EMERGENCY INCIDENTS: ASSESSING THE UNIVERSITY OF THE FREE STATE'S STATE OF PREPAREDNESS

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Bloemfontein

Declaration

I, Mthembi Chauque, declare that the master's degree dissertation that I herewith submit for the master's degree qualification *Master of Disaster Management* at the University of the Free State is my independent work, and that I have not previously submitted it for a qualification at another institution of higher education.

Signature: …… Date: 27 January 2021….

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Acknowledgements

First, I would like to say, with God all things are possible, and from the bottom of my heart and soul I am thankful to God for protecting me and guiding me in this quest. Truly, his mercy and grace endures forever.

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Dedicated to …

This mini-dissertation is dedicated to my loving mother, Anastacia Chauque.

She has been my reason to rise up, work hard and wake up every day and try again. Although it is with great sadness to note that Anastacia passed away in June 2019 while I was busy with this research and cannot bear witness to my hard work. May her soul continue to rest in peace.

Abstract

The aim of this study was to examine the level of emergency preparedness at the Bloemfontein Campus of the University of the Free State. The research examined the measures put in place by the university to prepare for any kind of emergencies that face many universities in the world, as well as a sense of obligation and hurdles hindering further preparedness. Data was collected from 80 participants in different areas of the Bloemfontein campus. The study found that the major incidents that the university experience were civil unrests, theft and assaults, but the university was prepared to handle all these emergency incidents. The Occupational Health and Safety guide or checklist was used to assess the safety of the Bloemfontein Campus facilities, and it was found that the lecture halls and areas within the campus met the standards. In addition, the study found that the students were of the impression that the university was able and prepared to deal with emergencies; however, the majority of the female students had a perception that they were not safe. The results showed that the students' level of preparedness was limited by perception and lack of interest. The main recommendation was information management, which may be facilitated by increased communication and other innovative and strategic preparedness campaigns supported by the university.

Keywords: Disaster preparedness, Emergency incidents, Occupational Health and Safety, University resilience

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List of Acronyms and Abbreviations

DMA	Disaster Management Act
HEIs	Higher education institutions
NDMF	National Disaster Management Framework
MOE	Margin of error
OHS	Occupational health and safety
OHS Act	Occupational Health and Safety Act
UFS	University of the Free State
UK	United Kingdom
UNDP	United Nations Development Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNISDR	United Nations International Strategy for Disaster Risk Reduction
UNDRR	United Nations Office for Disaster Risk Reduction
USA	United States of America

Glossary of Terms

- ***Disaster:*** A serious disruption in a society can cause widespread human, material and environmental losses that exceed the capacity of the affected society to face its own resources (United Nations International Strategy for Disaster Risk Reduction [UNISDR], 2009).

- ***Disaster preparedness:*** Preparedness is the state of taking steps to reduce the loss of human life and other harm to the least extent possible by organising rapid and effective response and rehabilitation measures. In other words, willingness to implement the necessary measures for an effective and timely response to an event (UNISDR, 2009).

- ***Emergency:*** A situation arising from an actual or imminent event or an event that requires immediate attention (UNISDR, 2009).

- ***Evacuation plan:*** Evacuation event planning it's an urgent immediate escape of people away from an area that contains an imminent danger . Examples of hazards include floods, fires, earthquakes, explosions, refugees, and internally displaced persons (Carter, 1991).

- ***Risk:*** A probability of meeting danger or suffering harm or loss in relation to a hazard specifically described as the probability that a disaster will occur. Normally using the relative terms such as high risk, medium risk and low risk (Carter, 1991).

- ***Vulnerability:*** The degree to which an area, people, physical structures, or financial assets are exposed to loss, injury, or damage. Vulnerability can be classified into three parts: physical deterioration, social deterioration and economic deterioration (Fuchs, Birkmann & Glade, 2012).

Chapter 1
Setting the Scene of Universities' State of Preparedness

1.1 Introduction

Over the past few years, universities have started to critically consider the safety and well-being of their students regarding the risk of exposure to emergency incidents (ProtectED, 2017). Some of the risks universities are exposed to, are crime, civil unrest, building fires and even trauma to student and staff alike. For instance, when students are exposed to such risks, together with their burdens such as inadequate food and financial struggles, they ultimately develop a negative attitude towards the university and their studies, and even lose the urge to pursue their dreams. Additionally, students begin to question the readiness of the university to keep them safe (Carrico, 2016).

Ultimately, the students' type of questions indirectly breed the perception of unsafe campuses. According to Henig (2018), students cannot reach their full potential if hampered by issues that affect their safety, security, and well-being. High crime rates on campuses can discourage future students from attending a particular college or university, as well as parents paying tuition to send their children to institutions that may be considered unsafe (Fisher & Nasar, 1992). This implies that universities are required to take a well-organised and coordinated approach to promote the health and well-being of their students.

The safety of students is very important in all parts of the world, be it small or big cities (Gebbie, Kerfoot & Wakefield, 2003). The South African Occupational Health and Safety Act, Act 85 of 1993 (hereafter OHS Act, 1993), states that organisations such as learning institutions must have safety or disaster preparedness measures in place and are functional (Messer, 1993; South Africa, 1993) It is significant to comprehend that emergencies occur when least anticipated and for this reason there should be a method or preparation system that is put in place to prevent or manage such occurrences (Scott County Public Health, 2017; Auf der Heide & Irwin, 1989). To show how vital emergency and incidents preparedness are, many policies and legislations are mandatory to adhere to at all higher education institutions (HEIs).

According to the OHS Act (1993), an employer needs to arrange for and sustain the most reasonable and practically safe work environment that is not risky to the health of the employees. A specific objective of the national Disaster Management Act, Act 57 of 2002 (herafter DMA, 2002) and its ammendment of 2015, is to make it a custom to prevent, be prepared and build resilience by all means through knowledge, innovation and education. Not only South Africa sees the significance of implementing legislation supporting safety within its distinct areas such as universities, other organisations such as the United Nations Disaster Risk Reduction also emphasises safety measures. The Sendai Framework for Disaster Risk Reduction (SFDRR) 2015–2030 has four priorities, one of which is about policy implementations that support mitigation, preparedness, response and recovery of disasters and emergencies (Henstra & Thistlethwaite, 2017). As stated by the United Nations Office for Disaster Risk Reduction (UNDRR, 2017), disaster preparedness refers to predicting potential disasters and issuing warnings or taking precautionary measures in response to warnings as well as modification of response by organising and strengthening capacity to deliver timely and effective rescue relief and assistance.

The assumptions of the state of emergency preparedness at universities are:

1. Lack of emergency preparedness.
2. Lack of student awareness of preparedness measures put in place in case of emergency.
3. Negative perception of the state of safety and preparedness at a university environment, particularly around females, which may result in a lack of interest in their studies.

The study sought to examine the state of preparedness at the University of the Free State (UFS), Bloemfontein Campus to major emergencies.

1.2 Study area, background and description

The UFS was establishment in 1904 as the Grey University College, it became the University of the Orange Free State in 1950 and was renamed in 2001 as the University of the Free State (UFS History, 2020). Since its establishment, it has gradually grown as an institution of higher learning that is recognised as one of the

oldest institutions of higher education in South Africa. As indicated by the UFS Facts and Figures (2017) over the past three years the estimated population from 2018 to 2020 was as follows:

2018 | 40 491 students enrolled in seven faculties.

2019 | 39 420 students enrolled in seven faculties.

2020| 41 675 students enrolled in seven faculties.

These students were from diverse cultures, races, nationalities and backgrounds. The international affairs unit of the UFS showed that in 2017, 1 849 students were international students from 53 different countries (UFS Facts and Figures, 2017). Today, several international partnerships contribute to knowledge and skills within the university. In 2019, the institution employed about 2 388 staff members in 122 different departments. Although some of the buildings might be old, 12 new buildings have been erected between 2012 and 2017 over all three campuses of the UFS, namely the Bloemfontein Campus, the Qwaqwa Campus and the South Campus. This study paid attention to the Bloemfontein Campus to assess its emergency preparedness as it is the main campus and still expanding frequently, compared to the other two campuses (UFS Annual Report, 2017).

The Bloemfontein Campus is the biggest of all three campuses of the UFS, with numerous residences on its premises, of which are junior and senior for either male or female or mixed residences. There are also day residences in which students can spend time, but they do not sleep there. The Bloemfontein Campus has experienced several incidents such as fires and civil unrest in recent years (Politics Web, 2016). As indicated by the DMA (57 of 2002), and the OHS Act (1993), incident preparedness should be part of the disaster or emergency plan to mobilise and provide relief for anticipated disasters in any area similar to the UFS Bloemfontein Campus.

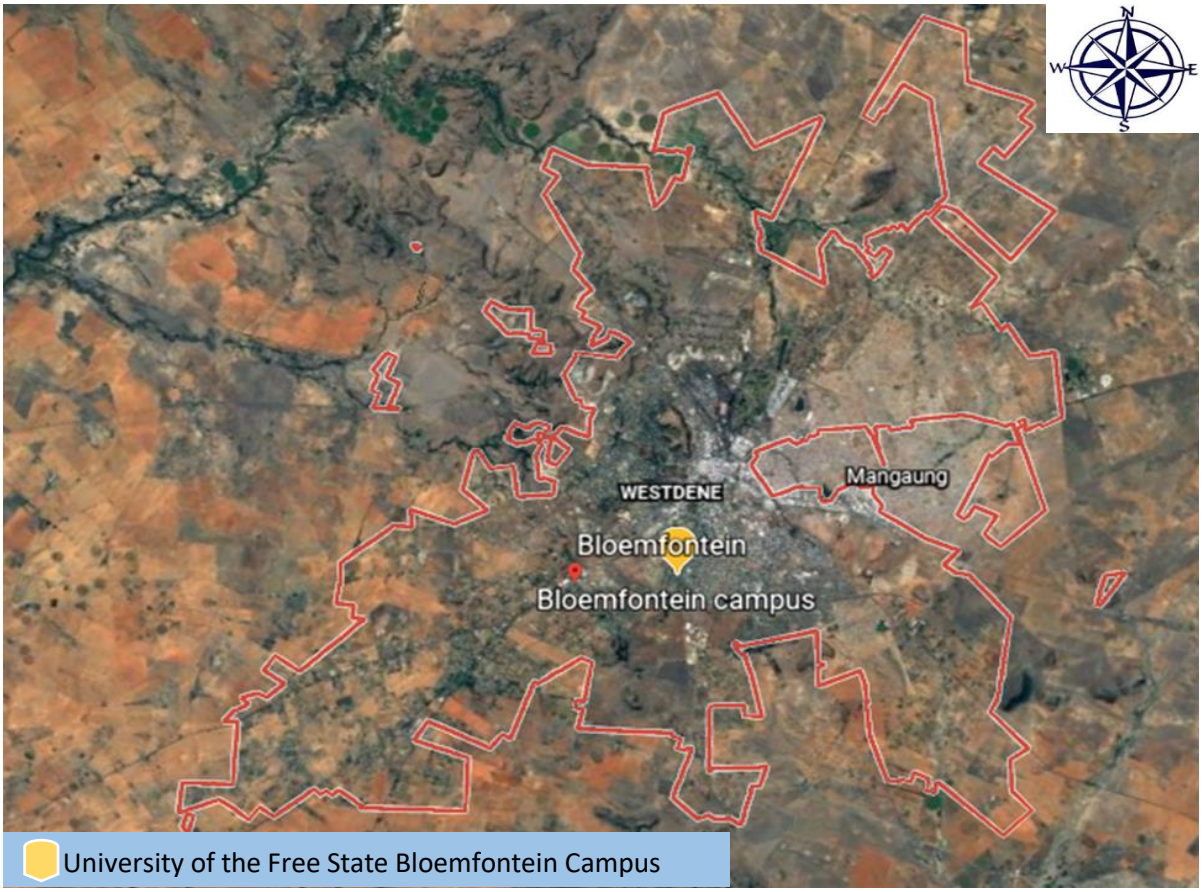

Figure 1.1 Map of Bloemfontein and the position of the University of the Free State

Source: Google Earth (2020).

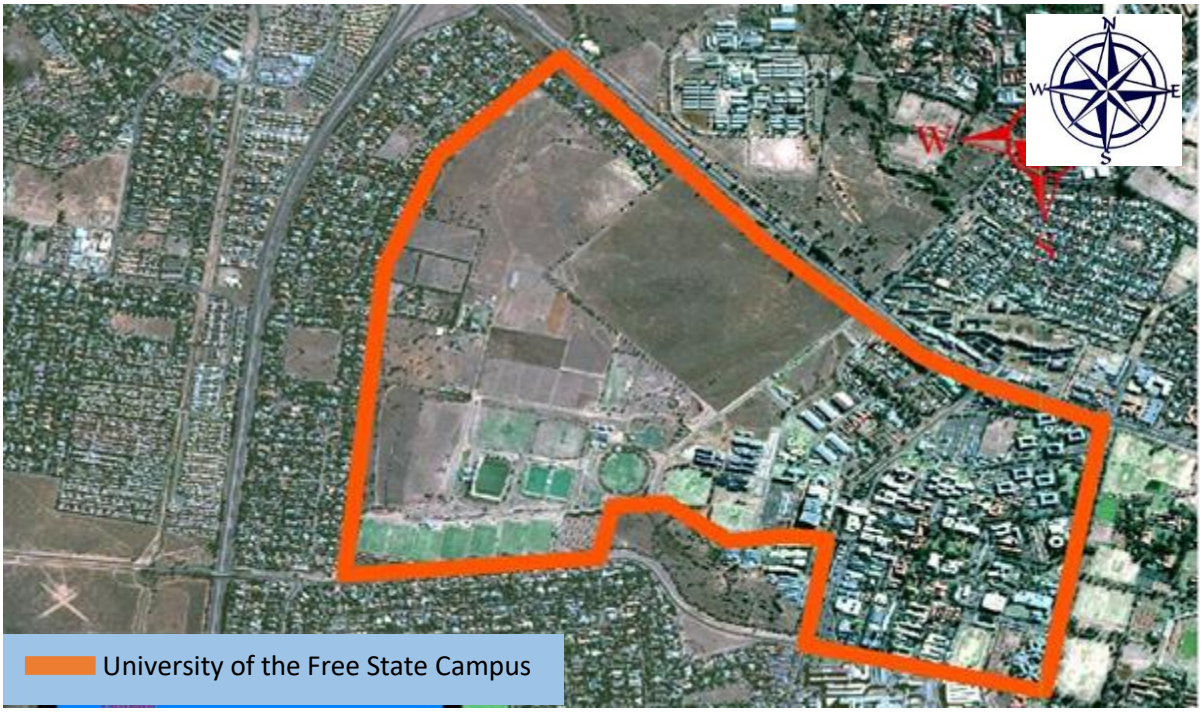

Figure 1.2 Arial photograph of the University of the Free State Bloemfontein Campus

Source: Google Earth (2020).

1.3 Background of the study

In a survey that was conducted in the United States of America (USA) in 2015, many parents viewed a campus environment as the safest environment for their children (Rave Mobile Safety, 2015). However, campus safety is not always perfect, and several incidents have been recorded worldwide. Such incidents include cases of civil unrest, gender, race and religious discrimination, along with natural incidents such as drought, fires and flash floods leading to loss of lives (Rahman, 2013). Emergencies at universities have increasingly gained recognition as a serious global concern. For instance, fire outbreaks due to negligence from students, mugging and assaults in dark spots due to building designs, and even flooding which resulted in road accidents on campuses, were recorded. Simililarly, other emergency incidents may be crime-related and consequently resulting in the implementation of policies and acts such as the federal Clery Act of 1990 which was promulgated in the USA following the brutal murder of a university student by the name of Jeanne Clery.

The Clery Act requires all HEIs to keep crime statistics according to the crime that occurred on a particular campus. The Clery Act also requires all universities to issue and exchange policy statements and information about their efforts to give knowledge, and talk about justice and practices that promote, improve and maintain campus safety (Jackson, 2015). Accordingly, the Clery Act can also function as a valuable foundation of ideas to address campus crime at universities in South Africa.

For instance, the implementation of the Crime Awareness and Campus Security Act of 1990 in the USA was mainly because the legislators were concerned with campus safety issues. Previously, incidents of crimes were not disclosed other than in educational records (Fisher, 1995). It is via this legislation that institutions of higher learning must now take full responsibility after every crime incident, and issue public reports and records of crime incidents that occurred in a particular year. The Act also allocates a budget to support and monitor emergency incidents that occur at a particular college and university (Jennings, Gover & Pudrzynska, 2007).

Numerous articles have been published from countries such as France, Israel, Chile, Iraq, and Greece that describe the type of safety issues they encountered. These studies described student riots and clashes at universities with many casualties (Ohsako, 1997). The studies discovered reports of incidents where students set buses

and vehicles ablaze, flipping vehicles with a great deal of nuisance and noise (Euronews, 2018). In 2018, students in some parts of Europe were involved in a march which ended in a lot of violence. To elaborate, student protesters tossed stones, flares and gasoline grenades at the police force surrounding parliament in Athens, putting the safety and security of many people at risk (Reuters, 2018). Ramzy (2019) reported similar occasions in Hong Kong in Asia where investigators found nearly 4 000 firebombs during a protest at the campus of the Polytechnic University.

South Africa too has experienced several incidents, including violent student protests due to crimes committed by and against students which raised concerns regarding the safety of students (Stuurman, 2018). Because of violent activities, students had been injured or even lost their lives. For instance, one of the highlights from the 2016 *#Fees Must Fall* movement was that almost 619 students were arrested and a student leader from Tshwane University of Technology lost his life as a result. Furthermore, a professor from the University of Cape Town committed suicide due to depression caused by the treatment he received from the university by being a supporter of the movement (Pitt, 2018).

Irrespective of whether these incidents are human driven or natural, they are issues that require a level of preparedness and response regarding the risk of emergencies. Another issue witnessed in the past was lack of water at the QwaQwa Campus of the UFS. The students from QwaQwa Campus marched to show their dissatisfaction at the Maluti-a-Phofung Municipality and demanded water (Seleka, 2020). Over the past two decades, several reviews discussed models that identified a strong relationship that exists between students and their campus environment (Tseng, Duane & Hadipriono, 2004). Research done on higher education indicated that an area in which a campus is located might play a role that makes a campus unsafe as compared to the campus environment itself (Volkwein, Szelest & Lizotte, 1995).

