and general detectives in Botshabelo, Free State province and Soshanguve in the Gauteng province. The approach applied in this research was not strictly inductive, as it contained some deductive elements. In addition to studying a number of different types of place, the research also included various types of police officers: new recruits; experienced officers; officers with a special interest in a specific kind of criminal activity; officers known by other police officers as either lacking in experience, or as being highly competent performers; and officers known to be of average ability. The purpose and objectives of the research were explained at each focus group discussion, so that informed decisions could be taken on whether to participate in the study or not. The participants were also informed that they could withdraw from the interview process at any stage and that the interviews undertaken would be recorded. However, the authors concerned assured the participants that their inputs would be handled with a high level of confidentiality, and that their input would be treated as of anonymous origin. After the data collection, the recorded interviews were transcribed, with it being printed out, so that the authors can read the transcriptions, from which they could glean the relevant themes and patterns. The authors identified connections within and between the themes concerned, so as to be able to explain the effects of, and the relationships within and between, themes. Consenting participants shared their experiences during semi-structured interviews. Data was obtained using qualitative data collection methods that included a literature study and interviews. Four themes emerged from the study findings of this study, being; (1) awareness of the crime scene and the role

of first responders; (2) identification of the appropriate expertise and the problem of 'extended' expertise; (3) effective control of crime scenes; (4) challenges confronting the first responder(s) at the crime scene; and (5) factors that rendered evidence found at the crime scene inadmissible in a court. From the findings of this study, the authors hoped to contribute to addressing a practical problem that required answering by the relevant police agencies.

Keywords: Capabilities, crime scene, detective, knowledge, management, processing

Introduction

One of the most important functions of law enforcement is the investigation and resolution of crimes (Mofokeng, 2022). The victim or reporter of the incident requires advice on crime scene preservation, if best use is to be made of any potential forensic evidence that might be available. Mofokeng (2018, p. 349) posits that in some 'incidents', it might be readily apparent that a crime has been committed, with it being termed a 'crime scene'. The *primary crime scene* is the area or place where an incident occurred, or where the majority or a high concentration of physical evidence is likely to be found, such as where there has been a sudden, suspicious death. *Secondary crime scene(s)* are areas, places or situations where physical evidence relating to the incident concerned may be found. Any potential physical evidence is usually transported away from the primary crime scene, with the crime scene usually being the starting point of a criminal investigation. Through evidence located at the scene, suspects are developed or eliminated, investigative leads are established, and theories concerning the crime are substantiated or disproved. The above statement is expanded on by Miller and Jones (2014, p. 115), who posit that "the only thing consistent about crime scenes is their inconsistency. Because of their diversity, crime scenes can be classified in many ways. First, crime scenes can be classified according to the location of the original criminal activity. This classification of the crime scene labels the site of the original or first criminal activity as the primary crime scene and any subsequent crime scenes as secondary. This classification does not infer any priority or importance to the scene, but is simply a designation of sequence of locations."

Therefore, the initial responding officer or crime scene technician (CST) should be prepared to collect, identify and package the available evidence, so that it will retain both its form and its value (Mofokeng, 2018). Thus, crime scene investigation can serve as an important source of information for law enforcement officers when managing a case. Effective leads become exposed, based on the knowledge, technique, and experience of the crime scene investigators involved. Although crime is a universal problem, its control is, primarily, the responsibility of the branch of the local government concerned, with the South African Police Service (SAPS) being no exception to the rule. First, when individuals commit crime and escape prosecution, future illegal acts are facilitated. Second, an escalating crime rate requires that valuable resources, which could, otherwise, be devoted to dealing with other social problems, be diverted to crime control, resulting in further entrenchment of such ills as poverty, substandard housing and inadequate medical care. Third, as the rate of crime increases, the criminal justice system (CJS) faces the possibility of a crisis of confidence in its ability to maintain public welfare (Mofokeng, 2012, 2015, 2020; Mofokeng & De Vries, 2012, 2016). Deslauriers-Varin and Fortin (2021, p. 635) posit that "every case where the alleged perpetrator is not tried for lack of evidence poses a risk to community safety. Similarly, when an individual is wrongly convicted of a crime, it undermines the community's confidence in the police forces responsible for protecting it, as well as its faith in the criminal justice system."

Finally, crime tears asunder the fabric of social relations and living patterns. People become fearful of strangers and of being on the streets after dark, homes become fortresses, and families move to new locations, in search of a secure life. Until significant inroads are made in terms of controlling the prevailing crime levels, the overall quality of life is likely to be lower than it might otherwise have been (Mofokeng, 2018; Mofokeng & Mathosa, 2019; Mokwena, Motseki & Dube, 2020). Mokwena et al. (2020) posit that criminal investigators within the SAPS are undermined and discredited by society in all spheres of policing sectors. The above statement is supported by Mofokeng (2022, p. 335), who asserts that both the CSTs and the general detectives "are shrouded in controversy and often called useless, incompetent and illiterate. SAPS criminal investigators have come under lot of pressure and scrutiny by the media and the public when suspects get bail in a court of law." Due to the investigators' lack of scientific knowledge regarding the proper collection, preservation, storage and transportation of crime scene evidence, the failure to obtain the appropriate analysis results can diminish the value of such evidence before the court of law (Mofokeng, 2018; Mofokeng & Mathosa, 2019; Singh, 2021). Singh (2021, p. 647), in supporting the above, states that many factors can contribute to the generation of a good report from a biological sample (i.e. the rate and extent of degradation, its purity, the amount of sample, etc.). In short, "[n]o biological evidence is resistant to degradation". As the careful collection and packing of crime scene evidence can provide useful information, taking proper precautions regarding the

collection and preservation of crime scene evidence is essential. The current review is intended to help both forensic and law enforcement professionals to deal effectively with crime scene evidence so as to avoid the contamination, degradation and loss of value of biological evidence available (Singh, 2021, p. 647).

While processing a crime scene, detectives and CSTs use specialised skills and knowledge to capture, manage and analyse enormous amounts of potential evidence-related data and information, which could be used to support legal actions during civil or criminal proceedings in a court of law. However, based on the nature of the crime scene processing, new skills and knowledge may sometimes be required to enable successful management of the incident at hand (Nickson & KEBANDE, 2018). The present forensic science environment of super-specialisation, in terms of which practitioners are 'siloed' into one particular discipline diminishes the effectiveness of the generalist approach (Pietro, Kamrath, De Forest, 2019; Stoney & Stoney, 2015). The Mapungubwe Institute for Strategic Reflection (MISTRA; 2013, cited in Mofokeng & De Vries, 2016, p. 87) posit that "the police station-based crime investigation units, the provincial and national specialised investigation units, the FSL and the LCRC [Local Criminal Record Centre] are all responsible for the investigative outcomes which include withdrawal before the criminal case reaches court, untraceable criminal incidents, unjustified reporting, guilty, not guilty, withdrawn in court and alternative completion." Therefore, it is possible that every CST at the LCRC and each general detective or investigator who is a first responder at a crime scene, should handle the fieldwork differently. Not all crime scene investigators are forensic scientists. Some CSTs and general detectives or investigators work in the field, collecting evidence and passing it on to the Forensic Science Laboratory (FSL) for further examination and reporting (Mofokeng, 2018; Roux, Talbot-Wright, Robertson, Crispino & Ribaux, 2015; Singh, 2021). Research has shown that cumulative knowledge and experience in different domains provide enhanced depth and breadth of knowledge (Epstein, 2019).