Leaman (2018) justified the above statement and hypothesis looking at Selly Oak in south-west Birmingham, England, where there was a misunderstanding between students about a lack of safety. The area where Selly Oak is situated has high crime rates according to the statistics from law enforcement in the United Kingdom (UK). According to the report, about 75% of students had a conception that the University of

Birmingham and the student leaders were not doing enough to promote student safety in Selly Oak (Leaman, 2018).

The UFS also has recorded incidents related to an unsafe campus. Reports reported on a violent, racist and barbaric incident that occurred in 2016 at Shimla Park Stadium which led students into protests, clashes and riots among students that ended a rugby varsity cup match at the Bloemfontein Campus (Nicholson, 2017). Moreover, some of the staff members were injured, and later some buildings, such as the EBW ("Ekonomiese en Bestuurswetenskappe") auditorium, were vandalised. These incidents raised concerns regarding the safety of their children in the minds of many parents and guardians. Although such incidents do not happen often, when they do occur, they are unexpected and result in destruction of people and preventing them from continuing with their regular activities (Politics Web, 2016).

Universities are not immune to emergencies; as a result, in one way or the other, they are affected by incidents and disasters. It is necessary for an HEI society to be involved in disaster risk reduction because of their contribution to society. Everything that poses a threat to a person's safety has negative consequences for their health and well-being, resulting in physical and emotional trauma, loss of self-esteem and lack of concentration (Ahmad, 2007). Given the risks mentioned above, surely the state of preparedness of HEIs requires assessment for the improved safety of students.

1.4 Problem statement

Deriving from the background of the study it is evident that there is a rise in the quantity of emergencies reported at universities worldwide. The increase in incidents raises questions on the level of risk awareness and preparedness of universities and their students to any kind of emergency. The UFS has experienced its fair share of emergency incidents; therefore, a critical analysis of its risk assessments, preparedness and response planning was deemed necessary. In addition, the UFS compliance to the South African DMA (2002), the Disaster Management Amendment Act, Act 16 of 2015, and other statutes that mandate the safety of students in universities, are questioned. The purpose of this study was to investigate the UFS level of preparedness to relevant crises as well as the students' level of awareness of possible risks and the risk reduction strategies implemented by the institution.

1.5 Main research questions

To address the research problem, the study aimed to answer the following research questions:

1. To what extent does UFS proactively assess and prepare for possible risk and safety assessment for emergency risk reduction at the UFS?
2. Does the University of the Free State inform its students on how to protect themselves from the possible risks for their continued safety and what prevention programmes are there to educate students about safety?
3. What are the students' perceptions of the university's emergency management strategies in place?

1.6 Aim and research objectives

1.6.1 Aim

This study aimed to determine how ready the University of the Free State was in terms of selected potential risks and emergencies that can affect students and prospective staff.

1.6.2 Objectives

The objectives of the study were to:

1. Find out if there was an active risk and safety committee at the University of the Free State and assess the risk assessments done to inform the development of its risk reduction, awareness and preparedness planning.
2. Find out from perspective students if they were well informed on how to protect themselves from the possible risks for their continued safety, and also, to look closer at the prevention programmes that the University of the Free State have to educate students about safety.
3. Find out from the students what their perception is regarding the university's emergency management strategies that are in place.

1.7 Research design and methodology

1.7.1 Design

This study has employed a mixed method research design, specifically embedded design. This research design is used to gain an understanding of fundamental responses and opinions. It provides insights into the problem and helps to create ideas for qualitative and quantitative design (De Vos et al., 2011). In this way, the responses provide statistical data that is inferable and enlarge the context of the study.

1.7.2 Methodology

Williams (2007) stated that any research method aims to accommodate the main research questions and ensures that all ethical views are addressed with a positive attitude in the end. This study has employed interviews, questionnaires and observational studies with reference to Terrence (2005). As indicated by Check and Schutt (2012), the above research techniques are suitable to use when investigating a diverse group such as universities.

1.7.2.1 Population and Sampling

The study made use of a sample size of 80 respondents, which fulfilled two requirements: attention to detail and precision. The relative diversity of the population at the UFS and the reliability of the respondents in this research have influenced the size of the sample chosen. To elaborate, the number of respondents were chosen using a formula that combine the total UFS population size and using statistical techniques such as the confidence interval and a margin of error of 29 000 out of 41 000 of the population at the Bloemfontein Campus (Currivan 2011).

The level to which the sampling was outlined included the whole population, giving attention to detail, while the level to which the sampling frame includes correct data about the targeted population, provides precision. In this case, two groups of sampling techniques, probability sampling and a non-probability sampling group, were utilised. The preferred technique for this study was probability sampling, where the sample must be selected randomly from the list of populations required (Robson, 1993).

The kind of probability sampling that was applied was stratified random sampling. This type of sampling is suitable for heterogeneous populations because it was inclusive of the whole population of the UFS (De Vos et al., 2011). The second major group was the non-probability sampling which involved the population size, or the members of the population are unknown and was not used in this study for it was deemed irrelevant. However, the most relevant kind of sampling of the non-probability sampling group was quota sampling (De Vos et al., 2011). As indicated by Robson (1993), quota sampling provides a sample that is likely to be as similar to the population as possible, based on characteristics such as gender, residence, and age, as in this case.

1.7.2.2 Data collection

The data collection process took roughly eight days from 1–8 September 2019. Questionnaires were randomly handed out at the UFS Bloemfontein Campus during different time periods and areas and were organised based on previous literature on disaster preparedness and campus safety and security. Furthermore, another technique of data collection used, were interviews. The interviews were scheduled on different days with the Dean of Student Affairs as well as the OHS officer of the UFS. The study also collected data using an observational study by means of a checklist. This checklist was used to identify and tick down all the safety and preparedness measures put in place by the UFS. The objective was to use all three techniques in order to compare them with one another during data analysis. Lastly, the study used observational data of the measures put in place by the UFS, thus verifying the presence of preparedness for incidents and this was done by taking pictures of those measures to serve as proof.

1.7.2.3 Data analysis

The data analysed employed a quantitative method using research survey where the researcher used questionnaires. The questionnaires were collected and captured in a Microsoft Excel spreadsheet and different variables were used to create a pivot to formulate graphs which were analysed in detail according to the main questions of the study. The research analysis also employed the qualitative method, specifically a phenomenological method, where the researcher used interviews and added perception of respondents about the study. Furthermore, the data analysis also made

use of the observational study which was analysed applying an ethnographic method type of qualitative approach in which the researcher embedded himself into the environment as an observer (Vashishtha, 2019).

1.7.2.4 Data validity and reliability

Validity, as discussed by De Vos, Strydom, Fouché and Delport (2011), refers to trustworthiness, precision, validness, and adequacy, while reliability refers to consistency and the level at which something can be depended upon. These are the two concepts used to justify and reach justifiable and unbiased research investigation.

1.8 Significance of the study

There appears to have been little research on the subject and especially limited research at the UFS, although disaster management is a serious national problem. The purpose of the study was to determine readiness conditions and what was missing. The aim of this process was to contribute to the basis of knowledge in this field. Research results may be most important for students, teachers, and teaching stakeholders to use a fundamental approach such as security in university planning. The study can help improve the institution's preparedness, resource allocation and institutional planning; thus, it can help improve the existing strategies and practices of HEIs across the country. This study can also be helpful for an independent state university to be a leading university in the implementation of the Disaster Protection Act of 1973 and the Occupational Health Safety guidelines. It can prove beneficial in bringing in more investment, development, and engagement while enhancing the safety of people on the university campus.

The expected result of the study was that many university institutions would follow and conduct similar studies. Also, to see the difference between employed knowledge and plan for emergency and/or incident preparedness.

1.9 Ethical considerations

Prior to commencing of the study, ethical clearance was sought from the UFS Ethics Panel. Formal authorisation was given to the researcher to commence with the study at the UFS and survey students (Appendix 1). Furthermore, each student completed

an approval consent form and were provided oral informed consent that contains information on the scientific purpose of the study survey and the use of data to be obtained (Appendix 2).

1.10 Strengths and limitations

The UFS Bloemfontein campus has graduates who participated in the analysis of the results. This was a strength because it was less physically taxing during the collection of data. The main drawback was that many female students were willing and eager to complete questionnaires while many male students were unwilling and reluctant to do so.

1.11 Chapter outline

Chapter 1: Introduction – Setting the scene of universities' state of preparedness

Set the scene by giving an overview of the study by addressing the background of the study, problem statement, research questions, research objectives, research design, research methodology and limitations of study.

Chapter 2: Literature review

Reviews the conceptual framework to achieve disaster resilience and also addresses scholarly reviews regarding emergency incidents on campuses and the consequences thereof. This chapter also discusses the institutional framework in terms of regulations that support the implementation of emergency preparedness.

Chapter 3: Research design and methodology

This chapter brings to light the research methods used and justifications of using such methods, and also the data collection process and techniques employed throughout the entire research, while considering the ethical clearance to ensure that no respondent's rights are violated.

Chapter 4: Data presentation and analysis

This chapter breaks down what was gathered as per Chapter 3 in order to obtain results, analysis and findings of the objective and assumptions of the research addressing the state of preparedness at the UFS.

Chapter 5: Recommendations and conclusion

Presents the overall summary, key findings, the implications of the study with areas of further research and recommendations of the research that will enhance the state preparedness at the UFS Bloemfontein Campus.

1.12 Conclusion

This chapter defines the subject's study area and the need for the study. A preliminary literature review of the study's research methodology and design was presented along with the study's inherent deficiencies as to how the study was performed. The purpose and goal of the study were identified and the importance of conducting such a study and the possible results.

Chapter 2
Emergency Incidents State of Preparedness – Global and Local Perspectives

2.1 Introduction

This chapter aims to discuss the literature related to the research topic, namely assessing the extent to which incident preparedness is achieved in all spheres of work. The chapter initially concentrates on the conceptual framework for cost and benefit analysis concerning universities' state of preparedness as well as a conceptual model to build resilience for disasters alike. Secondly, it provides a scholarly review of incidents and safety issues at universities worldwide to address the effects of unsafe campuses to understand how prepared the HEIs should be. Furthermore, the chapter addresses the legislative review and regulations governing the establishment of safety frameworks at institutions worldwide, narrowing it down to South Africa.

According to a study by Gyamfi and Gyaase (2015), a safe learning environment provides students with the opportunity to expand their academic potential in an environment free of discrimination, intimidation and threats to physical and mental well-being. Gyamfi and Gyaase (2015) further defined a safe learning environment as those that respond to corrective actions to eliminate them, or those that monitor risk and regularly evaluate and monitor various aspects of space (Carrico, 2016). Emergency incidents have been experienced in countless ways on university campuses since the establishment of HEIs.

Many university residence students are away from their parents and have to face the world outside of their comfort zone. As a result, students are particularly vulnerable to emergencies (Leaman, 2018). Some people will adapt to university life faster than others and grow to become successful academically and socially. Others might take longer to adapt to their new-found independence from parental responsibility as they adjust to the university atmosphere. Learning may not be an ideal experience for all students, as they may become victims of incidents on campus (Pezza & Bellotti, 1995).

2.2 Conceptual framework review

The conceptual framework in this research is significant as it addresses how the researcher synthesises the literature to clarify the phenomenon. Furthermore, the conceptual framework lies within a much broader framework called a theoretical framework. It outlines the activities needed for the examination, given his past knowledge on other researchers' perspectives and his perceptions regarding the matter of exploration. In simple terms, the conceptual framework is the researcher's comprehension of how the specific factors in his examination interface. Subsequently, it recognises the factors needed in the exploration investigation. It is the analyst's 'map' in perusing the research (McGaghie, Bordage & Shea, 2001). Fiqure 2.1 below shows the conceptual framework of the cost-benefit analysis of emergency preparedness at the Bloemfontein campus.

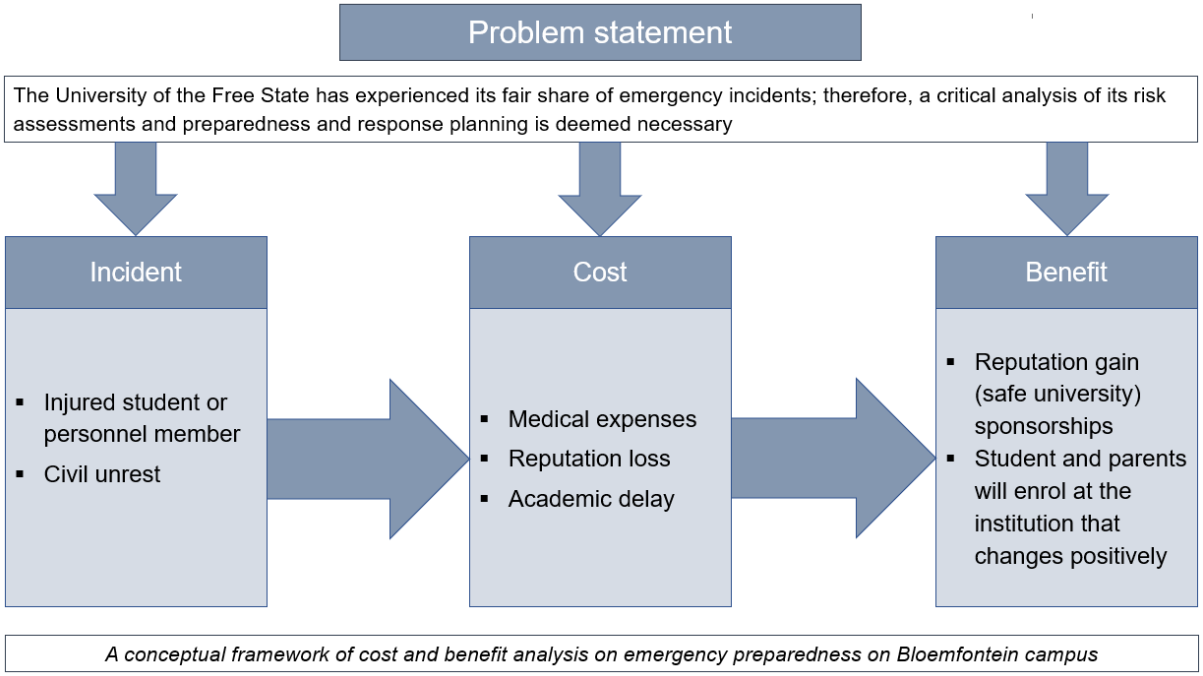

Figure 2.1 Conceptual framework

Source: Author's own (2020).

2.2.1 Disaster resiliency and preparedness

In a study done by Kapucu and Khosa (2013) a model was created covering significant organisations and structures required to achieve a university that is resilient and prepared for disasters. Incidents always occur regardless of the kind of measures and

preparation put in place by institutions. However, it is significant to take note that many things take part in any incident itself and thus make each campus unique. Campuses need to build up an individualised arrangement dependent on the particular dangers and vulnerabilities that they face, and this requires teaming up with other universities. The information in Figure 2.2 has been known to be used by many universities across the USA and proved useful for universities in South Africa (Kapucu & Khosa, 2013).

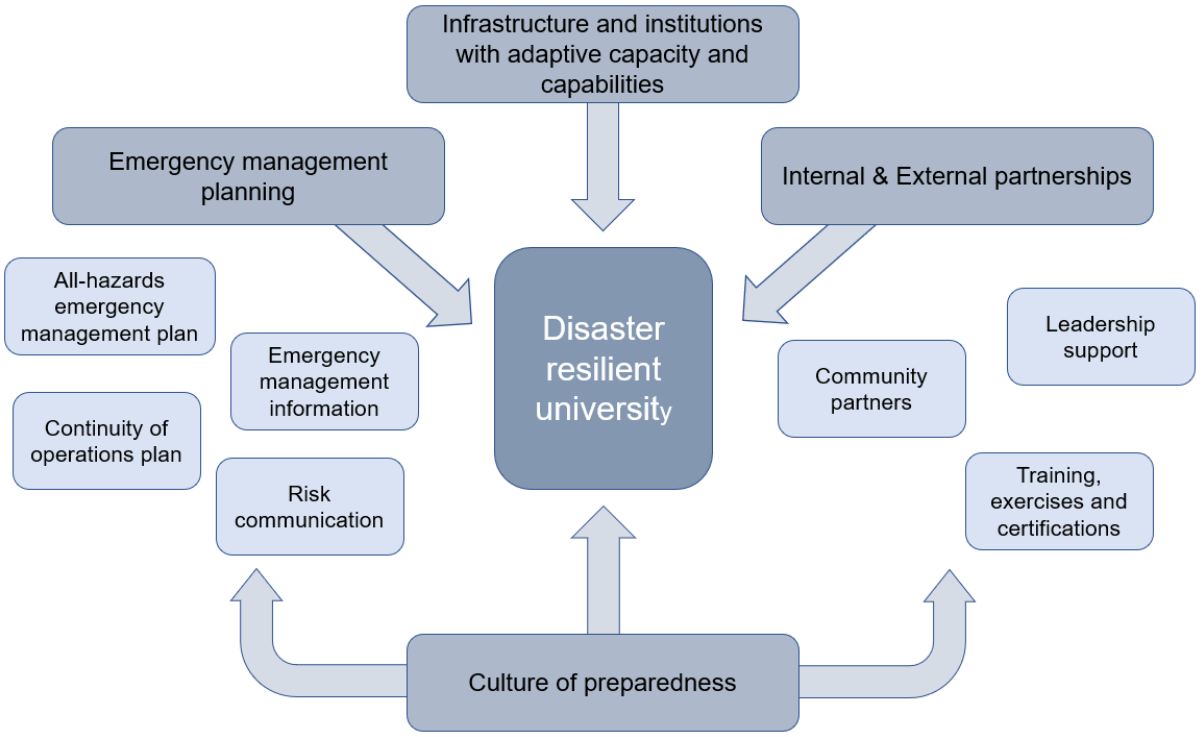

Figure 2.2 University disaster resilience and preparedness

Source: Adapted from Kapucu and Khosa (2013:18).

2.2.2 Emergency preparedness

Disaster preparedness requires in-depth forecasting, taking precautionary measures of threats and training to cope with future disasters (United Nations Development Programme [UNDP], 1994). Emergency preparedness also refers to a strategy put in place to ensure an increased reaction to the consequences of a disaster by ensuring immediate response and aid. The UNDP (2014) suggested that a preparedness plan should include a summary of alert systems designed to warn of imminent emergency or incident events.

Furthermore, the core of preparedness is having evacuation plans and further measures to be taken when a disaster strikes to reduce any potential harm to the

community, and the health and well-being of the individuals (UNDRR, 2012). Hence, the UNDP (1994) found it significant for officials and populations at risk to be offered education and training to be prepared. During the training of intervention teams, policies and standards are established as well as arrangements on how the effective plans are to be pragmatic after an incident.

The main aim of emergency preparedness is to offer assistance that guides societies to escape disaster threats and have strategies, resources and mechanisms that can help give relevant assistance to the victims (Twig, 2004).Other reviews from McEntire (2005) cited that mitigation and preparedness is there to reduce human vulnerability to disasters by developing hazard assessments, improve the engineering involved, making sure that land is used appropriately and providing public education (Alexander 2002; Bogand 1989; Briton 1986, Pijawka & Radwan 1985, Weichselgartner 2001). The United Nations Educational, Scientific and Cultural Organization (UNESCO, 2010) argued that the focus of preparedness should be of strategies to respond to a disaster threat or incident, for example, everything that is required in case of emergency must be estimated, and this also includes resources such as the human capital, organisation capital, and infrastructure capital. Rono-Bett (2018) shows in Figure 2.3 the contrast of emergency preparedness.

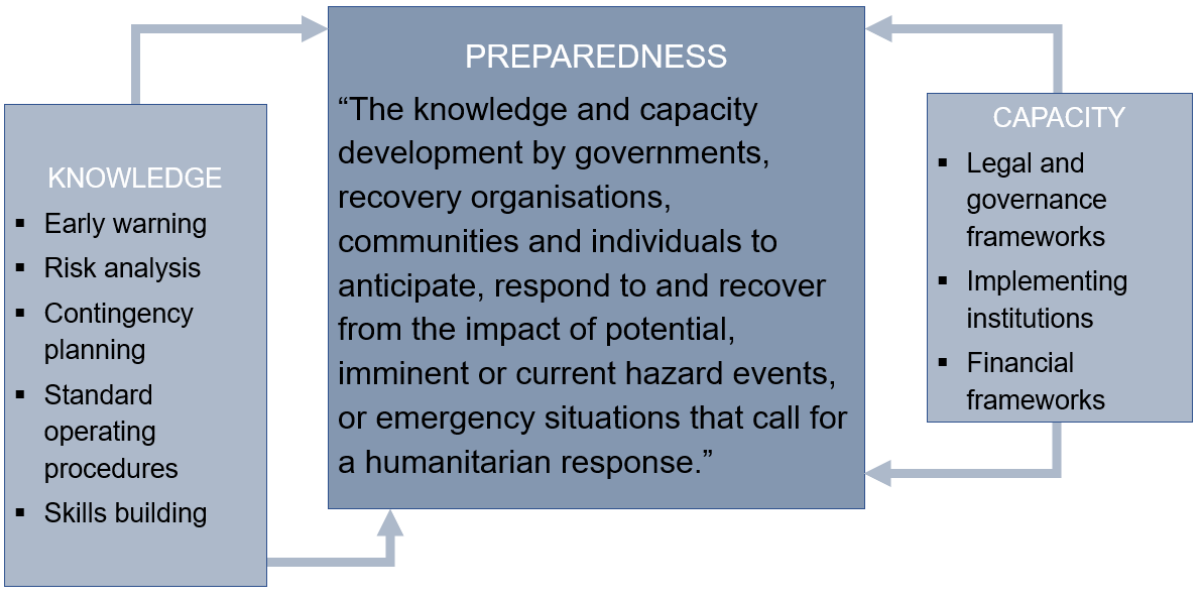

Figure 2.3 The contrast of emergency preparedness

Source: Adapted from Rono-Bett (2018:3).

Statistics South Africa (2017) showed that there are about one million students at universities and about 700 000 at colleges. Hence, HEIs must have a safe learning environment. These institutions are faced with hazards such as civil unrest, biological threats and extreme weather conditions. Hence, it is significant to have an emergency preparedness plan in place or else the lives of all the students are at high risk of danger or even fatality.

2.2.3 Key elements and objectives of emergency preparedness

Nelson, Lurie, Wasserman and Zakowski (2007) discussed the elements of public emergency preparedness which are in relation with the objectives of UNESCO (2010). It is important to note that the key elements of incident preparedness address similar aspects of safety in all spheres of work and as a result to achieve a level of preparedness that is effective, and the following elements and objectives should be heeded upon:

Key elements (World Health Organization, 2013)

- **Risk assessment** – Identify the hazards and vulnerabilities, for example student and staff awareness assessment, students and staff at risk, high-hazard buildings that will form the foundation of preparation.
- **Legal climate** – Identify and address issues related to the legislation and policies.
- **Roles and responsibilities** – Assign roles that are clear to people to act during an emergency.
- **Incident command system** – At all levels develop, test and modify current systems to function at optimum level by conducting simulation or drills.
- **Stakeholder involvement** – engage and mobilise the students in participation.
- **Information and communication** – Develop and practice, providing information that is rapid, credible and accurate.

These elements interlink with the nine foundations of the disaster preparedness framework which comprises of undertakings that should be executed in preparation for an impending disaster. These activities may be performed step-by-step or simultaneously depending on the kind of disaster (Kent, 1994). Figure 2.4 outlines

similar activities that ought to be included when conducting a disaster preparedness plan.

Disaster Preparedness Framework		
Components of Preparedness		
Vulnerability assessment	Planning	Institutional framework
Information system	Resource base	Warning systems
Response mechanisms	Public education and training	Rehearsals

Figure 2.4 Disaster preparedness framework

Source: Adapted from Laxetty (1992:3).

Objectives of disaster preparedness framework (UNDRR, 2013)

- To ensure that there is less impact on disasters through relevant actions, as well as to improve the capacity of the potential victims and getting them appropriate help. For instance, looking first after the females and children, those on the sideline, and the less privileged.
- To ensure that the system's abilities for development that strengthen preparedness of communities continue to improve.
- To have reconstruction guidelines so that there is less vulnerability.

2.3 Scholarly review

2.3.1 Incidents on campuses

It is without question that many issues play a significant impact on the kind of incident to be expected from each individual campus, for instance distinct geographical location where some universities face severe rainfall and storms, while others experience severe drought. In a risk assessment report by the London School of Economics and

Political Science (2019) it was stated that the following emergency incidents were forecasted at their campus: death on the premises due to accidents, ill health and suicide; fires, explosion; buildings falling; contamination of water and lack of transport during snow and flood seasons. In addition, the emergency preparedness report by Knox College (2020) serves as an example that many universities in the UK, USA and ASIA have similar incidents in terms of disaster preparedness, for instance, incidents such as fire, active shooters, bomb threats and severe weather conditions.

In African universities, similar emergency incidents of severe weather, bomb threats, and buildings collapsing have been forecasted and also used in emergency plans of many campuses. Kiurunguyu (2019) stated that female students are more vulnerable as they are either raped or used to pay for their grades in exchange for sex. However, students and lecturers agree that these actions are unethical in the educational sphere. In South Africa, incidents of civil unrest, theft and rape are more common emergency incidents. Sain (2017) reported an incident at Nelson Mandela University where students protested for the campus to shut down as a result of an incident involving a student getting raped while her friend got stabbed by the perpetrator at the student study/learning spaces. Furthermore, Nkosi (2018) stated that incidents of rape at the University of Cape Town are more common than any other university in South Africa.

2.3.2 Crime emergencies on campuses

Jennings et al. (2007) claim that many people assume HEIs are protected spaces that are by default, safe to research. It is established that the general environment surrounding the crime's essence is that it is not severe if it does not result in injury or death. However, most of these crime victims went through considerable trauma and a large amount of terror (Heeks, Reed, Tafsiri & Prince, 2018). Incidents of crime are commonly followed by victims experiencing traumatic events that negatively affect their mental health and security sense (Gover, Kaukinen & Fox, 2008).

Many other types of crimes occur besides rape, such as robbery, sexual harassment, assault, theft, burglary, or fraud. However, theft and sexual assault have a higher prevalence than rape (Mkhanye, 2020). Many of these crime types are monitored by the HEI's Standardized Crime Reporting system, and many students fall victim to them.

Mkhanye (2020) contended that some students fear the events that happen on campus and are therefore less willing to engage in them. Gover et al. (2008) found that crimes demotivate students because they do not feel secure and lose interest in their studies and professional careers. As a result, the high campus crime rates contribute to significant numbers of unproductive students.

Safety is freedom from danger and protection from injury. Therefore, a region that leads to specific harm being managed and controlled to protect the well-being and the environment thereof (Maurice, Lavoie, Laflamme, Svanström, Romer & Anderson, 2001). However, it is without much difficulty. While students are said to be safe and protected on university campuses, they are still victims of crime.

2.3.3 University of the Free State violence and crime incidents

Looking at the UFS, emergency incidents have occurred in the past leading to racial, ethnic, and gender-based violence. According to the Politicsweb (2016), the UFS had an incident at Shimla Park where students protested at the stadium and interrupted a rugby match which ended up in many people fighting and the whole incident turned the UFS Bloemfontein Campus into an unsafe campus (Figure 2.5).

Figure 2.5 Injured man brought to safety by students
Source: Laganparsad (2017).

Similar to a report from the Center for Prevention of Hate Violence (2001), the statistics for on-campus hate crimes are higher than any other emergency incidents such as fire, bomb threats and flooding. The report further argued that many students, in particular females, are vulnerable and hesitant to speak out about an incident of crime against them. Most of the time, the victims are unsure of what to report, for instance, the absence of laws protecting gays and lesbians from discrimination based on sexual orientation in some countries, just makes it worse (Carr, 2007).

2.3.4 Effects of an unsafe campus

In order for students to have good health during their studies and also be socially developed, there must be a safe university environment (Readiness and Emergency Management for Schools, 2015). Safety in universities is perceived in many ways and by different researchers. However, staff and everyone in direct contact with or within the institutions may beg to differ with that ideology.

For example, Carrico (2016) argued that university campuses have displayed an environment that is not safe to students and staff. Studies has also shown many complex factors, such as the personal characteristics of students and the contextual characteristics of the campus (Roxanne, 2013), the existence of gangs and drug problems (Duszka, 2015), and the location of universities and schools, are general security of HEIs. Population and poor maintenance have been found to affect public places that can influence the perception of fear in people (Bosworth, Ford & Hernandaz, 2011; Bowen, Bowen & Richman, 2000).

Furthermore, other studies showed that a safe campus will enable good academic achievement (Milam, Furr-Holden & Leaf, 2010). However, this can be argued differently among students that have already perceived their learning environment as unsafe (Holley & Steiner, 2005). They have a habit of having low levels of educational achievement for the reason that what they learn, as well as how much they learn, is changed by the safety state of their learning environment (Keels, 2004).

According to Wentzel and Brophy (2013), it is highly likely that students who are in an unsafe learning environment will not participate in any academic activities that challenge their intelligence and allows them to take risks. The whole perception affects the overall academic achievement (Ratti, 2010). It is, however, different when students

feel safe as they can do better in all areas, free from any form of harm. They are better able to focus on learning, which in turn leads to increased academic achievement (Amoatemaa, Kyeremeh & Arthur, 2017; Readiness and Emergency Management for Schools, 2015).

Research on student safety has shown that perception of school safety can have a greater impact on student success than actual safety (Parent & Kuhlke, 2009). These perceptions should be kept in mind as a result that planning committees meet before, during and after an occurrence of a disaster. The planning includes five areas of the mission to deal with the potential or real threats, namely: prevention, protection, mitigation, response, and recovery in the preparation protocol required (Readiness and Emergency Management for Schools, 2015).

According to Parent and Kuhlke (2009), impact is caused by lack of emergency preparedness. It can have long-term social, psychological and physical effects on the affected population, especially those at risk. In most cases, students are the ones most affected by such incidents because it is at a young, inspiring age that they are most exposed to man-made or natural disasters. Therefore, it is important for scientists and educators to discuss the consequences of man-made and natural disasters institutions.

2.3.5 Disaster preparedness consequences towards students on campus

Doberstein and Tanner (2015) named the following consequences towards students on campus:

- Students experience violence, looting and prevalent loss and destruction.
- There is loss of familiar environment, friends, school and personal belongings during an emergency.
- Students witness or become victims of sexual abuse which often results in high risk of HIV and AIDS and other sexually transmitted diseases.
- Students are affected by the family's ongoing financial struggle and having to deal with incidents of disaster.

- The fear that an event will recur, inability to carry out routine tasks, aggression, difficulty in concentration, loss of developed skills and other common stress reactions are some of the physiological impacts.

2.3.6 Disaster preparedness consequences towards studies

Rambau, Beukes and Fraser (2012) named the following consequences towards studies:

- Conflict or losses caused by natural disasters make the government, especially the Ministry of Education, to become weak.
- Campuses have inadequate or no support because the government is overwhelmed with the immediate needs of the affected population.
- Equipment necessary for teaching and learning are lost and lecture halls are used for shelter.
- The quality of education drops, student drop-outs become high, the number of students enrolling becomes low and limited access to ?? before the emergency.

2.3.7 Health emergency preparedness on campus

This is the capacity for health care facilities and communities to prevent, protect, respond efficiently, and recover from health crises even when their availability is minimal. Rather than concentrating on a specific risk to campus safety, this definition is inclusive and extends to all campus emergencies, considering the scope of threats at higher education institutions (Sattler, Kirsch, Shipley, Cocke & Stegmeier, 2014).

The duty to manage health issues falls on medical practitioners. It is necessary to educate the student body, faculty, and staff, on what to do in an emergency, to reduce harm and casualties. It is crucial to establish efficient ways of communicating, so that campus stakeholders know exactly what to be concerned about and how to respond effectively before an emergency occurs (Egnoto, Svetieva, Vishwanath & Ortega, 2013).

2.3.8 Campus critical incident planning

The Bureau of Justice Assistance (1994) found that it was difficult to avoid and prepare for critical events because they expanded their scope of concern to include unintended, deliberate, and criminal activity. Prevention can necessitate additional campus and community agencies or departments' involvement, depending on the issue at hand, namely “hazardous material spills versus fire risks in residential housing” (United States Department of Education, 2009).

In certain severe cases, the optimal solution can require others' aid, such as police, psychologists, and public relations experts. During the aftermath of the September 11, 2001 attacks and the Virginia Tech shooting in 2007 and the Northern Illinois shooting in 2008, there has been renewed interest in cooperation. Not only have there been calls for greater coordination between campus police and local crime prevention authorities, but others have indicated that campus mental health and crime prevention authorities need to work together to get to know the needs of students who are considered a threat to themselves and others (Blagojevich, 2008).

Research by the Royal College of Psychiatrists (2011) reported that universities disrupt students' mental well-being by relocating them to challenging circumstances. The campus climate may be too cool or personal for comfort (Roark, 1993). When teenagers can remain autonomous and young adults develop their autonomy, they often take risks. Aside from the deterioration of current psychiatric illnesses, these factors may also result in new mental health issues. Such issues can include thoughts of suicide, (Barrios, Everett, Simon & Brener, 2000) aggression towards others, or violent actions (Borum, 2000).

Studies have shown that several risky habits, such as alcohol consumption, binge drinking, substance use, weapon carrying, fighting, issuing threats, low academic performance, and trouble with criminal justice and campus authorities, are highly associated (Engs & Hanson, 1994; Fisher, Sloan, Cullen & Lu, 1998; Meilman, Presley & Cashin, 1997; Miller, Hemenway & Wechsler, 2002). It is recommended that universities use a range of approaches to classify 'high-risk' students for intervention and potential expulsion from campus (Fein, Plotnikoff, Wild & Spence, 2004; Fox & Savage, 2009); although this strategy has yet to be validated (Hoover & Lipka, 2008).

Efforts to address the epidemic of gun violence also require cooperation between educational, mental health and public safety officials. Although prevention is essential, being able to respond to and adapt to unexpected circumstances is important. A project on a significant event occurs after the effects of a shooting incident at a university in the 1990s. After the case, the researchers collected different forms of data from students, such as interviews, surveys, and discussions (Asmussen & Creswell, 1995).

The researchers considered the university's lack of a comprehensive plan to deal with such gun events to be "surprising, given the existence of formal written plans on-campus that addressed other emergencies": bomb attacks, chemical spills, fires, earthquakes, explosions, electrical storms, nuclear accidents, tornadoes, hazardous material spills, snowstorms, and various medical emergencies (Asmussen & Creswell, 1995:585). Police had response procedures, psychologists had a debriefing plan, and other campus departments had similar salient plans, but no formal incident response plan was in place.

These guidelines consider how schools should identify and handle students at high risk to participate in a potentially unsafe situation before real problems occur. A significant body of professional literature and training is devoted to how the campus should do the following: evaluate and develop their performance; cooperate with other respondents; prepare students, teachers and staff to recognise and report possible high-risk students and ensure consistency of command and control across the multitude of responding organisations. Attention has been paid to ways to mitigate the effects of disasters, as well as worst-case scenarios. While some of these recommended activities have been detailed by government studies, technical journals, media reports and training programs, there has been no study into how effectively these guidelines have been applied (Schafer, Heiple, Giblin & Burruss, 2010).

2.4 Legislative review

2.4.1 Regulations supporting the establishment of incident preparedness

Threats to safety and security come in many forms, ranging from deliberate violence to accidental injury. Violence and injury, at their most extreme, threaten life itself. This section provides a brief overview of key federal laws and policies that govern or affect

state emergency preparedness and response activities, internationally and in South Africa. This list does not contain all relevant or controlling federal authorities, but highlights items frequently queried by state health agencies regarding emergency authority and resilience issues (Association of State and Territorial Health Officials, 2012). Planning for natural disasters and an emergencies is something that every educational institution must consider, regardless of its size or location (International Finance Corporation, 2010). It is not possible to plan for every case that might occur; however, preparation is a key to saving lives if a disaster strikes.

2.4.2 Preparedness regulations worldwide

This section provides numerous regulations that are found worldwide in support or in connection to the state of preparedness in order to mitigate emergency incidents.

- ***The USA National Emergencies Act***

This act allows the president to declare a national emergency, which triggers emergency authorities contained in other federal statutes. This act does not contain any specific emergency authority on its own but relies on the emergency authorities in other statutes, such as the Public Health Service Act.