In most cases, successful prosecution is directly and primarily dependent upon the knowledge, skills and abilities of the general detectives, who perform the investigative work at police station level in South Africa. While good investigative work will not, by itself, significantly reduce the prevailing level of crime, the investigation of any crime places significant responsibilities upon the investigator concerned (Mofokeng & De Vries, 2016). Pepper (2005) posits that, considering the ever-increasing importance of physical evidence in the detection and prosecution of crime, and the fact that the crime scene investigator is at the forefront of criminal investigation, the skills and abilities of the crime scene investigator have never before been more crucial than they are at present. Investigating a crime scene is a process of seeking out and collecting evidence related to the incident in criminal cases, and which, both directly and indirectly, has to do with the crime scene. Such evidence is key to being able to learn and assess the facts or information that can be used to prove the perpetration of an offense or that can connect a person to a crime scene. The evidence obtained must not only be relevant to the crime case in question, but also obtained through the adoption of a legal and humanitarian approach to those involved. The collection and preservation of evidence must be in accordance with the principles and methods of international standards. Therefore, investigators who are legally obliged to collect evidence in criminal cases, so as to determine the facts of each case, should possess the following knowledge and skills: (1) the ability to interrogate witnesses related to the case, so as to obtain facts or information that are useful for an investigation; (2) knowledge of criminal law related to evidence gathering, so as to obtain the required evidence with all due regard to humanitarian principles and laws; (3) knowledge of witness object types and characteristics, which should ensure that the appropriate amount of information is paid to such objects, and that all due care is paid to the through collection of such objects; (4) knowledge of the principles of crime scene investigation, according to international standards, so that there is clarity regarding the source of the evidence and certainty that the evidence remains uncontaminated and unaltered; (6) knowledge of how to conduct criminal investigations, so as to be able to speculate on the plot of the crime and on the witness objects to be found at the crime scene, and so as to be able to link the evidence at the crime scene to the person(s) involved in the case; and (7) knowledge of forensic science principles that can be used to prove the facts of the case from the forensic evidence available, both directly and indirectly (Supalaknari, Laoarun & Wainiphithapong, 2021, pp. 33-34).

For the above-mentioned reasons, therefore, successful investigators must possess such essential qualities and skills as critical thinking, technical knowhow, initiative, report-writing, statement-taking, resourcefulness and compassion, among others. Moreover, investigators are responsible for ensuring that crimes are investigated effectively and thoroughly. In addition to conducting complete preliminary and follow-up investigations, understanding the importance of physical evidence in a criminal investigation is a key element of such a responsibility (Mofokeng, 2018; Mofokeng & Mathosa, 2019). Mofokeng and Mathosa (2019) posit that the contributions that are made by physical evidence to an investigation can, primarily, be diminished by the inability, the unwillingness, or the failure to locate, properly collect, mark, and preserve such evidence and by the drawing of improper conclusions from its analysis. Investigators must also recognise that the searching of the crime scene for physical evidence is not limited to the

location at which the offence was committed, but, instead, it involves a wider area, including the perpetrator's lines of approach and flight. Thus, a crime scene search must include the specific setting of the crime and its general environs. Situations may arise when even the most organised and well-planned crime scene investigation experiences obstacles. Investigators must always be cautious and aware of potential problems at a crime scene, and they must address the issues involved appropriately (Mofokeng, 2018; Mofokeng & Mathosa, 2019; Singh, 2021).

The research problem concerned centred on the requirements for the body of knowledge possessed by the individual CST and for the team management, who, as the first responders, must be able to apply the general detective skills related to decision-making, so as to be able to protect the evidence that is available at the crime scene, as well as the initial investigative process. Based on the first author's own background, and, as informed by the current state of knowledge in the field, it was found apt to identify a gap in the existing body of knowledge regarding such requirements, as the SAPS currently has been found to lack sound knowledge regarding the functioning of their investigative branches and the requisite teamwork (Mofokeng, J., 2022; Mofokeng, J.T., 2020; Mofokeng & De Vries, 2012, Mofokeng & De Vries, 2016; Mokwena et al., 2020). The authors, accordingly, wanted to learn more about the investigators' knowledge management capabilities (KMCs). In addition, insufficient documentation exists regarding the chain of custody that serves three primary purposes: to ask, and answer, relevant questions regarding the evidence provided to the analytical laboratory; to maintain a record of the chain of custody; and to document that the sample/evidence available was handled only by approved personnel and was kept free from tampering before analysis. The recent cases of Oscar Pretorius and Senzo Miyewa are typical examples regarding how the defence lawyers concerned accused the CSTs' and detectives' KMC, during their cross-examination, as being inadequate and/or incompetent during the processing of the crime scenes involved. The investigators and/or the CSTs responsible for collecting the evidence involved were proved not to have been continuously equipped with the necessary tools for doing their necessary investigative work, including labels of the sample containers/bags and the chain-of-custody forms that were required to enable tracking of the samples taken. Some of the professionals concerned omitted to take photographs of the crime scene and/or of the evidence gathered, before packaging it, whereas each sample container label was supposed to have had written on it a unique identification code and other relevant information, like the location, date and time of collection, the name and signature of the person who collected the sample, and the signature of any witness(es) to the collection. Arguably, if the information system provided by the SAPS is to be useful to the CSTs and to the investigators involved, it should be founded on (1) a deep understanding of who the investigators are, how they make decisions, what information they require, and how they work together; (2) an exploration of the cognitive skills involved in accessing, processing and manipulating, verifying and recording the relevant information, with due consideration of the role of intuition; and (3) an appreciation of the nature of the decision-making itself. No scholarly research on such aspects of investigation has yet been undertaken in the SAPS.

Consequently, the following three research questions guided the writing of this paper:

- Do SAPS officials understand their roles towards crime scene management?
- What is the level of awareness of SAPS officials towards crime scene management?
- Are SAPS officials assigned clearly defined roles regarding crime scene management?
- Are SAPS officials adequately trained with regard to crime scene management?

The above questions encapsulated the themes on which the authors were focused, regarding the awareness of the nature of the crime scene and the role of first responders; the need to identify the appropriate expertise required, along with the problem of 'extended' expertise; and the factors that might render evidence found at the crime scene inadmissible in a court of law. The participants in the research revealed details of the investigative process that could prove to be helpful for the policymakers involved, and which should prove to provide ramifications for the provision of a fruitful and culturally safe environment for the investigators concerned. On the basis of the findings of the current study, the authors involved hope to contribute to addressing a practical problem that has long required answering by the police agencies involved. Due to the lack of existing knowledge, the questions asked are to be seen as largely being of an exploratory nature.