- ***The USA Public Readiness and Emergency Preparedness Act***

This act authorises “the HHS secretary to issue a declaration that provides immunity from tort liability for claims of loss caused by countermeasures against diseases or other threats of public health emergencies” (Association of State and Territorial Health Officials, 2012:2).

- ***The UK Civil Contingencies Act***

This act allows a stable level of civil protection activity across the UK. It ***i***s a system describing what tasks should be executed and how cooperation should be directed.

- ***(Asia)International Disaster Response Law***

The programme works with government and national society partners in the region to improve legal preparedness for disasters in Asian countries.

- ***Australian Disaster Preparedness Framework***

Authorises all capable parties to be effective and prepare for and manage severe catastrophic disasters.

2.4.3 Preparedness regulations in South Africa

This section provides numerous regulations that are found in South Africa in support or in connection to the state of preparedness in order to mitigate emergency incidents.

- ***The Disaster Management Act, Act 57 of 2002***

An integrated and coordinated disaster risk management policy that focuses on preventing or reducing the risk of disasters, mitigating the severity of disasters, preparedness, rapid and effective response to disasters, and post-disaster recovery.

The National Disaster Management Framework (NDMF**)** is the legal instrument specified by the Act to address the mission and vision of the DMA (2002) for consistency across multiple interest groups.

- ***National Disaster Management Framework of 2005***

The NDMF recognises a diversity of risks and disasters that occur in Southern Africa and gives priority to developmental measures that reduce the vulnerability of disaster-prone areas, communities and households. Also, in keeping with international best practices, the NDMF places explicit emphasis on the disaster risk reduction concepts of disaster prevention and mitigation as the core principles to guide disaster risk management in South Africa (UNDP, 1992).

The NDMF document has the following structure:

"*The national disaster management framework comprises four key performance areas (KPAs) and three supportive enablers required to achieve the objectives set out in the KPAs. The KPAs and enablers are informed by specified objectives and, as required by the Act, key performance indicators (KPIs) to guide and monitor progress. In addition, each KPA and enabler concludes with a list of guidelines that will be disseminated by the NDMC to support the implementation of the framework in all three spheres of government*" (South Africa, NDMF, 2005:2).

"*Key performance area 3 introduces disaster risk management planning and implementation to inform developmentally-oriented approaches, plans, programs and projects that reduce disaster risks*" (South Africa, NDMF, 2005:3).

Enabler 2 aims to address "disaster risk management priorities in education, training, public awareness and research". This implementation tool describes the mechanisms for developing education and training programmes for disaster risk management and related professions, as well as integrating relevant aspects of disaster risk management into the curricula of primary and secondary schools. It addresses the requirements for promoting and sustaining a broad culture of risk avoidance through public awareness and accountability. It also discusses priorities and mechanisms to support and develop a coherent and collaborative agenda for disaster risk research (South Africa, NDMF, 2005).

- ***National School Safety Framework***

This framework was created to serve as a management tool to define and manage hazards and threats of violence in and around schools for provincial and district officials responsible for school safety, principals, senior management team members, school governing body members, teachers and learners. This framework is crucial in giving all responsible bureaucrats the power to understand their duties on school safety (Centre for Justice and Crime Prevention, 2015).

- ***The Occupational Health and Safety Act, Act 85 of 1993 – general administrative regulations***

This act generally focuses on information that each employee must be informed of regarding hazards existing at the workplace and receive training on how to avoid those hazards. Employees also have a right to information about the health and safety laws applicable to the business. They must have the means to file a complaint with the government if it appears that the laws are being broken, on a confidential basis, and without fear of retaliation.

- **OHS safety regulations** – Regulations are made by government ministers, often following proposals from the Health and safety executive, and approved by Parliament. They broadly cover the general management of health and

safety at work, work processes, for example manual handling, use of display screen equipment, and specific standards.

- **OHS education facilities** – The Department of Basic Education takes school safety very seriously. The department has implemented many policies and initiatives to ensure the safety of all students, teachers and related stakeholders in schools. The Ministry reiterates that there is no room for crime, drug use or abuse, sexual assault and other illegal activities, as these constitute significant barriers to learning. In schools and societies, great emphasis is placed on the standard of teaching and morality and a just and loving community. Mediations centred on addressing physical foundation elements related to proper fencing, alarm systems and burglar proofing, youth resilience-building activities and improving collaborations with relevant stakeholders (South Africa, Department of Basic Education, 2019).

- ***Labour Relations Act, Act 66 of 1995***

The Assistant Secretary for Preparedness and Response (2016:6) "*recognizes that there is shared authority and accountability for the health care delivery system's readiness that rests with private organizations, government agencies, and Emergency Support Function-8 (ESF-8, Public Health and Medical Services) lead agencies. Given the many public and private entities that must come together to ensure community preparedness, HCCs [health care centers] serve an important communication and coordination role within their respective jurisdiction(s).*"

2.5 Conclusion

In conclusion, this chapter has clearly defined emergency preparedness as viewed by different researchers. The literature on emergency incidents on campuses has been identified and how it affects campus preparedness and perception of students and staff alike. Furthermore, the consequences that comes with the lack of emergency preparedness on campuses were also discussed in detail. In addition, the matter of unsafe campuses or violence on campuses has been recognised and significantly addressed and how that interconnect with the laws, regulations and policies established worldwide. The UFS has experienced emergencies just as many other universities and it is without doubt that the concept is multidisciplinary.

To summarise this concept of emergency preparedness, in a nutshell, would mean to address emergency management, which depends on the system of the four phases of emergency management: mitigation, preparedness, response, and also recovery. All stages are profoundly interconnected; that is, each phase impacts the other three phases. The all-in-all cycle is a continuous procedure, similar as the plan is a dynamic report that requires constant updating.

Chapter 3
Research Design and Methodology

3.1 Introduction

This chapter explains the type of method used to undertake this research. It provides facts regarding the strategy that was used for research and the reason behind why the particular method was used. Each footstep that was followed to carry out the research was discussed in this chapter, which includes the selection of respondents, the data collection process and how the data obtained was analysed. As introduced in the first chapter, the study aimed to investigate the state of emergency preparedness measures by the UFS through observational studies, as well as students' perception and knowledge of their campus security and as emergency procedures by using questionnaires. The study also included the information provided by the UFS about issues of emergency preparedness.

3.2 Research design

Rajasekar, Philominathan and Chinnathambi (2013) referred to research design as a methodical approach to address a problem in order to explain or predict a phenomenon. This section of the research stands out from the rest in a way that it is seen as a way from one point to the next in an attempt to answer and solve the problem. The main focus is to ensure that the work plan of the research is given on how the study should be conducted. Bergold and Thomas (2012) stated that the research design can be viewed as the master plan that provides logic to the structure of the study.

The research design is clear and present all the tools used to respond to the research questions. In this study, direction was used to define the appropriate (re)search method was by means of a research pyramid. The pyramid is made up of four action steps, namely: paradigms, methodology, designs and techniques. Moving from top to bottom, the pyramid leads to better understanding of the research questions. Furthermore, it allows the researcher's 'basic approach', which means it gives freedom

to ‘see from the eyes of the researcher’ and ‘see from the eyes of the next person’. Ultimately, this leads to a transparent and justifiable research design (Figure 3.1).

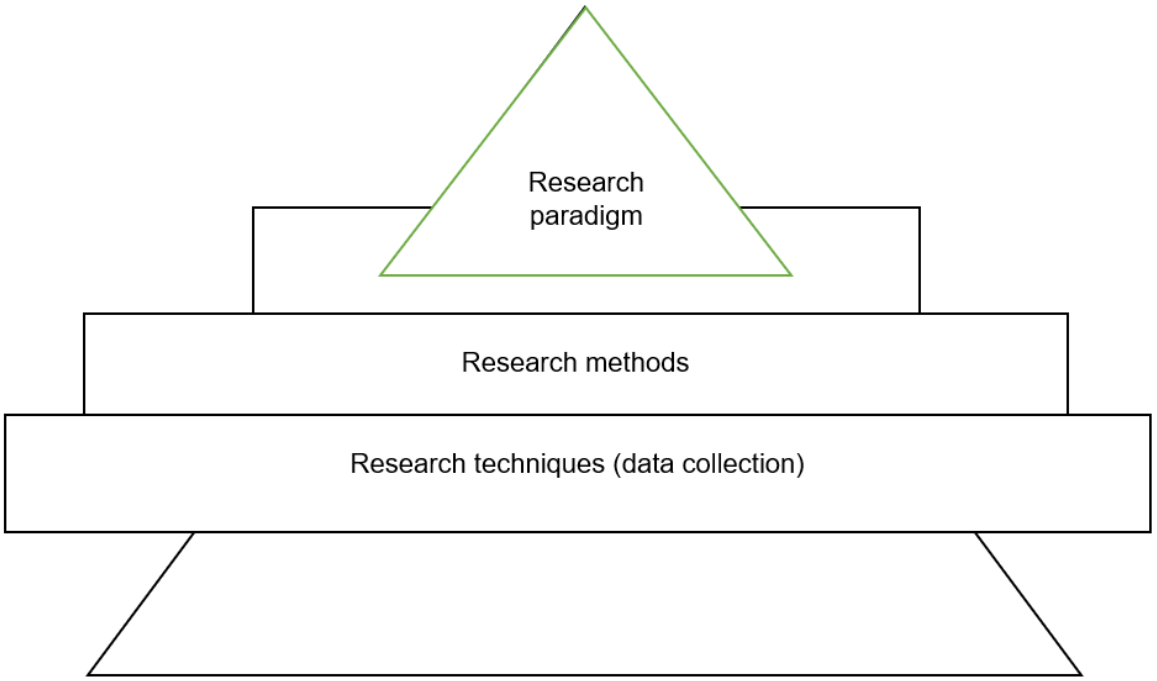

Figure 3.1 The research pyramid

Source: Jonker and Pennink (2010:23).

This study has employed a mixed method research, specifically an embedded design. The embedded design which is also known as the nested design can be described as the kind of study design in which at least one type of methodology is used inside the framework of another case study method (Plano Clark, Schumacher, West, Edrington, Dunn, Harzstark, Melisko, Rabow, Swift & Miskowski, 2013). Plano Clark et al. (2013) cited that embedded design can be found in various forms. A typical example would be embedding the quantitative method inside the qualitative case study. The purpose of using this type of mixed method is to allow researchers to make an inclusion of both their quantitative and qualitative data in a way that will answer questions within a largely quantitative or qualitative study (Gelo, Braakmann & Benetka, 2008:282). Moreover, this has allowed the researcher as a student at the UFS to include the partipants’ personal experience of emergency preparedness at the Bloemfontein Campus.

The following research questions were used as part of a guideline for the whole research:

- To what extent does the UFS proactively assess and prepare for possible risks that could affect its staff and students?
- Has the UFS done risk assessments in order to inform the development of its risk reduction, awareness and preparedness planning?
- Has the UFS informed its students on how to protect themselves from the possible risks for their continued safety?
- What prevention programmes are there to educate students about safety?
- What perceptions do students have regarding the emergency management strategies in place?

3.2.1 Research paradigm

Based on the type of questions in this research, the research paradigm which was effective was to combine 'positivism' and 'constructivism'.

- ***Positivism approach***

This is a belief that the scientific concept gives results that are useful. This means is a matter of diagnosis, design and solution to the problem. Furthermore, the researcher decides on the best method of assessment for a specific situation based on his knowledge. In other words, the solutions that are brought forth are scientifically justified by the researcher (Jonker & Pennink, 2010). This helps the researcher to limit restrictions when addressing the topic.

- ***Constructivism approach***

In the case of constructivism, everything is going on and changes at the same time, based on the characteristics, habits and rules of the group of people studied. The researcher allows room for the uniqueness of individuals to ensure that there is justice when coming up with a solution. This also allows the researcher to learn more about the people and see through their eyes (Jonker & Pennink, 2010) In other words, 'pragmatism' means the approach of putting focus on shared interpretations and joint actions.

3.3 Research methodology

Denzin and Lincoln (2007) defined research methodology as a system or methodology controlled by the idea of the research question and the subject being researched. It is a section that explains all the steps of the research and how research is to be completed. In addition, this is the manner which the researcher decides to take in order to approach the whole research, also bearing in mind the technique and resources necessary for data collection and data analysis (Morgan, 2007). Williams (2007) stated that the aim of any research method is to accommodate main research questions and ensures that all ethical views are addressed with a positive attitude in the end. According to Stark and Torrance (2005), most researchers prefer interviews, documentary analysis and the research methods of observational studies. This study has adopted a mixed method approach using an exploratory research design to investigate students' awareness on campus safety and emergency measures provided by the university. The study has made use of a checklist as part of an observational descriptive study for the UFS emergency preparedness (Bhattachejee, 2012).

The study has also gathered information to describe the perception of students on safety and security on campus by means of self-compiled questionnaires. The questionnaire was very efficient and well-constructed, which made the time required to code and analyse responses to be short, hence this type of questionnaire is widely used (Robson, 1993). The study had a set of interviews directed to the Dean of Student Affairs and OHS officer security staff at the UFS (Check & Schutt, 2012).

3.4 Quantitative method

Yilmaz (2013) referred to quantitative research as a segment in which numerical data is revealed by a phenomenon analysed using a mathematically based technique. Another concept by Payne and Payne (cited in Rahman, 2017) is that in other situations, quantitative methodologies take the lives of a certain group of individuals and pursue continuity by dividing the social environment into variables that can be addressed as numerical characteristics that can be inspected by quantifiable techniques concerning each other. Creswell (2014) 's perspective on quantitative research as a method for evaluating theories has a strong significance for quantitative research as it only requires variables to be tested. Yilmaz (2013) and Rahman (2017),

Creswell (2014) found that it is usually possible to analyse the examined aspects to ensure that numerical knowledge can be measurably dissected. Therefore, a claim would have the potential to be made that quantitative analysis focuses on the pieces of social values that can be analysed at a very basic level instead of only finding and deciphering their suggestions.

3.5 Qualitative method

Qualitative research is contrasted from other research strategies by the kind of results it produces. This type of research produces findings that are not from any statistical strategy or type of measurement (Yilmaz, 2013). Bricki and Green (2007) explained that qualitative research is subjective, which relates to the perception of explicit points of view associated with social life. This then implies that its strategies are generally based on words, observations and mappings to make a statement rather than numbers for data examination. Qualitative research with everything taken into account hopes to get what, how and why parts of the case, rather than its amount, occurred or existed (Bricki & Green, 2007).

Bhattacherjee (2012) stressed that data evaluation, such as content and coding themes, is qualitative research. He further showed that qualitative analysis depends on several factors, such as the explanatory and integrative abilities of the individual researcher and the researcher's level of expertise and experience on a particular subject. It can be argued that qualitative research emphasises comprehension instead of calculating or describing a phenomenon, taking into account the above argument. One important feature of qualitative research and qualitative researchers is that they need to communicate their own emotions and experiences to respondents.

3.6 Mixed/multiple methods

Mixed method analysis is a methodology that, in a single sample, incorporates qualitative and quantitative methods to gain a broad understanding of the topic studied. According to Johnson and Onwuegbuzie (2004), research on mixed methods is, therefore, a way of legitimising various methodologies in answering research questions. They further explained that it provides the researcher with more possibilities

because it is not limited. This makes it possible for the researcher to be versatile and combine techniques suitable for the research study's purpose.

3.6.1 Justification for using the mixed method approach

According to a study done by Sullivan (2011), using student populations should not be the only determining factor of the size of the institution and emergency issues of the institution. This implies that qualitative research alone does not divulge the fullest extent of issues faced, in this case at the UFS in this specific study of emergency preparedness. A survey done by Kapucu and Khosa (2013) for disaster preparedness and resilience at universities in the USA showed that to reach preparedness and resiliency of a university, many elements or variables are mixed together to get a solution. It was therefore useful to use statistics, interviews and observations to obtain a broad understanding of preparedness at the UFS. Kapucu and Khosa (2013:19) stated that each variable provides information that covers the important aspects or the bigger picture with respect to emergency information management.

3.6.2 Justification for using interviews

Potter (1996) interpreted interviews as a valuable method when a researcher performs qualitative research to obtain data. A one-on-one interview technique helps the researcher connect and connect with the respondents and observe non-verbal signals during the contact session. This study used an unstructured interview methodology to take an open and in-depth exploration of the research point into account. Denzin and Lincoln (2005) argued that unstructured interviews allow the researcher to recognise, without convincing any culture, the multifaceted essence of the circumstances.

From end to end, selecting interviews as a data collection strategy, the researcher will gain a deeper understanding of the respondents' developments through conversation and through the language they use to communicate. The interview process helps the scientist search for clarification and test for more informative comprehension. Therefore, the knowledge detailed and evaluated represents the opinions of the respondents. At the time of the study, the researcher himself was a student and understood and asked audience questions (Stanley & Wise, 1990).

As Clark et al. (2013) observed, there are many different types of embedded design within the qualitative case study or process, such as embedding the quantitative system. This section was part of the researcher's secondary data sources at the UFS Bloemfontein Campus from his own experience.

3.6.3 Justification for using an observational study

In this study of emergency preparedness at the UFS, the observations were seen as key means to compare and confirm what the leaders and students were saying about their campus. The observational study was done by check listing and taking photographs, which helped in finding the link and true reflection of what was being said by the respondents. This has also made the study more viable as the observations have provided tangible evidence about the state of the campus in the matters of safety, security as well as the state of preparedness at the UFS. Robson (1993) added that observation as a technique has an advantage because of its directness. It does not require view, feelings and attitude of people; everything is noted down in passing. Robson further stated that the directness of observational techniques complement questionnaires as much as interviews. Furthermore, this study used descriptive observation, which is commonly used to describe settings, people and events. Specifically, space, objects, events and time were the only four specific dimensions of descriptive observation applied in this study (Spradley, 1980).

3.7 Data collection

The following section discusses the data collection methods, sources of this data and the reason behind choosing those sources of data in particular. The study identified two main sources of data, namely primary and secondary data sources.