Literature review

Knowledge management (KM) and sharing in the criminal investigation process

KM includes specialists who obtain, use, create, manage and/or impart knowledge, as well as the processes and technology that facilitate the processes concerned (Acharylum, 2011). Such management involves an emerging set of strategies and approaches that are aimed at creating, safeguarding and putting to use a wide range of knowledge assets, including those of the specialists involved and the information that they have at their disposal (Chang & Chung,

2014, p. 9). The successful application of KM can improve an organisation's effectiveness, with such application assisting in enabling it to gain competitive advantage (Mohajan, 2017, p. 1). KM is also involved in facilitating the decision-making process for the benefit of the organisation involved. According to Colaprete (2004), a criminal investigator's critical skills consist of developing a strategy for case investigation, of interviewing victims, of testifying competently in a court setting and, most importantly, of interrogating a suspect. Such skills are frequently undocumented. Knowledge sharing (KS), which forms an integral part of KM in law enforcement (Hunton, 2012), includes both outside forces that *push* knowledge towards others (e.g. education and awareness campaigns) and inside factors that drive others to seek knowledge (*pull* factors), such as to seek out expertise or assistance on a matter (Dixon, 2000). KS is an activity by means of which knowledge is exchanged among individuals and organisations and collected as a form of shared knowledge, by means of information gathering and technology utilisation. The education phase of KS involves experts using their communication skills and knowledge to guide and train their fellow colleagues (Nickson & KEBANDE, 2018, p. 15). KS also helps in organising, creating, capturing and distributing knowledge, and in helping to ensure its availability to future criminal investigators. The benefits of KS can be achieved through investigator training, as well as through the exploring of investigation case studies (Nickson & KEBANDE, 2018, p. 17).

During the criminal investigation process, criminal investigators are required to tailor a significant amount of their efforts towards successfully identifying and apprehending the perpetrators of crime, and towards assisting in the investigation of crime (Chang & Chung, 2014, p. 9). The investigators state further that, if investigators are aware of their own capacity and know the relevant techniques required for investigating crimes, they are likely to be more productive than they otherwise might be. Criminal investigating capacity and techniques include crime scene processing and evidence collecting, investigation report writing, suspect arresting, the assisting of prosecutors with indictments and the promoting of witnesses to testify in court. A criminal investigator possessing enhanced knowledge of crime scene processing is far more able to conduct criminal investigations successfully and to solve a relatively high number of cases than is one who has less training. KM and information sharing among detectives is important, especially when they are trying to analyse the different aspects of pieces of evidence that they have obtained from a crime scene (Nickson & KEBANDE, 2018, p. 12). The provision of timely and accurate knowledge and information is critical to the success of any criminal investigation (Luen & Al-Hawamdeh, 2001, p. 313). It is, therefore, imperative that the police develop a coherent KM strategy, so as to ensure that such knowledge and information are made available to its members in a timely and effective manner, thereby enabling them to perform their duties optimally. The criminal investigators investigating a crime scene must have expertise and knowledge and understanding of the relevant laws and regulations, as well as of the investigative techniques to be used. Furthermore, they should study new methodology, how to set about fact-finding and how to gather complete and accurate evidence (Supalaknari et al., 2021, p. 34). The professionalism of investigators collecting evidence from a crime scene should result in the evidence being of the highest quality and value possible, with their adopting of such an approach enabling them to help ensure the provision of justice, in the form of obtaining accurate and fair results for all parties involved. Criminalists, who must make use of their ability to be inquisitive and to do their best to investigate the information that is available to them, analyse, compare, identify and interpret physical evidence, and report on it for prosecution purposes. Once they know what to analyse and what types of analyses to perform on the physical evidence submitted, they require some background information relating to the specific criminal case with which they have to deal (Dutelle, 2010, p. 145). Therefore, conducting clear communication between the criminalist and investigating officer is imperative to the successful outcome of a case. Such communication requires that police officers recognise the importance of collaborating and sharing knowledge together with others, with them also realising that all employees in the police departments should strive to be equally responsible in relation to the tasks that they have to undertake (Dean, Filstad & Gottschalk, 2006, p. 425).

Personal and organisational knowledge

All police officials need a range of different forms of knowledge, together with a flexible intellect, to be able to function efficiently. Holgersson (2006, p. 11) divides professional knowledge into three different types: (1) statement/theoretical knowledge; (2) skill/practical knowledge; and (3) familiarity knowledge. Holgersson (2006) considers knowledge that is formulated in terms of different principles, theories, methods and regulations to be statement knowledge. Whereas skill knowledge is acquired, as well as used, during practise, familiarity knowledge is knowledge that is attained from being part of a tradition. Holgersson further points out that interaction with others within the same profession is crucial to be able to develop such knowledge. Several researchers have made similar classifications. Nordenstam (1983), for example, uses Wittgenstein's (1953) division of knowledge into three types of groups, namely: (1) theoretical/scientific knowledge; (2) practical/productive knowledge; and (3) knowledge as practical wisdom.

Holgersson (2006, p. 11) divides knowledge up in the same manner, pointing out that, for a long period of time, theoretical-scientific knowledge was considered to be the only form of knowledge in existence. Such knowledge has a long tradition, with roots in Greek antiquity (Holgersson, 2006, p. 11). An important principle of this sort of knowledge is the distinction between knowing something with full certainty, on the one hand, and believing in, and guessing about, something, on the other. The second type of knowledge, as defined by Holgersson (2006, p. 11), is practical-productive knowledge, with such knowledge standing in close relation to skills, practical abilities and knowledge in practice. In addition, Gustavsson describes practical wisdom as being a third form of knowledge. What characterises this knowledge type is that the goal of an action is, simultaneously, part of the action. Such knowledge has a political and ethical dimension, of which the purpose is people's well-being. When someone, for example, builds a house, the manufacturing process is separated from the fact that the person will live in the house and will want it to have been designed in such a way as to promote a high living standard (Holgersson, 2006, p. 11).

Research indicates that personal knowledge and organisational knowledge are two different, yet interdependent, concepts (Bhatt, 2002). Ipe (2003) states that personal knowledge is created, shared and disseminated among individuals in an organisation. Personal knowledge can be enhanced, externalised and stored as organisational knowledge. In the organisational setting, personal knowledge is created through various means, such as by interacting between individuals at various levels of the organisation (Nordin, Pauleen & Gorman, 2009, p. 6). Individuals are essential to the creation of organisational knowledge, and personal knowledge must be shared among individuals and groups at various levels of the organisation, so as to enhance organisational effectiveness (Ipe, 2003). Nordin et al. (2009, p. 6) point out that KS is important, because it enables a relationship to exist between the individual and the organisation in terms of moving personal knowledge to the organisational level. Knowledge residing at the organisational level enables innovation to take place in the organisation's practices, with, subsequently, the selfsame knowledge helping it to achieve its goals and objectives (Ipe, 2003). Organisational knowledge includes both all the tacit and all the explicit knowledge that individuals possess about products, systems and processes, and the explicit knowledge that is codified in manuals, databases and information systems (Bryant, 2003, pp. 32-44). It includes routines, standard operating procedures, technological implements and organisational artefacts (Patriotta, 2004). Holgersson (2006, p. 28) uses another classification of knowledge to that of the above-mentioned researchers. According to her, different aspects of knowledge exist, and not different knowledge types as such, with the first aspect consisting of statement knowledge, and the other of familiarity knowledge. Holgersson points out that such aspects of knowledge are closely related to each other, and that the borders involved are continuously shifting. Familiarity knowledge gives live to the abstract terminology of statement knowledge. The reason for Holgersson to emphasise that professional knowledge consists of the two different aspects is that we tend to consider knowledge as being equal to statement knowledge (Holgersson, 2006, p. 28).

Materials and Methods

The current study was mainly qualitative, as it was based on participative observation of, and interviews conducted with, police officers. The study involved over 1 350 hours of participant observation and 30 interviews, including three focus group discussions, with the CSTs and general detectives in Botshabelo, Free State and Soshanguve, Gauteng. Both the interviews that were conducted with police officers and the participative observation concerned started at the beginning of 2018 and ended in April 2021. The approach applied in this research contains some deductive elements, but is primarily inductive. Goldkuhl and Cronholm (2003) define the nature of multi-grounded theory (MTG), which is inspired by grounded theory (Strauss & Corbin, 1990), but the method that they use also contains certain deductive elements (Cronholm, 2004, 2005; Goldkuhl, 2004). In addition to studying a number of different types of places, the research involved included various types of police officers: new recruits; experienced officers; officers with a special interest in some kind of activity; officers known by other police officers as lacking experience or as being highly competent performers, and officers known to be average (Patton, 1990). Most interviews were informally structured (Patton, 1990), with the interviewee concerned having ample opportunity to talk freely about their work and to explain what they thought was important knowledge to have, so as to be regarded as a good officer. Gataru (2010) found that unstructured interviews are effective to use in combination with participative observations, because they enable the deepening of the understanding of a phenomenon. The study also included participant observations, in combination with the conducting of interviews, over a period of six months, with the same police officers. The intention was to test different types of knowledge and to see how they worked, for example, whether it would be possible to catch more drunken drivers than usual when law enforcement acts in a certain way (Holgersson, 2006). The purpose and objectives of the research were explained at each focus group discussion, so that the researchers involved could take informed decisions regarding whether or not to participate in the study. The participants were also informed that they could withdraw from the interview process at any stage.

They were also informed that the interviews would be recorded, although the authors assured them that their inputs would be handled with a high level of confidentiality, and that their information would be treated as being from an anonymous source. After the data collection, the recorded interviews were transcribed and printed out, so that the authors could read them and glean themes and patterns from them. The authors then identified the connections within and between themes, so as to be able to explain the effects and relationships existing within and between themes.

Emerging Themes

For the purpose of the current study, the aim was to study and analyse the information provided by three focus groups. The data was gathered so as to come to an understanding of how the participants, including patrol officers, detectives and CSTs, use or apply information in their daily and work lives, in managing crime scenes, as well as in determining their awareness regarding the importance of the scenes. “The level of awareness or information influences the effectiveness of the work and the barriers that people perceive in their search for, and use of, necessary information” (Kostiainen, Valtonen & Vakkari, 2003, p. 157). The questions asked of the participants are analysed and discussed below, in terms of five interrelated themes. The themes concerned can be viewed as five critical issues that should be evident at the crime scene, but that, typically, lie outside the protocols established by the SAPS for the processing of crime scenes. They are as follows:

- Awareness of the crime scene and the role of first responders;
- Identification of the appropriate level of expertise and the problem of ‘extended’ expertise;
- The effective control of crime scenes;
- The challenges that confront the first responder at the crime scene; and
- Factors that render the evidence found at the crime scene inadmissible in a court of law.

The above-mentioned themes are discussed in detail below:

Emerging theme 1: Awareness of the crime scene and the role of first responders

The three focus group discussions revealed that the majority of the participants concurred that basic forensic operating standards are expected by the SAPS, so as to maintain the integrity of crime scenes. The protocols and procedures involved exist for the purpose of achieving continuity in the chain of evidence, as well as the integrity of the trace evidence gathered. However, the procedures concerned are only to be followed once a decision has been made that a crime has occurred. The participants were asked whether they were able to identify a crime scene, and whether they possessed adequate knowledge to be able to take the correct steps in processing or managing the crime scene. The majority of the participants indicated that an incident first has to be recognised as a possible crime, before any evidence can be sealed and processed. The follow-up question asked regarded who decides such an issue and at what point the decision is taken in the police response. Two subthemes emerged from the research evidence regarding awareness and communication. The first was that, in general, although the participants were aware of the procedures that should be followed to preserve the crime scene, their appreciation of the evidential value of the crime scene seemed to be inadequate. The above appears to have held true for **Focus Group 1**. In line with the lack of confidence displayed during the interviews by the participants in both **Focus Groups 1** and **2**, the authors considered it to be possible that a lack of understanding existed among some detectives from **Focus Group 2**, in terms of which one would have expected their familiarity with forensic processes to have been more developed.

The second emerging theme related to the issue of the integration of forensic and policing functions. The participants, especially from the two focus groups, **Focus Groups 1** and **2**, indicated that they could not explicitly identify the contribution that physical evidence makes to the detection of crime by means of comparing case outcomes in (no) physical evidence cases. The analysis undertaken clearly showed that scientific skills relating to the adequate processing and collecting of physical evidence, to maintaining the chain of custody, and to policing do not naturally coexist. Integration requires effort, and a desire by all the relevant role-players within the SAPS to cooperate. Where there is cooperation, forensic science is capable of contributing more meaningfully to the investigation of crime than might otherwise have been the case. An awareness of the findings of several studies also tends to benefit those who are knowledgeable about such matters, in terms of enabling them to adopt a more coherent approach towards problem-solving and detection, as well as, ultimately, enabling them to better their performance as a whole. Garrison and Anderson (2003, p. 73) points out that a crime scene is a dynamic event and that the processing of a scene is a reconstructive process. The sooner the recording of the scene begins, the more confident the crime scene examiner (and the investigator) can be in their perspectives and opinions regarding the incident. The implications for the SAPS are that training should equip recruits with an understanding of policing and its social context, and with the skills and information that are necessary for the exercising of professional discretion in terms of crime scene processing (Rauch,

1992, p. 15). In this regard, a top-level parliamentary report has indicated the need for all officers in the SAPS to be trained in crime scene protection methods, so as to promote increasingly successful detective work (Business Day Live, 2015, np).

3.4.2 Emerging theme 2: Identification of appropriate expertise and the problem of ‘extended’ expertise

On the participants being asked whether they considered their colleagues who attended crime scenes as having adequate training and skill in, as well as knowledge of, crime scene management, the responses provided below were given.

Focus Group 1 participants displayed a low level of confidence in terms of their expertise to guard and process the evidence available at crime scenes, identifying various factors for such a shortcoming. A comment made in the above respect follows:

Some of our colleagues, especially the Commanders, undermine us. They never ask permission when they find us securing the scene. It is like we are ill-equipped to take charge of the scene. Sometimes, some of the colleagues will leave the scene unattended; for example, in winter they would stay in their vehicles to warm themselves [up], rather than properly protecting the scene. This increases the risk of scene contamination. (Focus Group 1)

The participants from **Focus Groups 2** and **3** concurred that the importance of deciding, at an early stage, to seal off a scene, places pressure on the first responders involved. The participants in the two focus groups concerned indicated that, by and large, the actions and responses of those at the crime scene (including police officers, emergency service personnel and members of the public) affected the quality of the evidential material found there, with the expertise of the first responders also helping to determine whether or not the crime scene is treated with the utmost care.