3.7.1 Data collection process

The data collection process took roughly eight days from 1–8 September 2019. Each day was set to accommodate students found on campus on different days of the week in order to make the study more viable, inclusive, and considerate of all people on campus, and also to meet the schedule of the interview scheduled with the Dean of Student Affairs and the OHS officer at the UFS. Everyday student assistants and the researcher handed out a given number of research questionnaires at specific areas

on the Bloemfontein Campus. Students were asked to fill in the questionnaires, although the main focus was third-year students as they have more experience about the campus; however, this data collecting process did not exclude data from other students, for example first- or second-year students. The observational study was also done by means of a checklist by ticking boxes and also taking photographs using a camera.

3.7.2 Primary source of data

The primary source of data was the students of the UFS Bloemfontein Campus. This data was collected using questionnaires at the Bloemfontein Campus. According to Flower (cited in Creswell, 2014), this type of research can be quantified to provide trends, opinions or attitudes through studying a sample of the population of interest. The primary data was also formed by interviews using the main questions of the research directed to the Dean of Student Affairs and the OHS officer at the UFS.

Lewin (2005) confirmed that questionnaires are a basic tool in order to collect either structured or unstructured data from respondents for a structured interview. The questionnaires contained three basic types of questions as stated by Singh (2007), namely open-ended, close-ended as well as multiple response questions. Lewin (2005) argued that questions that are highly structured closed ended questions only accommodate surveys with a very large number of respondents because it will be convenient for collection and analysis that use statistical techniques for comparisons.

The following qualities were demonstrated in the questionnaires as cited by Lewin (2005):

- Strong and unambiguous and not using specialised language or language that is unsuitable for respondents.
- Not leading respondents to specific answers.
- Straightforward instead of complex.
- Avoiding the utilisation of negatives and twofold negatives.
- Ensuring that in various decision-based questions and evaluation scales, all classifications are considered and are totally unrelated (if a solitary reaction is required).

- Avoiding asking too many questions at the same time, for instance: Do you own a stereo or HI-FI? Should the respondent answer ‘yes’, how would you know whether they own a stereo or HI-FI or both?
- Avoiding questions that may alienate or irritate respondents or could be seen to compromise respondents.

The questionnaire used in this study was planned in accordance with the researcher’s main and subsidiary research questions. Observing the power of closed-ended questions was seen in their capacity to get relatively large information in a short space of time (Lewin 2005). That was the reason behind many closed-ended questions in the questionnaire of this study. However, the inclusion of some open-ended questions allowed the respondents to give what they are inclined to and still complete the research in time.

3.7.3 Secondary sources of data

Journal articles, newspaper articles, general observations, theses and dissertations have formed part of secondary sources of this study. The secondary data formed the basis for the construction of the checklist and the questionnaires and informed the interview questions, such as safety measures put in place for students in case of an emergency. Moreover, this also gave light to the security measures within the premises of the campus and all resiliency and culture of preparedness implemented by the UFS.

As Clark et al. (2013) noted, there are many different forms of embedded design such as the embedding of the quantitative method inside the qualitative case study or framework. This part has formed part of the secondary sources of data provided by the researcher from his own personal experience at the UFS Bloemfontein Campus.

3.8 Validity of the data collection instruments

Validity, as indicated by De Vos et al. (2011), alludes to honesty, exactness, validness, genuineness, and sufficiency as equivalents for validity, and stresses the way that these terms depict what validity refers to, that the test or instrument you are utilising really quantifies what you need to have estimated. In basic terms, validity is concerned about whether the study is trustworthy and valid and whether it is assessing what it

should assess. The list in the discussion below was utilised to approve the instruments and the information for this research.

3.8.1 Content validity

This is the sort of validity wherein various aptitudes, practices, and components are sufficiently and viably estimated (Zohrabi 2013). The study instruments and the information are looked into by the research experts in the field, and indistinct and unclear questions can be amended or revised. Furthermore, questions that are incapable and unnecessary are removed.

3.8.2 Internal validity

Internal validity refers to what the researcher observes as important and should or should not be measured (Zohrabi, 2013). To strengthen the internal validity of the research instruments and the information, the researcher as per Merriam (1998) in Zohrabi (2013:258), may apply six techniques, namely triangulation, individual checks, observing sites for longer periods, peer assessment, participatory or synergistic methods of analyst's bias. To fortify the legitimacy of assessment information and discoveries, for this study the analyst gathered information through a few sources, namely interviews, questionnaires, and observational studies at the UFS campus. In other words, when the researcher gathers information through one technique, it very well may be viewed as weak, bias or even questionable investigation, unlike when a researcher gathers data using different methods and from different sources that can confirm findings (Zohrabi, 2013).

3.8.3 External validity

External validity refers to the materialness of the findings of the research in different settings or with different subjects (Zohrabi, 2013). In other words, it is how much the conclusion of the research is perceived and understood by different people in different areas and on different occasions.

3.9 Reliability of the data collection instruments

Reliability, according to De Vos et al. (2011) happens when an instrument quantifies something very similar more than once and the result is consistently coming out the

same. Something dependable will act in the future as it did before. The following are ways to increase the reliability of instrument measures (De Vos et al., 2011):

- Use at least two pointers, for instance utilising at least two inquiries in a questionnaire to measure each aspect of a variable.
- Increase the level of estimation since indicators at higher or more exact levels of estimation are bound to be solid than less exact measures.
- Moderate the level of difficulty of the instrument in light of the fact that any test that is too troublesome or too simple does not mirror an exact image of the presentation.
- The more solid a specialist's instruments and observations, the steadier and more reliable the researcher's results will be. The connection between reliability and validity is consequently clear, an instrument can be solid, however not valid, but rather an instrument cannot be valid without first being reliable.

3.10 Sampling

Singh (2007) defined sampling as a process of identifying a preferable sample, from a large population studied as a representative of that population sample. Alternatively, a sample is a small portion of the population or rather the object which is investigated (De Vos et al., 2011). The major reason for using sampling is feasibility. To elaborate, it would be ideal to use the entire population or objects being studied in a perfect world, but time and costs normally prohibits such undertakings.

3.10.1 Sample size

A sample is a helpful smaller variant when working on a larger group for population. The larger the population, the smaller the sample percentage expected for that population. De Vos et al. (2011) stated that larger samples provide more accuracy and better represent assumptions and provide better predictions than smaller samples. The relative diversity of the population at the UFS and the reliability of the respondents in this study have influenced the chosen sample size. The sample size was determined as follows:

- ***Population size***

The UFS population size was estimated to be at **41 000**, although this is only important to calculate if the sample size is greater than 5%. The UFS Bloemfontein Campus has an estimate of **29 000** students.

- ***Margin of error (MOE)***

The margin of error refers to the required level of precision. To elaborate, it is the percentage points the results of the study will differ from the real population value. Seaberg (1988) and Grinnell and Williams (1990), as cited in De Vos et al. (2011), stated that in most cases, a 10% sample error should be sufficient. The study made use of an 11% MOE.

- ***Confidence level***

The confidence level refers to the level probability that the MOE contains the true proportion. Since the study is not entirely new and has been repeated in different places worldwide, the confidence level true value was expected to lie within the ranges on 95% of occasions.

- ***Sample proportion***

This refers to what the expected results would be as far as the research is concerned at the UFS. This was based on previous literature and results from similar disaster preparedness surveys at universities. However, university institutions differ, and it was fair to use 50% because it is conservative and allows room for a larger sample size. The following formula for the sample size *n* was used to determine the sample size:

$$n = N*X / (X + N - 1), \text{ where } X = Z_{\alpha/2}^2 *p*(1-p) / MOE^2$$

where:

n = sample size of 80

MOE = 11% margin of error

N = 29 000 population size

X = Zα/2 is the critical value of the NORMAL distribution (looking at the Z-score confidence level of 95% means (α=0.05)

P = sample proportion

The study made use of a sample size of 80 respondents, which fulfilled two needs, which are thoroughness and precision. The level to which the sampling was framed to include the whole population gave thoroughness, while the level to which the sampling frame incorporates correct information about the targeted population gave precision (Currivan, 2011).

3.10.2 Random sampling technique

Kerlinger (1986), cited in De Vos et al. (2011), briefly stated that random sampling is the technique of drawing a portion of the population in a way that each individual of the population has a fair chance of being part of the respondents in a study. The researcher designed a sampling outline following steps used to draw a random sample so that a random sample could be generated (Singh, 2007:88). These steps ranged from identifying the research population, assigning numbers to individuals in the population, sample sizing and size of the population at the UFS campus.

3.10.3 Probability sampling

In random sampling there are two major groups of sampling methods. First, probability sampling is grounded on randomisation, while non-probability sampling is not on randomisation (Singh, 2007). The study used probability sampling because each student at the UFS had the same known probability of being selected to participate. However, probability sampling has a few kinds of sampling; the study made use of a stratified random sampling. This probability sampling kind was best suited to apply at the UFS because the Bloemfontein Campus is a diverse environment with a mixed population and small subgroups that ought to be included percentage wise. Furthermore, samples were divided into a number of strata which are mutually exclusive, and respondents that were found to have similar features such as gender, year of study and residence in terms of on- and off-campus, were then grouped and coded per questionnaire (De Vos et al., 2011).

3.10.4 Non-probability sampling

As indicated by De Vos et al. (211) and Singh (2007), unlike probability sampling, non-probability sampling does not work on randomisation because the researcher does not know the population size or the respondents. Hence, it was not picked as a sampling

method to assess incident preparedness at the UFS. However, quota sampling was used in this study; although it is a kind of non-probability major group, it was relevant for the UFS campus. Quota sampling is used to provide a sample that is likely to be similar to the population as possible. The categories that were commonly used were gender, academic year, or on-/off-campus residence as seen in the nature of arrangements of the questionnaires (De Vos et al., 2011).

This explains the manner in which the relationship between gender and the research questions was used when data was analysed in this study (Robson, 1993). To elaborate, quota sampling and stratified random sampling were chosen together because they link in a sense that quota sampling provides a sample similar to the original population and incorporate the diversity of the campus rather than a strict random sampling, while stratified random sampling provides strata that helps put the similarities of the original population in sections. In other words, this link allows the concept of positivism to be applied as the path of data analysis is combined to provide or explain the best method of assessment for assessing emergency preparedness at the UFS campus.

3.11 Data analysis

Data analysis refers to the interpretation of raw data in order to get results that are useful and are able to make sense of the whole study. First, all questionnaires were collected and captured into Microsoft Excel, which was then used to create a pivot table which summarised the data packaged in charts and tables. Qualitative analysis involved (1) the responses from students and (2) the interviews with university officials, which were critically analysed in order to achieve the research aim and objectives, while quantitative analysis used the graphs constructed from pivot charts via Excel in order to attempt finding the rationale behind the emergence of the main findings.

The qualitative data was collected and grouped according to their characteristics. To elaborate, the responses that had similar characteristics were combined and discussed with respect to the literature review and research questions. Each response was analysed and explained given its uniqueness to the rest of the responses. The observed data was clearly demonstrated by a checklist and figures which were

described in detail to link and compare direct data from both the interview and questionnaires.

3.12 Ethical consideration

Ethics are an important aspect of each study as they refer to the respect of morals and values of respondents during conducting the study. To ensure that this aspect was covered, the following principles were employed for conducting the research:

- ✓ ***Voluntary participation:*** Every potential respondent was asked for their permission to participate in the research and those who were not interested were excused.
- ➢ ***Informed consent:*** A disclaimer informing respondents of their choice to not answer certain questions if they wished to do so was put in a questionnaire.
- ➢ ***Violation of privacy/anonymity/confidentiality:*** The names of respondents were not mentioned in the study as they were not asked to write them down anywhere on the questionnaire, thus protecting their anonymity.
- ✓ ***Deception of subjects and/or respondents:*** The respondents answered all questions on their own and no response was somehow influenced by the researcher.

3.13 Conclusion

This chapter discussed the research methodology used in the undertaking of this research. The focal point of this section was on the procedures that the researcher followed in leading this study. The chapter discussed the research pyramid as the master plan that gave details about the research design, addressing the population, tools for data collection and sampling procedures. To achieve reliable and unwavering quality of results, there were measures that were adhered to. Last, the ethical concerns which might have prevented the research were also discussed.

Chapter 4
Data Presentation and Analysis

4.1 Introduction

This chapter presents the research findings in order to evaluate the state of incident and/or emergency preparedness at the UFS Bloemfontein Campus. The preservation of well-being and security keeps on being an ever-expanding challenge in this present reality where acts of savagery are getting more random and capricious, leading to serious emergency incidents. The description and significance of the findings are discussed with the literature review in cognisance. This chapter also addresses, through findings, how the OHS Act (1993), as well as the DMA (2002) regulations are being heeded to at the UFS.

To achieve the objectives of the study, the research analysis and findings focused mainly on respondents' replies and observational study. In addition, questionnaire findings, interview findings and observation findings were compared and ultimately discussed in detail. The surveys were delivered in paper format to the students at the UFS Bloemfontein Campus at different places and time. The Bloemfontein Campus had a total of 29 000 students and from this population, only a total sample of 80 respondents took part in the study. These numbers resulted in a response rate of 100%. Although, three (3.75%) of those students did not fully complete the survey.

4.2 Data analysis and interpretations

For this investigation, composite tables and diagrams were utilised. The aggregates and rates were utilised to respond to the exploration question. The best and most negative reactions were additionally examined. The questionnaire analysis was grouped into categories to measure the different aspects that could be used to assess the state of emergency incidents at the UFS through the eyes of the respondents. The research addressed the main research question as stated in Chapter 1 of this study, while applying the concept of constructivism as indicated by Jonker and Pennink (2010) stating that the researcher ought to find the best method of analysis and also see through the eyes of the respondents. Interviews and observational study were also

analysed with respect to the positivism approach. All three methods used to collect data for the mixed method approach are analysed in detail below, starting with the demographics of the population studied and providing closing arguments to show the link with the research questions.

4.3 Demographic information of the students

The demographic profile of the respondents is concerned with data of the respondents as far as gender, age, academic year, faculty, and nature of the living arrangements. This data was utilised to decide if the outcomes were impacted by the respondents' biographical data. The data is represented in the diagrams and tables below.

4.3.1 Gender

In the first question of the survey, the respondents needed to indicate their gender. As per Figure 4.1, there were more female respondents in the survey with a total of 46 than male respondents with a total of 33 that completed the survey.

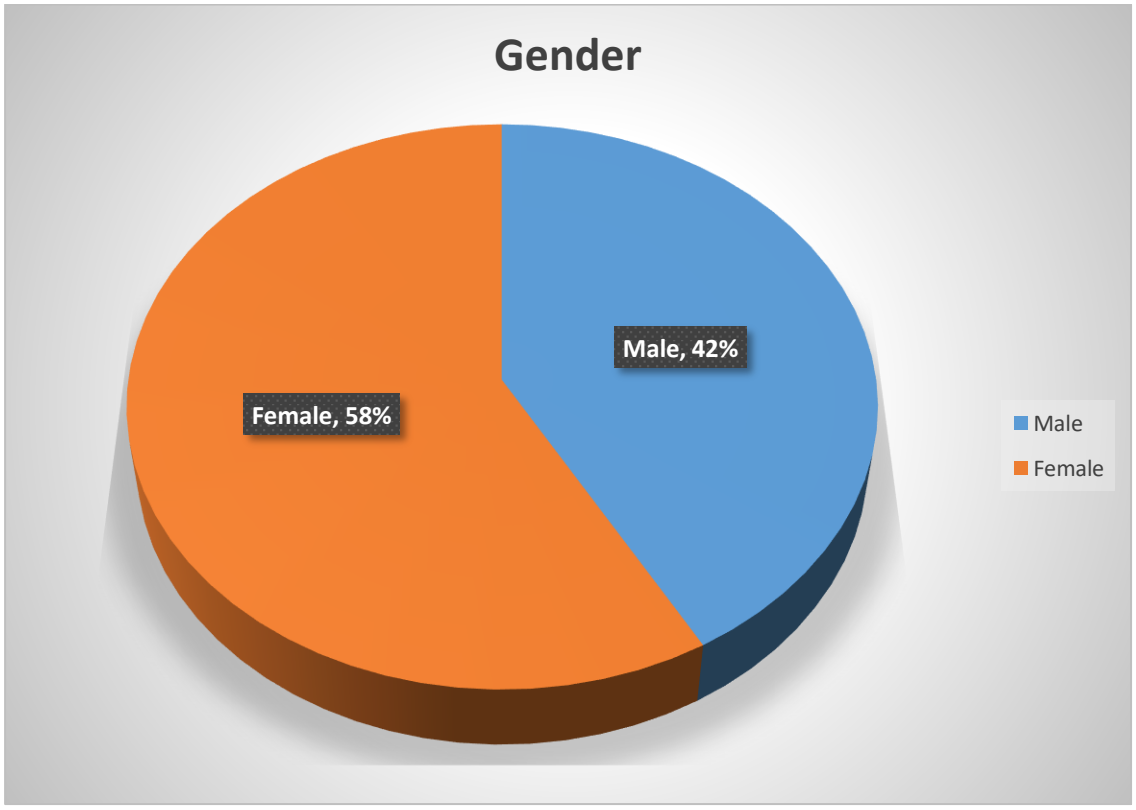

Figure 4.1 Gender of students who participated in the study

Source: Author's own (2020).

As indicated by the UNDP (2003), “gender determines what is normal, permitted and esteemed in a lady or a man in the given setting”. Gender also gives light to types of opportunities, duties, and assets related to being male or female. The consolidated impact of these distinctions implies that men and young boys and ladies and young girls are exposed to a certain level of vulnerability to emergency incidents and their capacity to recuperate them.

4.3.2 Age

Figure 4.2 shows the age distribution of the respondents in the study. Of the 80 students surveyed, the majority were between the ages of 21 and 25 years (54%). This was highly expected since the respondents are all university students. Very few students were above 30 years of age (3.4%), while the 17 to 20 years constituted 13.16%.