The first responders have a critical role in the entire crime scene investigation process. Their initial responsibilities are to preserve the integrity of the scene and the evidence. Furthermore, they are responsible for the early documentation of the crime scene, its evidence and all activities at the scene. As in the majority of cases, first responders are crime prevention officials, who are expected to have adequate training in managing crime scenes. (Focus Group 3)

The above analysis does not clearly indicate whether the responders know if and when to regard an incident as a crime. The ability to make such a distinction is not always clearcut, especially in cases of attempts to conceal the committing of a crime. However, given the negative consequences resulting from the inability to recognise a crime scene, some of the participants noted the following:

Since one crime scene is distinctly different from another, some human error might occur, such as leaving an injured person unattended in the care of family members, unaware that the family is trying to tamper with the evidence [so as] to avoid a family scandal.” (Focus Group 2)

From the above, it is clear that the decision to declare a crime scene such is a judgment call that needs to be made sooner rather than later. Mokwena (2014, p. 11) cautions that the family and friends of the perpetrator can, for example, place pieces of furniture back in their original position, clean bloodstains away or destroy exhibits (e.g. of a sexual nature) to protect the “good name of the victim”. Therefore, the University of South Africa (Unisa, 2004, p. 465) proposes that everyone present at a potential crime scene should be questioned about their actions around the time of the incident, before the police arrive on the scene. Such questioning should be done in a considerate manner, as well as should be the asking of those present to leave the scene. Simultaneously, the research indicates that, once an incident is considered to be a possible crime, the scene has to be appropriately scaled (Robertson, 1989, pp. 75-78). First responders usually learn about crime scenes during their police training, while on the road during their traineeship and from textbooks on crime scene processing and management (Fisher, 2005; Horswell, 2004). Given the above, it has become essential for the maintenance of high standards among the SAPS that future research should explore the effectiveness of the training of junior police members regarding crime scene identification and management, the type and level of exposure by new recruits to literature instructing them how to recognise whether a crime has taken place and, if so, whether a scene has to be sealed off, and the identification of improvements that could be made to avoid problems and delays experienced in the recognition of a crime scene. Although various approaches exist at police stations for adoption towards the deploying of first responders to suspected crime scenes, the researchers consider that, even should such ‘formal’ crime scene management policies for attendance of such scenes already be in place, the first responders’ discretion should, nonetheless, be seen as important, in terms of determining exactly what scenes should be visited, and whether the crime committed is high profile or less serious.

The related research indicates that the decisions taken by the first officers attending a crime scene are characterised and driven by two main principles: on the one hand, the seriousness of the offence, and, on the other, their perceptions of the presence of potential forensic material (Ludwig, Fraser & Williams, 2012). In a survey of patrol officers, Tilley and Ford, as cited in Ludwig et al. (2012), found that the seriousness of a case (78%) and the perceived presence of forensic materials (66%) greatly influenced the decisions made as to whether or not to request CST attendance (n=81).

For the purposes of the current study, the following scenario was used to determine the appropriate expertise of the participants involved in responding to a reported case of housebreaking, theft, rape and murder.

Case study

At about 16:30 on 15 August 2014, two coloured males dressed in green overalls, appearing to be aged between 20 and 26 years old, were noticed by a neighbour, Mr Monyaki, entering the premises at number 36674, Teal Close, Race Way Park, where, upon presenting themselves as electrical engineers, they were let into the house. Two hours later, Mr Monyaki saw the same persons leaving the house, looking suspicious and wearing torn clothes. While they were busy leaving the house, Mr Monyaki noticed one of them drop something onto the ground. A few minutes after they had left, he went to have a closer look at what the dropped object was, and saw that it was an item of woman's underwear, a used condom and a bloody screwdriver. He immediately alerted three police officials, who happened to be driving by in a Mangaung police patrol vehicle at the time.

The participants in the study were then asked whether they considered their colleagues to be knowledgeable enough to know how to process the crime scene concerned. The responses obtained were as follows:

The findings in relation to both **Focus Groups 1** and **2** indicated that the participants did not consider their colleagues who would be attending the crime scene as knowledgeable enough to process the crime scene involved adequately.

They fail to secure the crime scene properly, whereby the scene is contaminated by others (family members and themselves) touching the exhibits at [the] crime scene. (Focus Group 1).

One participant explained:

... most often, some members remove exhibits, such as cell phones or money, from the scene without recording them. (Focus Group 2)

The view from **Focus Group 3** was that not all of the first responders possessed the necessary knowledge or skills, with some still requiring training and mentoring to be able to assist in this regard. One participant said:

Yes, officials are aware of crime scene contamination, and of acting [i.e. having to act] carefully at the scene. However, refresher training and advanced training are needed. (Focus Group 3)

Most of the participants concurred that they did not consider the first responders in the SAPS as having adequate crime scene management knowledge, due to the fact that most of the crime scenes investigated were neither properly managed nor secured to the extent that was expected of them, in terms both of the community and senior SAPS management. Such an estimation was attested to in a ruling made by the presiding judge in the Oscar Pretorius case, in relation to which accusations have been made of inferior police work being carried out at the crime scene.

Emerging theme 3: Effective control of crime scenes

In South Africa, in the majority of law enforcement agencies, the first responders at a crime scene tend not to be forensic officials, with those concerned being the only people who are able to view the uncontaminated crime scene (Miller, 2011, p. 118). The first police responders at a crime scene are the key ingredient in the formula that must be followed to be able to conduct a successful criminal investigation, therefore their actions there provide the basis for the (un)successful resolution of the investigation involved (Miller, 2011, p. 118). The primary goal of any first police responder is to preserve life, arrest offenders, and prevent contamination of potential physical evidence. Various categories of responsibility are required to be fulfilled by a first police responder, for the successful accomplishment of assigned responsibilities. The participants were, accordingly, asked whether they had clear roles assigned to them regarding crime scene management, to which they responded in the following way:

Focus Group 1 indicated that clear roles are assigned to patrol officers, and that they know their roles regarding crime scene management, as they are briefed on such roles during station lectures and parades. However, one participant said:

My opinion is that the sole role assigned to patrol officers is only stop and search. (Focus Group 1)

The views provided by both **Focus Groups 2** and **3** indicated that, under ideal circumstances, those CSTs who have received full-fledged forensic training under normal circumstances would tend to take over the criminal investigation work at a crime scene. However, certain situations might require first responders (who are normally not expected to process the scene further) to conduct some basic recovery procedures, prior to the arrival of the CSTs, if there is a risk of the evidence being destroyed, lost or contaminated. One participant noted:

In situations where there is no prospect for the crime scene to be processed by crime scene investigators, the responsibilities of the first responder might have to be extended beyond [mere] preservation and documentation activities. These situations typically occur if the crime scene is in a remote location, if skilled CSTs are not easily available, or if there is a lack of adequate logistical resources at the station, such as vehicles. (Focus Group 3)

One participant highlighted the challenges of role conflict experienced at their police station, in the following words:

Officials are aware of their roles, but some of them do not comply with instructions. One of my members was assigned to safeguard the scene of a murder, but, instead, he sat in the police vehicle a few metres away from the scene.