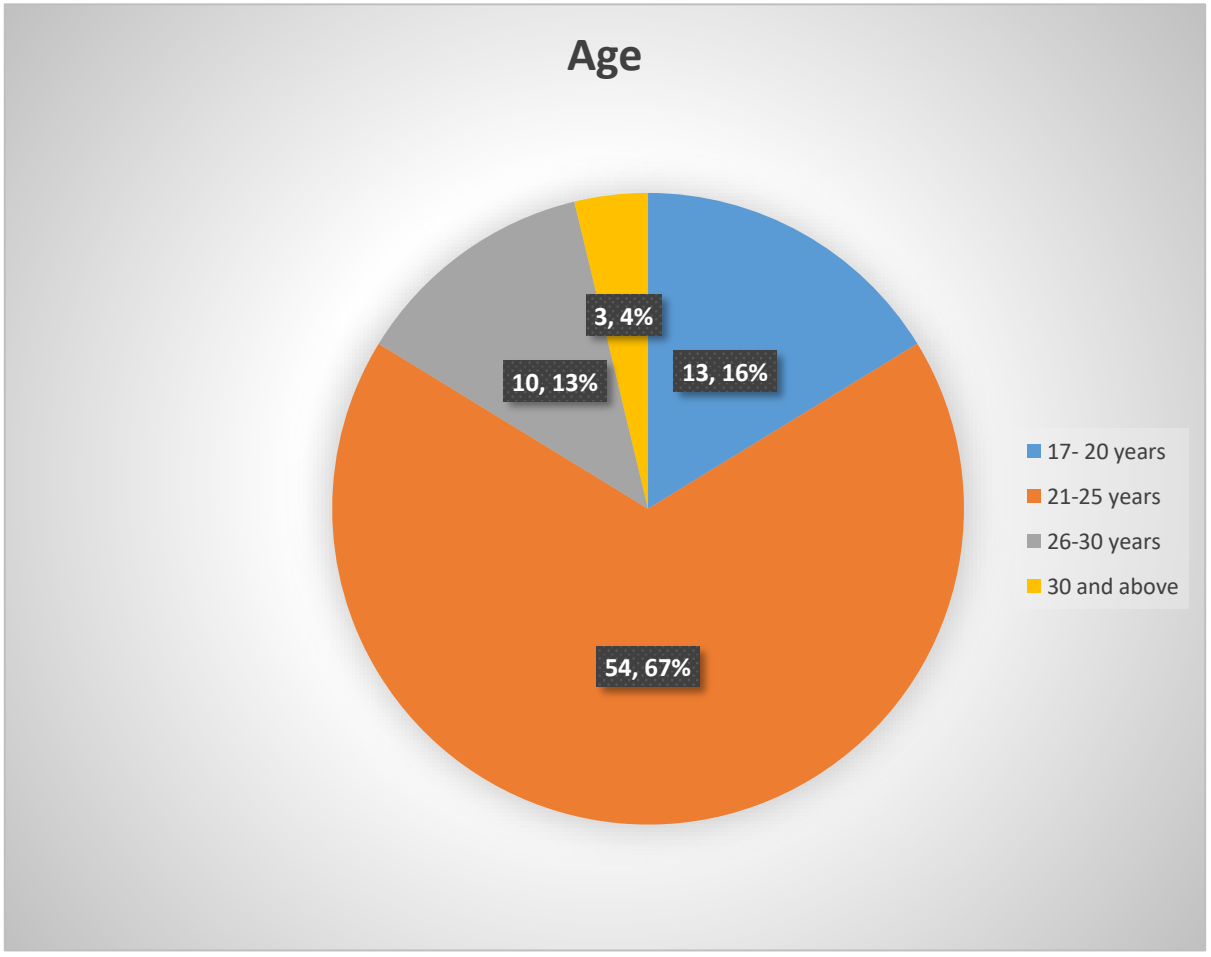

Figure 4.2 Age distribution of students who participated in the study

Source: Author’s own (2020).

4.3.3 Faculty

Table 4.1 represents the faculties at the UFS campus. Natural and Agricultural Sciences had the highest number of respondents (38,8%). The reason for this may be that the faculty offers many courses, and a high number of students was enrolled in that faculty. Health sciences had the lowest number of respondents (6,3%); the reason for this might be that many students at Health Sciences are normally at their own departments and at the residences and very busy, with little time to walk around the campus. It is without surprise that the Faculty of Humanities had the second highest number of respondents (17,5%) and this may be due to the random sample taken around the campus of which there are a lot of Humanities students from residences or lecture halls. Economic and Management Sciences constituted (11,3%), while Education constituted (13.8%), being the medium of the faculties.

Table 4.1 Number of students per faculty at the University of the Free State

Faculty	Number	Percentage
Economic and Management Sciences	9	11,3
Education	11	13,8
Health Sciences	5	6,3
Humanities	14	17,5
Law	10	12,5
Natural and Agricultural Sciences	31	38.8
Total	**80**	**100**

Source: Author's own (2020).

4.3.4 Academic year

Table 4.2 shows the respondents' academic year distribution at the university. Year 1 and Year 2 ranged high with 20% and 25%, respectively, which comes with no surprise as they have more classes to attend on campus. However, Year 3 and Year 5 both constituted the second highest percentage of 22,5% of the sample respondents. The results are not surprising for Year 3 of study because most courses are completed in three years at the UFS and students may have classes to attend. However, for academic Year 5, many students are usually done with their studies and have obtained their degrees and thus it is unusual to see such a high percentage because the majority of the students are likely doing their honours or master's degree. Year 6 (doctorate)

had the lowest number of respondents of 2,5%, and this may be due to the fact that the majority of the students at this year level of study do not necessarily attend classes and as a result do not move around on campus, compared to the first three years of study.

Table 4.2 Number of students per academic year

Academic year	Number	Percentage
Year 1	16	20,0
Year 2	20	25,0
Year 3	18	22,5
Year 4	6	7,5
Year (postgraduate)	18	22,5
Year 6	2	2,5
Total	**80**	**100,0**

Source: Author's own (2020).

4.3.5 Residence

Table 4.3 represents a number of students that resides on- and off-campus. The table indicates that 51,2% of the respondents in the study were residing off-campus, while 48,7% were residing on-campus. This can imply that many students that stay on campus have the luxury of going back to their rooms on campus to refresh and take a nap, while the off-campus students remain all around campus waiting for their next class.

Table 4.3 Residence

Residence	Number	Percentage
Off-campus	41	51,2
On-campus	39	48,7
Total	**80**	**99,9**

Source: Author's own (2020).

4.4 Responses to the research Interview with the Dean of Student Affairs and the occupational health and safety officer

- ***Question 1: To what extent does the University of the Free State proactively assess and prepare for possible risks that could affect its staff and students?***

The UFS has different mechanisms, but for this specific matter there is a risk registrar. The purpose of the risk register is to assess different risks that exist within a distinct environment. This allows the risk to be managed according to the level of harm it poses to the community of the UFS, for instance it could be at a level of department, faculty or the whole university. This is all coordinated under the deputy registrar risk and compliance of the UFS.

- ***Question 2: Does the University of the Free State have an active risk and safety committee in place that is fully functional to inform the institution about its risk reduction, awareness and preparedness planning?***

There is a council and risk committee which sits approximately four times a year to check the possible risks posed by an event and make decisions upon that risk and try and mitigate the risk. However, the risk committee appoints representatives in each department to inform them of the possible risks they may face as each department is unique.

- ***Question 3: Has the University of the Free State done risk assessments in order to inform the development of its risk reduction, awareness and preparedness planning?***

The UFS take note of all the risks in terms of their level of disaster risk from high, medium or low risks. Ultimately, the main idea is to push for low risk and during each quarter of the year the risk must be lowered from what it used to be. For instance, part of the high-risk problem at the UFS was that the students were not attending or engaging in safety measures, and the response was to form faculty councils, and engage at faculty level and as a result, the risk was lowered. However, the dean argued that in terms of the students it is quite difficult to get them aware because they are simply not interested in knowing about issues they ought to be prepared for in case of an emergency. Furthermore, he argued that the same method used to invite

students to emergency risk meetings is the same one used to invite students to fun events and the results are totally different.

- ***Question 4: Has the University of the Free State informed its students on how to protect themselves from the possible risks for their continued safety?***

There was a *Safety Week* but students did not come, and also the *Be Safe* campaign. The dean argued that safety is a personal responsibility and students are being taught and given resources, but they are not interested. Furthermore, he stated that the issue of safety is more of a lifestyle.

- ***Question 5: What prevention programmes are there to educate students about safety?***

The first step in prevention according to the Dean is that students are advised to contact the protection services which are always available on the campus twenty-four seven in a case where they feel they feel threatened. There are also emergency numbers at the back of each student and staff access card, which allows easy access to get hold of the protection services in case of any safety matter. In addition, there are a number of campaigns such as the *Next Chapter* which mitigates emergency cases by speaking to the students about the importance of their mental health, and also campaigns such as the *Be safe* which teaches students how to protect themselves and avoid making themselves victims in any life-threatening situations such as a fire in a building. However, it can be argued that the *Besafe* and the *Next Chapter* campaigns may prove to be the most effective with regard to curbing safety issues at the UFS Bloemfontein Campus.

- ***Question 7: What type of training does the disciplinary board and safety committee from the university receive about how to conduct any investigation?***

Meetings are held monthly with staff members; within those meetings information is provided to the OHS representatives of each building at the university. There are dates provided by the university to those staff members for practical drill training. According to the DMA (2002), it is required that emergency evacuation plans are done twice a year.

4.5 Research questionnaires assessing student *preparedness*

4.5.1 Students who have participated in emergency drills

Table 4.4 indicates the level of preparedness of students in case of an emergency by assessing whether they have participated in any emergency drill on campus.

Table 4.4 Participation in emergency drills

Responses	Gender		Residence		Academic year					
	Male	Female	On-campus	Off-campus	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Strongly disagree	24	26	25	25	11	9	16	4	9	1
Disagree	3	12	5	10	4	7	0	1	3	0
Neutral	2	1	1	2	0	1	1	0	0	1
Agree	0	6	3	3	0	1	1	0	4	0
Strongly agree	4	2	5	1	1	2	0	1	2	0
Total	80		80		80					

Source: Author's own (2020).

Table 4.4 shows that 24 (30%) male and 26 (32.5%) female respondents strongly disagreed respectively, and 3 (3.75%) male and 12 (15%) respectively disagree with ever taking part in drills. It also shows that out of 80 respondents, 50 (62.5%) students in the overall academic years at the UFS have not participated in any emergency drills. Although 4(5%) males and 2 (2.5%) females strongly agreed that they have participated in drills on campus, it is important to note that out of 6 respondents, 5 students were staying on campus. The probable cause of this overall results at the UFS may be lack of knowledge of these activities by students or perhaps lack of interest.

4.5.2 Students claiming to know the names of streets and buildings on campus

Figure 4.3 represents the number of students who are familiar with the names of the streets and buildings on campus.

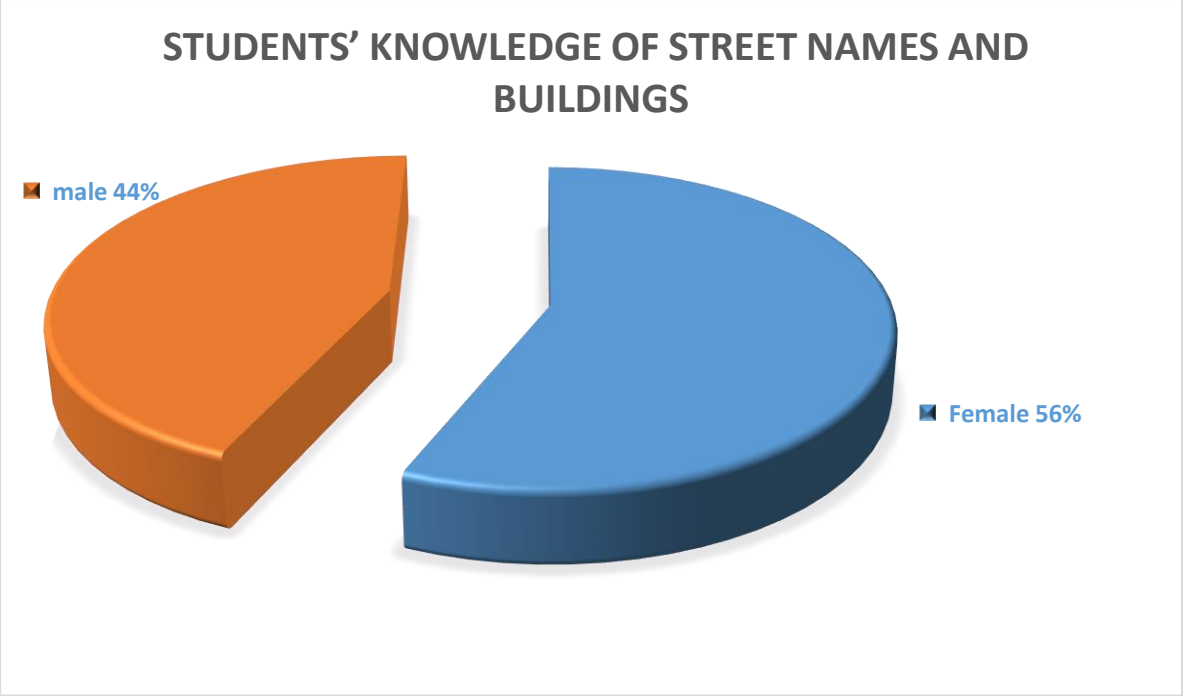

Figure 4.3 Students knowing the names of streets and buildings on campus

Source: Author's own (2020).

Figure 4.3 shows that 45 (56%) of female students were knowledgeable about their surroundings. This could be due to their eagerness to attend classes and therefore may well have been acquainted with the building names and directions (Smith, 2006), while only 35 (44%) of the male students seemed to show interest about their area. This may be due to most males being less interested in attending classes, which results in them being less acquainted with the navigation of the campus, as long-term memory is not set in stone (Cherry, 2020). Furthermore, it is due to this reason that females statistically get more marks as opposed to their male counterparts (Hassan & Hassan, 2016). This is important concerning preparedness and safety with regard to navigation during an incident.

4.5.3 Students that know what is expected of them in emergency situations

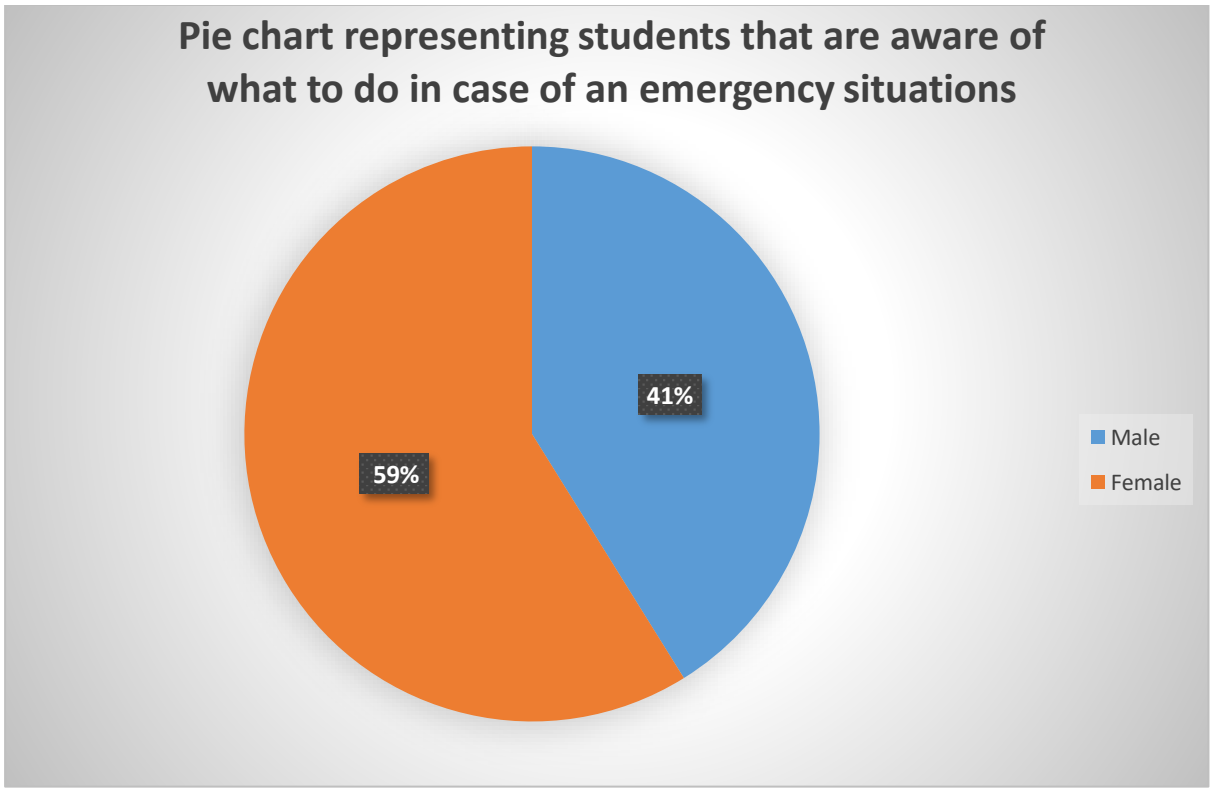

Figure 4.4 Students knowing what is expected of them in emergency situations

Source: Author's own (2020).

Figure 4.4 shows that 47 (59%) of the females knew what was expected of them in case of an emergency incident, while only 33 (41%) of the males were knowledgeable about the actions to take during an emergency. It is not surprising that more female than male students were aware about what was expected of them during an emergency. This is because, in South Africa, females are more cautious about safety than males due to gender-based violence issues they experience. To support the above statement, a shocking, inhumane, and gruesome incident was that of uYinene Mrwetyana, a student at the University of Cape Town who was raped and brutality murdered in 2019 by a former Post office worker (Adebayo, 2019).

4.5.4 Students that know who to call during health emergency situations

Table 4.5 Knowing who to call during health emergency situations

Gender	Number	Percentage
Male	30	37,5
Female	50	62,5
Total	**80**	**100,0**

Source: Author's own (2020).

Table 4.5 above shows that 50 (62.5%) female students knew who to call in case of an emergency, while only 30 (37.5%) of their male counterparts knew who to call in case they find themselves in health-threatening emergency situation. This shows the carelessness of the male students when it comes to safety matters and this can be due to many reasons such as class attendance (Kaufman, Derazin, Asmar & Kibble, 2018).

4.6 Research questionnaires assessing student perceptions

4.6.1 Assessing lecture rooms, toilets, laboratories, study logs and library safety

Table 4.6 shows that 44 (55%) and 6 (8%) of the students, respectively, agreed and strongly agreed that the lecture rooms, bathrooms, laboratories, study areas and library areas are safe. Interestingly, none of the male students disagreed or strongly disagreed with this statement, while 10 (13%) of the females argued that these places are completely unsafe in particular the unisex bathrooms. This could be due to a number of reasons such as not being familiar with these places or not aware of the safety precautions put in these places. Moreover, some students, particularly postgraduates, do not really use the facilities on campus that much. Therefore, they would not be familiar with the safety precautions that exist in some of these facilities (Postgrad.com, 2020a). Studies also showed that time spent on attending classes at the university campus is very minimal for postgraduates as opposed to graduates (Postgrad.com, 2020b).

Table 4.6 Safety of lecture halls, restrooms, study areas and library

Responses	Males		Females	
	Number	Percentage	Number	Percentage
Strongly disagree	0	0,0	4	5,0
Disagree	0	0,0	6	7,5
Neutral	6	7,5	14	17,5
Agree	23	28,75	21	26,25
Strongly agree	3	3,75	3	3,75
Total	**32**	**40,0**	**48**	**60,0**

Source: Author's own (2020).

4.6.2 Security personnel always willing to help provide prompt assistance

Table 4.7 Security staff willing to help

Responses	Number	Percentage
Strongly disagree	3	3,75
Disagree	9	11,25
Neutral	29	36,25
Agree	31	38,75
Strongly agree	8	10,0
Total	**80**	**100,0**

Source: Author's own (2020).

Table 4.7 shows that 31 (38.75%) of the students agreed and eight (10%) strongly agreed with the statement that the security personnel are always willing to provide prompt assistance. The reason for this could be that the security personnel are trained and as a result it is mandatory for them to always be willing to assist the students at all times (UFS Protection Services, 2020).

On the other hand, nine (11.25%) of the students disagreed and three (3.75%) strongly disagreed with the fact that the security personnel are willing to assist. This could be a few students who might have had a bad personal encounter with the security personnel at which they were not helped.

4.6.3 Communication: Information regarding a pending security situation on campus is easily available

Table 4.8 Information regarding security situations being readily available

Responses	Number	Percentage
Strongly disagree	12	15,0
Disagree	17	21,25
Neutral	23	28,75
Agree	26	32,5
Strongly agree	2	2,5
Total	**80**	**100,0**

Source: Author's own (2020)

The overall impression as per Table 4.8 indicates that 26 (32.5%) of the students agreed and two (2.5%) strongly agreed that communication is available regarding eminent security situations. However, 17 (21.25%) disagreed and 12 (15%) strongly disagreed that information and communication is readily available.

4.6.4 It is always easy to report emergency situations on-campus

Table 4.9 It is always easy to report emergency situations on-campus

Responses	Males		Females	
	Number	Percentage	Number	Percentage
Strongly disagree	1	1,25	0	0
Disagree	2	2,5	9	11,25
Neutral	17	21,25	10	12,5
Agree	10	12,5	24	30,0
Strongly agree	3	3,75	4	5,0
Total	**33**	**41.25**	**47**	**58,75**

Source: Author's own (2020).

Table 4.9 shows that 34 (42.5%) agreed and 7 (8.75%) strongly agreed that it is easy to report emergency incidents on campus. Although, 24 out of 34 were females agreeing with this statement. On the other hand, 11(13.5%) disagreed and one (1.25%) strongly disagreed with this statement. Interestingly, none of the females

strongly disagreed that it is difficult to report incidents on campus, although 9 (11.25%) disagreed with the statement.

4.7 Observational study at the University of the Free State

4.7.1 Preparedness observational checklist

This section aimed to identify all measures put in place by the UFS at the Bloemfontein Campus. The study made use of a checklist as shown in Appendix 3, to identify and compare what is being said by the UFS staff and students. This provided a different view of the way the students and staff may view the state of preparedness at the campus. The tables below represent the view of different areas at the UFS from the observer's viewpoint as opposed to what the students or the staff perceived or argue.

Table 4.10 Safety on campus by area

Buildings	Very unsafe	Unsafe	Neutral	Safe	Very safe
Faculty block			X		
New education			X		
Library				X	
Callie Human building				X	
Student Centre				X	
Laundry rooms				X	
EBW Auditorium			X		
Student leisure areas				X	
Kovsie Health			X		
Main building			X		
Administration building				X	
Car parking			X		
Computer labs				X	

Source: Author's own (2020).

Table 4.11 Factors positively influencing emergency preparedness on campus

Factors	Very unsafe	Unsafe	Neutral	Safe	Very safe
Visible security				X	
Security patrols				X	
Sufficient lighting				X	
Emergency phones			X		
Availability of CCTV				X	
Better paved footpaths				X	
Cleared bushes				X	
Community assembly points			X		
Panic buttons			X		

Source: Author's own (2020).

Table 4.12 Safety on campus by period of the day

Factors	Very unsafe	Unsafe	Neutral	Safe	Very safe
Morning: 06:00–12:00				X	
Afternoon: 12:00–16:00					X
Evening: 16:00–21:00				X	
Midnight: 21:00–06:00				X	

Source: Author's own (2020).

Table 4.13 Checklist for emergency in lecture halls, buildings, campus area and laboratories

Buildings	Very unsafe	Unsafe	Neutral	Safe	Very safe
Security offices				X	
Panic buttons				X	
Emergency exits in lecture halls and student residences				X	
First aid kit at the Chemistry labs and residents					X
Fire extinguishers in lecture halls, student residents and campus buildings				X	
Emergency exits on campus				X	
Assembly points				X	
Disaster management plans			X		
Humps and pedestrian crossings				X	
Emergency telephone			X		
Water, electricity backups				X	

Source: Author's own (2020).

The overall impression of the observational study done at the UFS confirmed that the university is quite compliant with the required standards of occupational health and safety. All measures were put in place to ensure the safety of the people within the Bloemfontein Campus in case of an emergency. For instance, Table 4.10, where the researcher went to different place on the campus to look at the movements of the security patrol cars in the areas that seemed dark and far away from people, and nothing threatening was observed. The researcher also jogged and ran around the campus sports ground and there was no emergency threat at any given time.

Table 4.9 shows that the overall impression on campus by observing the UFS area was somewhat 'neutral to safe' as some of the places are far away from people. Yet, anyone may be in this areas alone without experiencing any complications, as the campus has enough lighting at night, while the security cars drive around patrolling. Table 4.11 proves the better state of preparedness at the UFS since, for instance, foot paths have cameras located at the edges of the buildings monitoring the situation on the ground. However, lack of presence of people at certain areas at given times may appear as unsafe. For instance, the Kovsie Health area, the new Education building, and behind the main building are a few places that are normally deserted around midnight and may cause the perception that it is not safe. Bearing in mind the main reason of the whole study being to identify the level of preparedness of any sort of emergency, the UFS Bloemfontein Campus has met the requirements from the observational study by checklisting. To substantiate the evidence gathered through the checklist, further observations were undertaken by means of photographs as shown in the following figures.

4.7.2 Staff drill training

Figure 4.5 Occupational health and safety representatives involved in a drill training

Source: Author's own (2020).

Figure 4.5 shows staff members at the UFS participating in an emergency drill. According to the OHS officer, the drills can be for fires, bomb threats or any other emergencies. The respondents in this figure were from the administration building and a few of these individuals were tasked with different responsibilities. For instance, there are people responsible for evacuation purposes, while there are those responsible for firefighting in case of a fire.

4.7.3 Students drill training

Figure 4.6 Students performing an emergency drill at the Bloemfontein Campus
Source: Author's own (2020).

Figure 4.6 shows a group of student representatives at one of the female residences called Madelief performing a drill. It can be seen by the colourful dress codes that they perform different tasks being first aiders, evacuators, fire marshals and firefighters.

4.7.4 Evacuation plans

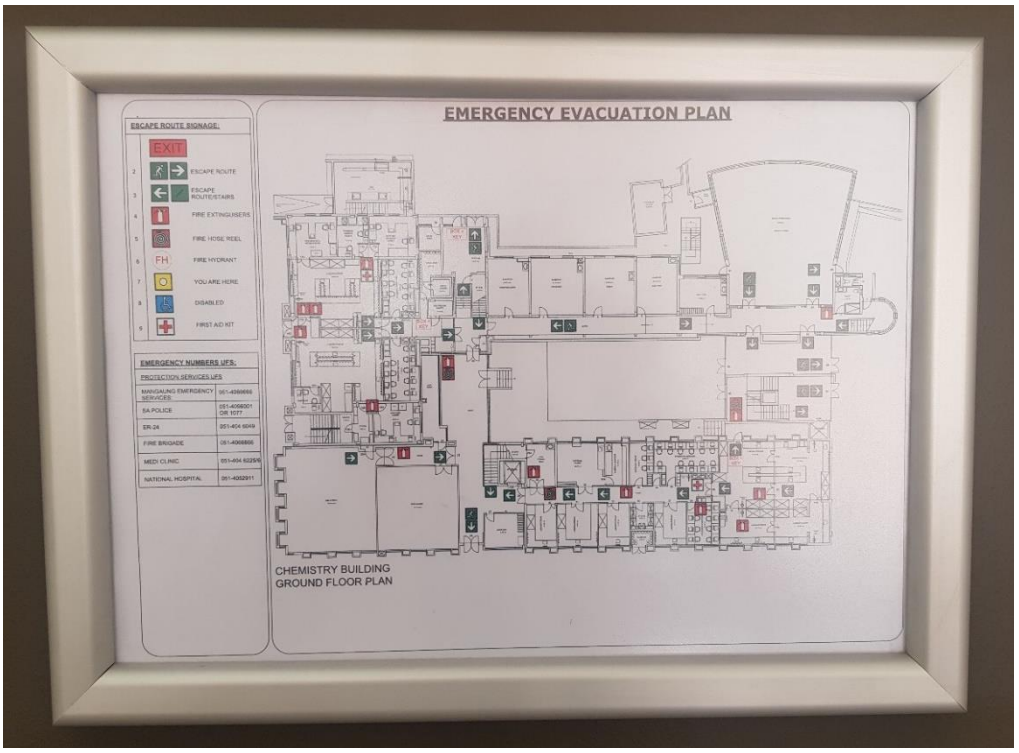

Figure 4.7 The emergency evacuation plan

Source: Author's own (2020).

Figure 4.7 shows emergency plans that were observed when investigating the buildings and checking their state of preparedness. Most departments, residences or buildings at the Bloemfontein Campus have a frame structure like the one of the emergency evacuation plan in Figure 4.7. This structure has the emergency exit routes as well as the information on where that the tools such as the fire extinguishers can be located in case of a fire emergency.

4.7.5 Warning signs

Figure 4.8 Stairs caution sign in the chemistry building

Source: Author's own (2020).

Figure 4.8 shows how some buildings which are used for experimental purposes that have safety signs put in place. This implies that, given the nature of the use of this building, more caution is exercised.

4.7.6 Fire extinguishers

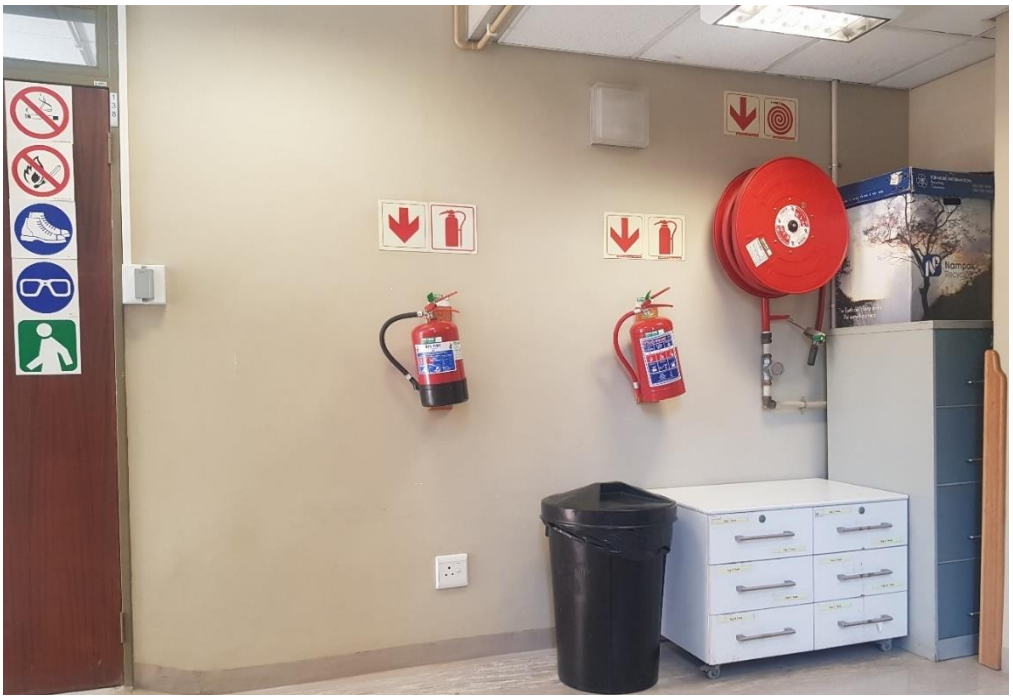

Figure 4.9 Fire extinguishers located at the chemical laboratory

Source: Author's own (2020).

Figure 4.9 shows how fire extinguishers were put in plain sight and accessible to use. It was also noteworthy to observe that the equipment was also serviced recently, which shows that they are ready to be used in case of an emergency. Furthermore, given the nature of the kind of operations overtaken in this building, it was observed that there was more than one type of fire extinguisher. The most common was the carbon dioxide, while on the other hand, there were also the wet chemical, ABC POWDER or AFFF FOAM extinguishes. The one part that was observed is that this building had all sorts of safety warnings which implies that it is a more emergency risk building compared to many other buildings such as the lecture halls or bathrooms.

4.7.7 Early warning systems

Figure 4.10 Alarm siren near the door at the chemical lab

Source: Author's own (2020).

Figure 4.10 shows alarm systems that were in place, which also showed the extended level of preparedness put down by the department to inform the people in case of any danger. It was observed that there is a trigger button to access manually and also a sensor which can sense any danger and serve as a warning system.

4.7.8 Security surveillance

Figure 4.11 Camera surveillance

Source: Author's own (2020).

Figure 4.11 shows surveillance cameras which focusses on the panic buttons within the campus to record and inform the protection services on campus about any emergencies. Other than that, the cameras are located at most of the buildings at the premises at the UFS for surveillance and security.

4.7.9 Barricaded electrical transformers

Figure 4.12 Barricaded electrical transformers

Source: Author's own (2020).

Figure 4.12 shows electrical transformers that were barricaded with a fence. The most obvious reason is that they are near the resting area for students, hence it was necessary for these electrical transformers to be kept a safe distance from the place of rest during classes.

4.7.10 Panic button poles seen in many areas around the campus

Figure 4.13 Panic button poles

Source: Author's own (2020).

Figure 4.13 shows panic button poles which are put in place to assist anybody who is in an emergency to alert security personnel and get assistance urgently. Panic buttons can be located all over the campus making it easily accessible to the people who occupy buildings and facilities on the campus. This also shows the university's preparedness for any emergency that may occur on the campus.

4.7.11 Emergency assembly areas

Figure 4.14 Assembly points for each building

Source: Author's own (2020).

Figure 4.14 shows assembly point signs that are put in place to assist the students or staff to gather in a safe place in case of an emergency. The fact that assembly points were identified for each building shows the university's preparedness in any case of emergency within their buildings. The assembly points are also placed in plain sight outside each building to ensure that it can be easily located by the students or staff in any case of emergency.

4.7.12 Gate card access at student residents and at the entrances

Figure 4.15 Gate card access at student residents and at the entrances

Source: Author's own (2020).

Figure 4.15 shows gate card access points which can be located at each resident building on campus and at the UFS entrance gates around the campus. The only people with a right of entry are the students and staff with access cards that allow them entry into a specific building or the campus in general. A further observation is that a security guard is stationed at each campus gate to monitor the movement that takes place around the campus gates. This shows great effort on the part of the university to ensure the safety of those that occupy the campus. The only negative thing about the access cards is that when used at the gate entrances, it will not work for approximately 5–10 minutes after you have entered. Such a waiting period could pose a risk of danger to students if security cannot be found near the gates.

4.7.13 First aid kit at each residence

Figure 4.16 First aid kit located at each residence

Source: Author's own (2020).

Figure 4.16 shows first aid kits which can be found in every building on campus, mostly close to the door. This shows the preparedness of the university for any medical emergency that can occur in the buildings. The first aid kits are also easily accessible to whomever may need to use it. Furthermore, the contents of the first aid kit are regularly checked to ensure that all the necessities are found in the kit. This further shows that the university is always prepared in cases of an emergency in their buildings.

4.7.14 Protection service and traffic services stationed and patrolling the campus

Each service has its own building where they are able to efficiently assist those that occupy the campus. The university has also placed the contact number of protection

services on each access card making it easier to contact protection services in case of an emergency. Traffic services can also be seen patrolling around the campus during the day ensuring compliance to rules and regulations put in place for the safety of those that occupy the campus. This shows the university's willingness and readiness to ensure safety on the campus.

4.8 Findings

4.8.1 Findings as per research questions.

- ***Question 1: To what extent does UFS proactively assess and prepare for possible risk and safety assessment for emergency risk reduction at the UFS?***

First, the observational study done by means of a checklist and photographs showed that the measures are in place to proactively assess risk. In addition, the interview with the Dean of Student Affairs and the OHS officer provided the study with different mechanisms to assess risk of emergency incidents. One commonly used for this specific matter, is the risk administrator at the UFS under the supervision of the OHS officer. The purpose of the risk register is to assess different risks that exist within the distinct environment. This allows the risk to be sanctioned according to the level of harm it poses to the environment, for instance it could be at a level of department, faculty or the whole university. This is all coordinated under the Deputy Registrar: Risk and Compliance of the UFS.

- ***Question 2: Are there safety methods for students to protect themselves from emergency risk?***

Since 65 (81.25%) of the respondents argued that they have not participated in any emergency drills on campus, of whom 38 (58%) were female and 27 (42%) were male, it can thus be argued that the methods provided for mitigating risk of emergency incidents at the UFS is lacking. Irrelevant of the higher number of female respondents in the study, 33 (41%) of the male respondents were found to be less prepared to deal with emergency incidents compared to females. Nevertheless, the research findings provided important insights into the experiences, perceptions, and preparations campus public safety departments had regarding critical incidents within the campus.