Based on the findings made in the above respect, it seems that, although roles were clearly assigned to the participants in such a criminal investigation, inadequate training and the lack of skills, knowledge and discipline significantly hindered the performance of daily duties, leading to blunders being made by the SAPS members present at the crime scene. Therefore, strong leadership and good management skills are required to overcome the negative perceptions of the SAPS that are currently held by certain members of the community. The value of forensic evidence, in terms of supporting a criminal investigation, lie in the early designation of the crime scene as such, and with compliance with the good practice guidelines for crime scene processing. The above is achievable when both the first responders and the CSTs know what is expected of them. Further, it is essential that all the role-players involved, who should have a high level of forensic awareness, should know how to ask the 'right' questions, including regarding what might have happened. The SAPS Policy 2 of 2005 defines the roles and responsibility of those SAPS members who are involved in investigating a crime scene, all the way from the call taker in the early stages of the incident to the CST, during the closing stages of such (Omar, 2009:74-75). Policy 2 stipulates that the police members involved should be tasked only with cordoning off crime scenes, and with identifying and restraining the actions of any suspects and witnesses concerned. Thereafter, the police members should hand over control of the scene to a detective or crime scene manager. Although crime scene management begins with the arrival of the first police officer on the scene, it continues on through both the performance of the scene and criminal investigator and that of the CST (Mofokeng, 2018). The different role-players within the SAPS should, therefore, be aware at all times of how to respond to the different aspects of a crime scene, with due consideration being given to issues of personal safety, while, simultaneously, keeping a lookout for any potential evidence and possible suspect (SAPS, 2011b, p. 4).

The policy stipulates that any member of the SAPS to whom a crime is reported (whether at a community service centre, a 1011 centre, or an operational room) must be trained to manage actions taken in response to a crime being reported to the office. SAPS members must have the up-to-date contact details for the relevant units that are involved in crime scene management (Omar, 2009, p. 63). The equipment that is required for crime scene management (including ropes, cones, crime scene barrier tape and others) are typically readily available to the first responder working at the scene. Such tools are put together in a box/kit and replenished regularly, so as to facilitate rapid response (United Nations Office on Drugs and Crime [UNODC], 2009, p. 8). Spraggs (2015) asserts that an effective patrol officer should always carry basic crime scene response equipment with them, including yellow crime scene tape with which to mark off a scene, basic evidence markers and a camera. The same author also recommends that patrol offices carry an assortment of boxes or other items with them that can be used to protect perishable evidence, if the prevailing weather conditions are likely to damage the evidence. From the beginning to the end of the crime scene process, strict anticontamination measures should continuously be in place. According to the UNODC (2009, p. 10), such measures include wearing protective clothing, including gloves and shoe covers; using a single path when entering the scene (which also holds true for the medical personnel providing care to the victims concerned);

refraining from using any facilities that are available at the scene (e.g. the toilet, water, the telephone); refraining from eating, drinking or smoking; and avoiding moving anything/anybody, unless it is absolutely necessary to do so (if something or somebody has to be moved, their initial location should be carefully documented).

Emerging theme 4: The challenges that confront the first responder at the crime scene

The participants interviewed highlighted that, often, various factors at the scene of incidents can contaminate the exhibits and turn out to be challenges that confront the first responder at the scene of the crime. While one of the most popular lines used by defence attorneys and the media during a trial is that the police contaminated, disrupted, tainted, or otherwise contaminated the crime scene, such is not always the case (Schiro, 1999, p. 322). Factors over which investigators have little or no control before the police arrive could include weather conditions, the family and friends of the deceased, suspects and helpers, the bystanders or curious onlookers and nonessential personnel at the scene, and the incorrect handling of exhibits, animals, traffic, and others (Unisa, 2004, p. 463). The participants were asked what, in their view, the challenges were that confronted first responders at the scene of a crime. The majority of the participants concurred that, while there were general principles related to crime scene investigations, knowledge regarding how to package the evidence and how to interview the witnesses and suspects, many activities in crime scene investigation and the forensic process itself, at times, became a challenge to some of the participants concerned. The participants in the current study referred to such challenges as how to obtain the requisite authority to enter the crime scene, especially when it was on a private property, so as to be able to conduct the investigation and to handle certain evidence (e.g. the type of sealing procedure required to be followed). Submitting physical evidence to the forensic laboratory could also prove to be challenging. Ultimately however, the nature of the evidence that is collected at the crime scene determines its admissibility in court. Some of the comments made were as follows:

Failure to comply with existing laws, rules and regulations can result in a situation where the evidence cannot be used in court. It is, therefore, of importance for personnel working at the scene to be aware of, and [to] ensure proper compliance with, these rules. (Focus Group 2)

If adequate laws, regulations and rules to enable the forensic process do not exist, their establishment may [i.e. might] be a matter of necessity. (Focus Group 3)

Lack of public cooperation to assist the first responders when requested, lack of crime scene management skills, senior members of the SAPS failing to take instruction from the first responders, thereby interfering with the scene, and the weather conditions are some of the most challenging factors that confront the first members at the scene. (Focus Group 1)

The above views of the participants paint a bleak picture regarding the challenges that confront the first responders at the crime scene. Unisa (2004, p. 463) and Mokwena (2014, p. 11) raise concerns that senior officials frequently interfere with crime scenes in refusing to take instructions from the first members involved. Such conduct by senior officials towards the first responders at the scene (who are often their subordinates) is unprofessional and unacceptable, with it needing to be addressed accordingly by SAPS Senior Management. The challenges involved have a negative impact on crime scene management and on the successfulness of the investigations concerned. Mofokeng and Mathosa (2019) posit that the crime scene should be protected as much as is possible from the following types of challenges and factors: the weather; suspects and helpers; bystanders or curious onlookers and nonessential personnel at the crime scene; and the incorrect handling of exhibits.

The weather

Mokwena (2014) cautions that rain, wind, heat and any intense temperature can damage the body, blood and other bodily fluids present at the scene. Police officials, who are first responders, must, therefore, take action to prevent such weather conditions as heat, wind and rain destroying or damaging exhibits or clues, to the extent of their abilities (Barry, 2004; Govender, 2019; Mofokeng, 2018). To prevent the exhibits suffering from the adverse effects of such factors, the police officials at the scene can improvise and use clean, suitable empty containers, like a plastic dustbin, a cardboard box, a crate, or a drum, to protect them. Such containers must, however, be thoroughly inspected before they are placed over an exhibit, so as to ensure that they will not contaminate the exhibit (Unisa, 2004).

Suspects and helpers

The suspect(s) must NOT be allowed close to the scene, except at a later stage, once cleared, and they are required to identify certain aspects of the situation (Mokwena, 2014). Such restriction is necessary, so as to prevent the suspect(s) from destroying any exhibit(s), or from depositing additional evidence at the scene (Mofokeng & Mathosa,

2019). Since the helpers can also, inadvertently, contaminate the existing exhibits, their actions must also be controlled (Unisa, 2004).