To elaborate, the OHS officer of students stated that it is better to teach the staff members how to run the emergency equipment than teach the students as they are on campus for a season. Even if they are on campus, they do not have classes on certain days of the week. The results of the current investigation provided clear evidence and yet an interesting view whereby the Dean of Student Affairs at the UFS stated that regardless of the efforts put in place to inform students of emergency initiatives, safety is an individual responsibility. Although Egnoto et al. (2013) argued that even if it is irrelevant of the safety being an individual responsibility, it is important to involve everyone. Despite the efforts of the protection services to invite students to attend the safety initiatives, student do not have the interest to do so. Interestingly, you would expect students that have been at the university for long to have participated in emergency drills or rather be aware and knowledgeable about the campus, yet it was not the case.

- ***Question3: What are the students' perceptions of the university's emergency management strategies in place?***

It was also surprising that a history of critical incidents that occurred at the UFS over the years did not change the perceived or cultural mindset of students about emergency preparedness. This is because 39 (48.75%) students had the perception that security and protection services are willing to help them in case of an emergency; hence, 50 (63%) of the students also perceived many areas such as lecture halls as safe as they see strategies in place. However, 41 (51,25%) of the students showed a neutral stance when it comes to reporting matters of emergency.

The state of preparedness to emergencies is up to standard. The perception of students about the state of preparedness at the UFS is, however, misleading. The observational study, previous research on safety and security, as well as the interview with the OHS officer shows that measures are there and are implemented accordingly. Yet, this is not the knowledge of a number of students, hence the difference in opinion of students particularly about their safety on campus. Although it is important to note that the UFS is not located at a disaster-prone environment or region, which implies that many disastrous emergency situations are less likely to be experienced and recorded, as a result it is less likely to statically compare the present natural perils with those that took place in the past.

4.9 Discussion

4.9.1 Lack of emergency preparedness (Assumption 1)

The findings in this study confirms that there is lack of preparedness, particularly among male students. It can be argued that the majority of the female students showed interest in this kind of study matter, because they are more cautious about their safety and security. As a matter of fact, because of their nature to appear more vulnerable they almost go an extra mile to make sure that they are better prepared for any kind of emergency they might face. This pattern could also indicate that despite the momentum supporting enhanced campus preparations for critical events, the nature of males will always remain the same in a sense that they are proud, strong, showing bravado and most likely to show careless behavior. This means that they are less likely to participate in many initiatives put in place by the university in preparation for emergencies. The university students are not entirely prepared or aware of the emergency preparedness measures put in place by the university.

4.9.2 Lack of student awareness of preparedness measures put in place in case of an emergency (Assumption 2)

The findings in this study shows that almost 47 (60%) of the female students were aware of the measures in place as compared to 33 (41.1%) of the male students. This does not necessarily confirm nor contradict this assumption and this is not the true reflection of the level of preparedness put in place by the UFS, because the university only focuses on provision of drills to the staff members who are the people who are available on campus. Although in the residences, other students are chosen by the OHS officer to become a representative of their residence to help as evacuators and firefighters. It is surprising that over 30% of the students in the Faculty of Natural and Agricultural Sciences knows a little more about what to do when there is an emergency than all the other faculties. The Faculty of Education should be one exclusive faculty that promotes awareness and safety in any given environment.

4.9.3 Negative perception of state of safety and preparedness at a university environment, particularly around females which may result in lack of interest in studies (Assumption 3)

The findings in this study contradicts this assumption as the research demonstrated the strong analytical validity that in every question asked to analyse the level of

preparedness by the UFS, females were always the ones more concerned. To a strong extent, the literature and the research methods, as well the survey instruments that were used in this study, got a broad holistic view of the level of preparedness to incidents at the UFS. It can therefore be strongly argued that the majority of the students did receive information or communication regarding their safety, however, they chose to ignore it.

4.9.4 Emergency management plans

The results from the survey showed that the UFS does not only have the emergency management plans in black and white but they are also implemented. As matter of fact, their emergency plans are compliant with the National Incident Management System requirements. Furthermore, each department within the UFS premises has two frames at the entrance area for the emergency evacuation plan. Furthermore, these frames at the wall of the entrances contain information about the health office, OHS, chemical spillages, department management, firefighters, evacuation controller, as well as first aiders.

Moreover, routine assessments and inspections around the campus are an integral part of monitoring and maintaining an update with the residence and housing affairs responsible for all housing at the UFS. According to the OHS officer at the campus, routine assessments and inspections are conducted daily by the housing and residence affairs; hence, they are effective to work with closely.

Overall, the study confirmed through all the findings that it is far for the university to continue using staff members as the first responders, evacuators, and firefighters; additionally, the observational study was very useful as it married what the officials responsible for emergency issues at the UFS were saying. The measures put in place were compliant with the standards of the OHS. The equipment was kept up to standard and staff members who were responsible for overtaking emergency issues received proper training, for instance drills or monthly meetings to discuss matters that might pose risks to staff and students alike.

4.9.5 Emergency information management and risk communication

Based on the interview with the Dean of Student Affairs as well as the occupational safety officer for the university, it is without doubt that measures put in place are

effective to an extent, given the nature of the emergency. It is safe to state that the UFS and the responsible staff for management of information lacks a strategy that is effective to penetrate the mindset of students to heed to the message regarding any emergency preparedness initiative. Surprisingly, the same methods are used to communicate events and other important events which many students may find interesting. However, it does not completely work to push matters of safety against calamities. Although the university staff can argue that the threat was communicated to all people on the campus, should the outcome come out negative and people can be hurt or dead, the state of incident preparedness of the UFS will be questioned.

4.9.6 Preparedness and drill training

The results showed that 80% of the students have not participated in any incident preparedness drills, while 56% of the respondents who have participated were females. However, the OHS officer at the campus stated that the training is compulsory for evacuators of each department as they are appointed by law to act in case of an emergency. Although, students may take part in the drills, they are not always on duty or on campus as opposed to staff members such as lecturers and heads of departments. However, these drills are time-consuming and necessitate proper planning which require funding and key role players.

4.10 Conclusion

To conclude, although this research yielded beneficial insights into the state of preparedness and response to emergencies at the UFS campus. It has also showed that a more strategic and innovative method of communication is required. Emergency incidents or disasters occur unexpectedly; however, they can be predicted. It is due to this reason that many students must be involved in issues of preparedness as much as possible, since it would be useless to have all the equipment in place but only a handful of people can use them. However, it is without doubt that the emergency drills maybe rather expensive, yet prevention is better than cure.

Chapter 5
Recommendations and Conclusion

5.1 Overview of the study

This chapter aims to give an overview of the conclusion reached based on the results discussed in the previous chapter. The conclusions are derived from the objectives of the research study. The main reason behind this study was to assess the state of preparedness for emergency incidents at the Bloemfontein Campus of the UFS. A considerable amount of understanding was picked up from the study. Utilising the data gained, a few proposals will be recommended, and it is trusted that they will help the protection services as well as authorities at the UFS; yet additionally, at all other institutions across South Africa, to viably get ready for crisis of emergency or disasters.

This chapter will provide information regarding the following:

- Key findings.
- Implications of the study on campus safety.
- Recommendations.
- Areas for further research.
- Concluding remarks.

5.2 Key findings

5.2.1 Literature

- Increasing need for HEIs to be prepared.
- Increasing need for disaster management to be included in the curriculum.
- Wrong perception brings stigma.

5.2.2 Policy

- There is OHS and disaster risk management legislation and policies in place to guide HEIs.

- There is a disaster management framework to provide a step-by-step guide in drawing disaster preparedness plans.

5.2.3 Observations

- The UFS has worked hard to ensure the safety of students and observes the legislation.
- The UFS method of communication for student participation in emergency drills has proven unproductive.

5.2.4 Interviews

- Policies and protocols are in place, but students do not participate; for example, the *Bsafe* initiative.

5.2.5 Students

- Most students feel safe; females are more likely to be aware of safety measures than males, but also feel more vulnerable.
- Around 69.7% of the male students perceived the university as safe based on the strategies in place, while females perceived the safety differently; hence, the males are less prepared for emergencies than females at the UFS as they believed it is not necessary.

5.3 Implications of the study on campus safety

The implication of this study is that the UFS has worked hard to be prepared for emergencies and crises and has also made a huge effort to ensure that the campus is safe for students and staff. However, given that females perceived some areas on campus as unsafe, this implies that the OHS officer and risk assessment committee for emergencies and incidents on campus ought to revise the manner in which safety and risk are assured at the UFS. This also means that females may have been victims of emergency incidents, as compared to males on campus.

5.4 Recommendations

The researcher has reviewed emergency incidents at the UFS and the causes from previous incidents recorded. To a large extent, the research findings answered all the research questions and confirmed the assumptions of the study. In a nutshell, looking at the overall research, there is room for improvement although the state of preparedness for emergency incidents at the Bloemfontein Campus is good.

5.4.1 Recommendations to the University of the Free State and students

1. Use different methods of communication to reach out to students, for instance, instead of emailing information, rather use social media or SMSs. The most noteworthy issues are that students enjoy having fun at events so these events should be used as a platform to proactively address and disperse information regarding emergency issues such as drills at the UFS.

2. Safety and security care programmes, including fire extinguishers and practices on courses of action for emergencies, should be focused at all students.

3. Any mitigation measures such as signs for emergency purposes should be put in a way that they are not difficult to see and all people should know their location.

4. Spread of security information, for instance, should be done proactively and compulsory for everyone on campus.

5. All lecturers should provide emergency and security information to the students during lectures.

6. Emergency treatment preparedness should be given to all students; that is, undergraduates, postgraduates and other subordinate staff.

7. There is a need to ensure that the hired security organisation and OHS representatives are capable and commitments to fulfil the needs of students and everyone on campus.

8. Students should learn to practice paying more attention to instructions in any field as it may save their lives someday and also practice having conversations

with friends about issues of safety and awareness to help spread the emergency issues.

9. Many female students are unsettled with the unisex restrooms. The reason for this behaviour is that in South Africa there has been many cases of female abuse and rape incidents. It is therefore recommended that with new buildings being developed at the Bloemfontein Campus that female and male restrooms are kept separate. The respondents recommended areas that required improvement so as to redesign the degree of availability to security authorities at the UFS. They proposed that everybody should have access and made aware on where to locate emergency numbers, and signals for an emergency response ought to be progressively obvious; the number of security workforce ought to be expanded, and furthermore, methods of security information dispersal.

5.5 Areas for further research

5.5.1 Law and regulations

South Africa has many laws and regulations which are utilised reciprocally in implementing various exercises in the community. South Africa has many laws and regulations which are utilised reciprocally in implementing various exercises in the community.

- University administrations should recognise the importance of providing direct and specific information about appropriate emergency preparedness actions.
- Extending the research to other HEIs in South Africa to observe the link and differences.
- Researching how to ensure greater involvement of students in safety and risk, incident and disaster management issues.
- The Department of Basic Education, the Federal Emergency Management Agency, and other emergency management professionals can more effectively share ideas about new legislation, regulations, and education policy.

5.5.2 Disaster management as compulsory subject

Research on the importance of including disaster management as compulsory module may deem necessary to help prevent negligence of many students in the matters of safety, for instance, incorporating it with UFS 101 as an orientation module.

5.5.3 The effect of an unsafe environment on students

Assessing the implications of an unsafe study environment for students may be one interesting and yet informative study to undertake for further research. Understanding this may deem useful to the body of higher education to take emergencies or disaster risks into consideration.

5.6 Concluding remarks

To conclude, it is a common duty of all stakeholders to uphold emergency response training. It is through this common duty that individuals of campus communities will have the essential information to viably react when an emergency impacts them. Since people must act rapidly during an emergency, it is basic that they are prepared before an emergency happens; otherwise, there is a danger of responding improperly to a life-threatening emergency. Administrators and well-being authorities from different universities should be invited to design, test, and actualise hypothetically educated emergency readiness measures as one precautionary methodology to limit harm and fatalities in campus emergencies.

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Appendix 1
Institutional Review Board – University of the Free State
Ethical Clearance Letter

UNIVERSITY OF THE FREE STATE
UNIVERSITEIT VAN DIE VRYSTAAT
YUNIVESITHI YA FREISTATA

UFS UV

GENERAL/HUMAN RESEARCH ETHICS COMMITTEE (GHREC)

16-Oct-2019

Dear Mr Chauque, Mthembi M

Application Approved

Research Project Title:
Emergency Preparedness at the University of the Free State

Ethical Clearance number:
UFS-HSD2019/1602

We are pleased to inform you that your application for ethical clearance has been approved. Your ethical clearance is valid for twelve (12) months from the date of issue. We request that any changes that may take place during the course of your study/research project be submitted to the ethics office to ensure ethical transparency. furthermore, you are requested to submit the final report of your study/research project to the ethics office. Should you require more time to complete this research, please apply for an extension. Thank you for submitting your proposal for ethical clearance; we wish you the best of luck and success with your research.

Yours sincerely

Digitally signed by Derek Litthauer
Date: 2019.10.16 12:04:16 +02'00'

Prof Derek Litthauer
Chairperson: General/Human Research Ethics Committee

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Appendix 2
Survey Instrument

QUESTIONNAIRE

INTRODUCTION

I am a Disaster Management master's student at the University of the Free State investigating the university's level of preparedness to emergencies and the students' level of awareness of the risk reduction strategies implemented by the institution on the main campus of the UFS. The information gathered will be kept strictly confidential and discoveries will be used for scholarly purposes only and help to improve safety and security on the UFS campus for all people within its premises.

DEMOGRAPHICS

Question1

Age:

1	17 to less than 20
2	20 to less than 25
3	25 to less than 30
4	30 and above

Question 2

Gender:

1	Male
2	Female
3	Other

Question 3

Race:

1	African
2	White
3	Coloured
4	Asian
5	Other, specify.....

Question 4

Language of studying:

1	English
2	Afrikaans

Question 5

Academic year:

1	Year 1
2	Year 2
3	Year 3
4	Year 4
5	Year 5 (Postgraduate)
6	Other, specify

Question 5

Faculty:

1	Economic and Management Sciences
2	Education
3	Health Sciences
4	Humanities
5	Law
6	Natural and Agricultural Science
7	Theology
	Other. Specify

Question 6

Degree enrolled for:

1	

Question 7

Do you have any disability?

1	Yes
2	No

Question 8

Residence:

1	On-campus
2	Off-campus

	I know where I can find the following:	**Yes (1)**	**No (2)**
9	Security offices on campus		
10	Most or all of the panic buttons on campus		
11	Emergency exits in my lecture halls/hostel/campus buildings		
12	Emergency exits on campus		
13	Places to report emergency on campus		
14	Places of fire extinguishers in my lecture halls/hostel/campus buildings, etc.		

15	Key buildings to help me identify my position/location on campus in case of an emergency		
16	Key locations to help me report dangerous structures (e.g. uncovered electric wires, uncovered man holes)		
17	Assembly points in case of an emergency		
18	First aid treatment centres/offices		
19	Emergency numbers for protection on campus		

Question 20

Are there other safety and security issues you think you ought to be aware of?
Please elaborate:

PREPAREDNESS

I know what is expected of me in the case of an emergency:

Strongly disagree □

Disagree □

Neutral □

Agree □

Strongly Agree □

I have participated in a security/emergency rehearsals /drills on Bloemfontein Campus previously:

Strongly disagree □

Disagree □

Neutral □

Agree □

Strongly Agree □

I know the names of most of the buildings and streets on campus, should I have to provide location in the event of an emergency:

Strongly disagree □

Disagree □

Neutral □

Agree □

Strongly Agree □

Are there any other issues on security/emergency that you think you ought to be prepared for? *Please elaborate*.

PERCEPTION

I feel very safe on campus:

Strongly disagree □

Disagree □

Neutral □

Agree □

Strongly Agree □

Reporting: It is always easy to report emergency issues on campus:

Strongly disagree □

Disagree □

Neutral □

Agree □

Strongly Agree □

Communication: Information regarding a pending security situation on campus is easily available:

Strongly disagree □

Disagree □

Neutral □

Agree □

Strongly Agree □

Response: Security personnel respond to situations within a reasonable time:

Strongly disagree □

Disagree □

Neutral □

Agree □

Strongly Agree □

Response: Security personnel are always willing to help / provide prompt assistance:

Strongly disagree □

Disagree □

Neutral □

Agree □

Strongly Agree □

During an emergency situation, security personnel are always visible:

Strongly disagree □

Disagree □

Neutral □

Agree □

Strongly Agree □

31. During a health emergency I know who to call:

Strongly disagree □

Disagree □

Neutral □

Agree □

Strongly Agree □

Lecture rooms, bathrooms, laboratories, study logs and library are safe:

Strongly disagree □

Disagree □

Neutral □

Agree □

Strongly Agree □

What changes would you suggest to help people feel safe at the UFS campus?

THANK YOU VERY MUCH FOR YOUR TIME

Appendix 3
Observation Checklist

Table 1: Safety on campus by area

	1 Very unsafe	2 Unsafe	3 Neutral	4 Safe	5 Very safe
Administration Building					
Faculty Block					
New education					
Library					
Callie Human building					
Students center					
Laundry Rooms					
EBW Auditorium					
Student Leisure Area					
Kovsie health					
Main Building					
Administration Building					
Car Parking					
Computer Labs					

Table 2: Factors positively influencing emergency preparedness on UFS campus

	1 Very unsafe	2 Unsafe	3 Neutral	4 Safe	5 Very safe
Visible security					
Security patrols					
Sufficient lighting					
Emergency phones					
Availability of CCTV					
Better footpath					
Cleared bushes					
Low crime levels					
Community assembly points					
Panic buttons					

Table 3: Safety on campus by period of the day

	1 Very unsafe	2 Unsafe	3 Neutral	4 Safe	5 Very safe
Morning: 6.00–12:00					
Afternoon: 12:00–16.00					
Evening: 16:00–21:00					
Midnight: 21:00–06:00					

Table 4: Checklist for emergency in lecture halls, buildings, campus area and laboratories

	1 Very unsafe	2 Unsafe	3 Neutral	4 Safe	5 Very safe
Security offices					
Panic buttons					
Emergency exits in lecture halls, student residents					
First aid kit at the chemistry labs and residents					
Fighter extinguishers in lecture halls, student residents and campus buildings					
Emergency exits on campus					
Assembly points					
Humps and pedestrian crossing					
Emergency telephone					
Water, electricity backups					