Bystanders or curious onlookers and nonessential personnel at the crime scene

Most crime scenes draw people to them. Those concerned might either deliberately, or unintentionally, move or destroy valuable evidence, with some possibly attempting to steal such exhibits as guns, knives and other dangerous weapons. However, police members who might contaminate the crime scene by means of handling or touching exhibits and by means of walking through footprints or blood are also of great concern (Mofokeng & Mathosa, 2019; SAPS, 2004a,b, 2005, 2011a,b, 2015). From the moment that the first responder arrives at the crime scene, they should ensure that curious onlookers and personnel, including law enforcement officials not working on the case, politicians and the media, among others who are irrelevant to the scene, remain outside the cordoned-off area (Carrickfergus, 2015). The first responder should, firmly and respectfully, explain to those present that the preservation of the scene is vital, and that members of the public must be kept away from it (Mofokeng & Mathosa, 2019).

Incorrect handling of the exhibits

Unisa (2004) warns that use of the incorrect handling and packaging procedure can damage exhibits like deoxyribonucleic acid (DNA), fingerprints, blood, primer residue, and others, by means of wiping the material off or by adding the handler's fingerprints to those fingerprints left on the crime scene. To avoid contamination of the physical evidence, The National Institute of Justice (NIJ) (2000) states that, while making the search and/or completing any other duties, the police officers involved should refrain from touching the objects at the crime scene unnecessarily. An important aspect of securing the crime scene is to preserve the scene with minimal contamination and disturbance of the physical evidence involved (NIJ, 2000). The SAPS (2011b) guidelines state that, prior to the crime scene processing team starting its work, the first responder should adhere to the following rules:

- Neither touch nor remove evidence at the scene, and protect all possible evidence matter.
- If it is unavoidable to do so, remove any evidence from the scene with the minimum of handling, while marking and noting the position from where it was removed, so as to protect it from both damage and contamination. For example, if the evidence might be damaged by means of moving traffic that cannot be diverted, preferably remove the evidence for safekeeping. In such an event, the evidence and the position from where it was collected must be indicated to the crime scene manager (and to the CST), on their arrival at the scene.
- As animals generally tend to scavenge from, or to disturb, a crime scene, destroying or relocating what might otherwise be valuable evidence (SAPS, 2004a,b, 2005, 2011a,b, 2015), they must have no access to the scene.
- Motor vehicles, especially police cars, will often tend to drive over and destroy such evidence as tyre marks, footprints and bloodstains (Mofokeng & Mathosa, 2019; SAPS, 2004a,b, 2005, 2011a,b, 2015).

Emerging theme 5: Factors that render evidence found at the crime scene inadmissible in court of law

For evidence to be admissible in court, it must be relevant, material and competent. The participants concurred stated that, for evidence to be considered relevant, it must be likely to be able to help prove or disprove some fact. Even though a piece of evidence need not provide certainty about a situation, it must, at least, tend to increase, or decrease, the likelihood of the existence of some fact. Basically, if evidence is to be admissible in court, it must be relevant, material and competent. To be considered relevant, it must be likely to help (dis)prove some fact. Although it need not make the fact certain, at least it must tend either to increase or to decrease the likelihood of the existence of some fact. Once the evidence is admitted as being relevant to the case at hand, the finder of the fact, who is either the magistrate or the judge involved with the specific case, will determine the appropriate weight of the evidence in terms of sentencing. A piece of evidence is considered to be material if it is offered to prove a fact that is in dispute in a case. Evidence is considered to be competent if it complies with certain traditional notions of reliability. In the above respect, the responses corroborated the findings discussed in the literature review. The research indicates that the concept of relevance plays a pivotal role in legal fact-finding. Thayer (1898, pp. 266, 530) articulates the significance of the concept in terms of two foundational principles of the law of evidence: first, without exception, nothing that is irrelevant may be received as evidence by the court and, secondly, subject to many exceptions and qualifications, whatever is relevant is receivable as evidence by the court. The admissibility of physical evidence in criminal cases, which is a key part of the investigation of crime, should never be underestimated (SAPS, 2015, p. 7). The general rule in evidence, according to Nance (1986, pp. 952-974), is that all relevant evidence is admissible, whereas all irrelevant evidence is inadmissible. Admissible evidence is any testimonial and documentary or tangible evidence that may be introduced to a fact-finder, who is usually a magistrate or a judge / member of a jury, for establishing or bolstering a point expressed by a party to the proceedings (Nance, 1986, pp. 952-974). For evidence to be admissible, it must be

relevant, without being unfairly prejudicial; it must have some indication of reliability; and it must have some reasonable value, in terms of it helping to prove, or disprove, some fact(s) (Nance, 1986, pp. 952-974).

The decision as to whether to allow a party to adduce a particular item of evidence is one that the judge has to make, with the issue arising during the course of a trial. Having heard or seen the evidence concerned, the fact-finder now has to evaluate or to 'weigh' its value in terms of reaching the required verdict. Weight can refer to any of the following three properties of evidence: (a) the probative value of individual items of evidence; (b) the sufficiency of the whole body of evidence, adduced at the trial, in terms of meeting the standard of proof involved; or (c) the relative completeness of the body of evidence concerned. Inadmissible evidence is that which, according to established legal principles, cannot be received into evidence at a trial for consideration by either jury or judge in terms of reaching a determination on the action taken (Giova, 2011, p. 2). If the usefulness of the evidence is outweighed by its tendency to cause the fact-finder to disprove the party involved, against whom it is introduced for some unrelated reason, it is inadmissible (Nance, 1986, pp. 952-974). An example of inadmissible evidence is that which is contaminated or that which arises from a poor chain of custody of evidence to be presented to a court. Contamination refers to the transfer of evidence/material that did not originally exist onto the exhibits from a crime scene. An example of such would be if the clothing of the deceased is packaged on the same surface as is that taken from the suspect, whereby the former might be contaminated with fibres from the latter (SAPS, 2005, p. 6). Contamination of evidence was cited in the case of O.J. Simpson, as cited in Rice (1996, p. 939). Blount (as quoted by Pillay, 2008:21) indicates that an investigator covered the body of the victim, Nicole Simpson, with a blanket, thus potentially compromising the fibre evidence involved. In addition, numerous blunders were caused by the investigators concerned, which could have destroyed other potential evidence. In that case, the fibre evidence involved might not have been admissible in court, due to the possibility of contamination. Poor chronological packaging, careless documentation of evidence and the inability to establish the connection of the evidence to an alleged crime (SAPS, 2005, p. 6) can render it inadmissible as well. An example of a poor chain of custody could be the recovery of a used condom at a rape scene. For the purpose of the current study, the following scenario was used as a practical example:

Officer A, the first patrol member to arrive at the scene of a rape, collects a used condom, placing it in a container without documenting it. A few hours later, he attends to a similar crime scene, where he also finds a used condom. He collects it and places it in the same container, without documenting it. He then finishes work for the day, leaving the two condoms from the two crime scenes together in the same container. The next day, he places each of the above-mentioned condoms in a separate bag, giving the two exhibits (i.e. the two used condoms) to the Forensic Science Laboratory with two different case numbers, and with similar descriptions of the two offences alleged to have been committed written on the two different container bags.

The test to be applied is whether the exhibits were in different uniquely sealed and marked packages all the way through from their collection to their analysis. There is a need to show that no tampering could have occurred during the collection, transportation, storage and analysis of the evidence concerned (SAPS, 2011a, p. 30). In this case, Officer A was unable to prove and/or to establish lack of tampering in the chain of custody. The participants were asked what they considered to be the contributing factors that rendered the evidence found at the crime scenes concerned inadmissible in a court of law. The majority agreed that, regardless of the legislation in such regard, professional conduct, regarding the ethical obligations of personnel working at the crime scene, is of paramount importance. The participants' responses corroborate those discussed in Bórquez (2011) and in Ludes, Geraut, Väli, Cusack, Ferrara, Keller, Mangin and Vieira (2018), namely that the chain of evidence must be maintained and established in court, whenever presenting evidence as an exhibit. Bórquez (2011, p. 820) posits that evidence requires conscientious handling to avert any possibility of tampering. The chain of custody is said to be the sequential documentation or trail that accounts for the sequence of custody, control, transfer, analysis and disposition of physical or electronic evidence. The goal concerned is to establish that the evidence related to the alleged crime was collected from the crime scene itself, and that it remained in its original/unaltered condition, without being tampered with or having been deceitfully 'planted', so as to make the accused appear guilty. Ensuring the integrity of the chain of custody helps to maintain the integrity of the sample(s) concerned. The traceability of the record of the control, transfer and analysis of samples indicates the extent of transparency that is present in the procedure. The participants noted that that all role-players should perform their duties with a due sense of care and professionalism (due diligence) and objectivity, in terms of which they should 'treat evidence for what it shows, not what you think it shows', open-mindedness and impartiality. Some of the comments made in the above respect follow:

If there is conflict between preservation of evidence and the possibility of saving a human life, discretion is essential in making it a priority to always give emergency medical care to the injured. Otherwise, the accused could later institute a civil claim that confession was forced, with the threat of not allowing medical personnel to attend to the suspect. (Focus Group 1)

Poor collection without [the] wearing [of] gloves, packaging where a wrong bag is utilised, as well as [the] proper chain of custody not [being] observed, could render evidence inadmissible in a court of law. (Focus Group 2)

Contamination by curious onlookers, both from the community, as well as from the SAPS or other law enforcement agencies, could be if [the] Metro officials, for example, walk over the blood at the scene, thereby destroying the blood patterns [that were evident] before the evidence is collected. This renders the evidence inadmissible. (Focus Group 3)

Mokwena (2015, p. 11) regards a clear example of a task that requires expert knowledge at the crime scene is the handling of blood, with there being a possibility that blood on the ground might be contaminated. As blood is an extremely valuable physical clue in the case of most violent crimes, its collection cannot be left up to inexperienced officers. Bloodstains and blood drops can be found in a number of different places, with it being essential that the blood concerned be removed by an expert. As blood samples tend to be exposed to various environmental conditions, they sometimes undergo change. For example, its glossy quality might disappear as the result of the effect of sunshine and heat, with it changing in colour from red, through brown, to black, or even to green, blue or greyish-white. Often, only an expert can recognise whether a particular stain is, in fact, one of blood. The technician, who reports to the crime scene manager, must be able to evaluate the situation; to decide on, and to appoint, a crime scene processing team; to identify, note and protect all possible physical evidence; to determine what resources are required for the processing of the crime scene (like evidence collection kits, equipment for identifying blood that has been cleaned up, or the input of other experts, like blood spatter technicians); and to keep a record that will, later, form the basis of a report about how the scene concerned was managed from start to finish (Omar, 2009, pp. 65-66).

Findings and Conclusion

The aim of this paper was to evaluate the level of KMC during the processing of a crime scene in the SAPS. The findings made confirmed that most of the participants concurred that they did not consider the first responders in the SAPS as having adequate crime scene management knowledge, due to the fact that most crime scenes were not properly managed or secured as was expected by both the community, as well as by senior managers within the SAPS. Such was attested to in a ruling made by the presiding judge in the case of the indictment of the aforementioned Oscar Pretorius, in which inferior police work was perceived as having been undertaken at the crime scene. Consequently, the SAPS is seen as needing to improve on the organisation and coordination of the crime scene, from the initial stage through to the completion of the investigation. Such improvement should include what needs to be done (i.e. the sequence of actions and the setting of priorities), who is allowed to enter the scene (i.e. with access to the scene being limited to those personnel playing an essential role in the crime scene investigation, as well as in the medical care of any victims present at the scene), who is responsible for which tasks (e.g. in terms of the designation of a leader, the definition of roles and responsibilities, the assignment of tasks and the need for specialised expertise), and how the required actions are to be undertaken (e.g. as regards the applicable procedures, the need for specialised equipment and tools and the required communication channels). The findings of the current study also highlight that the majority of the participants agreed that, while some general principles relate to crime scene investigations, knowledge regarding how to package the evidence and how to interview witnesses and suspects, as well as regarding many activities of crime scene investigation and the forensic process, at times might become a challenge to some of the participants involved. The participants concerned referred to such challenges as how to obtain the appropriate authority to enter the scene, especially a private property, so as to be able to conduct the investigation and to handle the evidence (e.g. what type of sealing procedure is required).

The integrity and credibility of evidence in a single process of chain-of-custody management are critical components of the operations (or of the chain of evidence). A key development in forensic investigation in the current century has been the increased use of DNA evidence in the investigating and prosecuting of criminal offences (Maluleke, 2017; Maluleke & Mofokeng, 2016, 2018). According to the SAPS (2004a, p. 10), the crime scene is the starting point of an investigation, as this is where direct or indirect proof of the commission of crime exists and where evidence can be found to solve the crime committed. In addition to the above, Miller (2011, p. 115) explains that crime scene investigation is the beginning point for the successful use of physical evidence by both the forensic laboratory and the criminal investigators concerned. However, evidence can only be properly collected if the crime

scene is handled in an organised and objective way. The police officials (including the first responding patrol officers, detectives and CSTs) at a crime scene are expected to know what is required of them, and to be familiar with both the advantages to be gained from correct conduct and the disadvantages to be suffered from incorrect conduct (SAPS, 2004a, p. 4). Nevertheless, the present study indicates the unsatisfactory conduct of some members (including some senior police officials) at crime scenes where they have been found to mishandle the evidence. The lack of knowledge, skills and understanding, as well as improper training, have all been identified as playing a major role in the apparent inability to solve certain cases. Mastering crime scene management can lay the groundwork for the competent management of the common forms of evidence that may be encountered at a scene of crime, and of the techniques used for the recovering of the relevant evidence, which techniques can include the use of cordons, guards and protective measures, like tents. Such activities need to be managed to allow for all evidence recovery to be carried out in a logical sequence that ensures, wherever possible, that no evidence type is compromised. The recovery must be carried out transparently, in a manner that demonstrates to the court the impartiality of the examination involved.

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