Cape Peninsula
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PREVENTION AND MANAGEMENT OF OCCUPATIONAL INJURIES AT SELECTED HIGHER EDUCATION INSTITUTIONS IN THE WESTERN CAPE, SOUTH AFRICA

by

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DECLARATION

I, Charlene Alicia Gladys Esau, declare that the contents of this dissertation/thesis represent my own unaided work, and that the dissertation/thesis has not previously been submitted for academic examination towards any qualification. Furthermore, it represents my own opinions and not necessarily those of the Cape Peninsula University of Technology.

17 March 2015

Signed　　　　　　　　　　　　　　　　　　　　　**Date**

ABSTRACT

Purpose of study: The purpose of this study was to explore the injury on duty prevention and management strategies that are currently used in different higher education settings. The study intended to shed light on specific areas of policy and practice discrepancies related to the disjuncture between employee interactions, regulated directives and organizational goals. **Aims and objectives:** One of the aims was to determine the types of work-related injuries that occur in HEI's by verifying the injuries reported on Employers Reports of an Accident. A second aim was to examine strategies that have been put in place to prevent injuries in the workplace by reviewing policies and procedures related to injury prevention. The final aim was to examine systems in-place to manage occupational injuries by looking at staff health or employee wellness service flow charts or models used at the HEIs. **Population and sample:** Permanently employed personnel at two HEI's in the Western Cape were participants in a multiple case study. The sample units consisted of health and safety representatives, human resources, maintenance personnel, estates and custodial, traffic services and departmental managers. **Methodology:** This study applied a mixed-method using a multiple case study design as an approach to the enquiry. **Methods of data collection:** Documents, questionnaires, and semi-structured interviews were be used to obtain data to answer the research questions. **Process of analysis:** Qualitative and quantitative themes will be analysed in a matrix. The three data sources were triangulated to validate the findings. **Benefits of the study:** Injury prevention benefits the employer and employee in many ways, including increased employee performance leading to increased productivity as well as cost savings. **Main findings:** Injuries that were reported are mostly musculoskeletal injuries; however other types of injuries may not be reported due to under reporting of injuries being common in this setting. Health and safety training and knowledge sharing was not well supported and injury prevention strategies were not optimized. The application of health and safety policies and procedures were not adequately communicated, enforced or monitored. Staff health and employee wellness strategies operate independently and do not facilitate a coordinated response to manage occupational injuries in this setting. Lack of monitoring, organizational support, training and knowledge sharing and communication were the four main challenges to injury prevention management systems. **Conclusions:** The implementation of an effective injury prevention and management

programme could benefit the organization and translate into increased operational value (organizational quality).

Key words: Higher Education Institutions, Occupational Injury prevention, Management of occupational injury.

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DEDICATION

To support staff – the silent majority facing unknown risks when working behind the scenes to ensure business as usual.

For Gregory and Reece Esau and Alice and Charles Fouten.

GLOSSARY

Terms	Definition/Explanation
Health and safety standard	Any standard, irrespective of whether or not it has the force of law, which is applied to promote occupational health and safety.
Health and safety appointee	Permanent employees who have volunteered to be trained and appointed by their employer to oversee occupational health and safety activities in the workplace.
Incident	An event occurring or arising out of work activities, where anyone is exposed to or involved in an accident or injury.
Near-miss	Any incident, accident or emergency that did not result in an injury.
Occupational health and safety practitioners	An occupational medicine practitioner or a person who holds a qualification in occupational health recognised by the South African Medical and Dental Council or the South African Nursing Council.
Organizational quality	A management system where the organizational culture supports the attainment of work satisfaction through an integrated system of tools, techniques and training
Organizational support	A work environment that promotes professionalism, development opportunities and meritocracy by encouraging all staff to work together towards the attainment of work goal structures
Permanent employee	A person who is employed at the Higher Education Institution on a full time basis receiving full entitlements and benefits associated with their status as an employee.
Practicals	A form of assessment where hands-on tasks have to be completed by a learner over a predetermined duration
Risk	The probability that injury or damage will occur
Occupational health and safety culture	The way that occupational health and safety is perceived, valued and prioritised in an organisation.

LIST OF ABBREVIATIONS

ABET   Adult Basic Education and Training

CHE   Council on Higher Education

CHEC   Cape Higher Education Consortium

CHET   Centre for Higher Education Transformation

COIDA   Compensation for Occupational Injuries and Diseases Act

GET   General Education and Training

HEI   Higher Education Institution

HSC   Health and Safety Committees

HSD   Health and Safety Department

HSE   Health and Safety Executive

ILO   International Labour Organisation

ISO   International Organization for Standardization

OHMP   Occupational Health Medical Practitioner

OHNP   Occupational Health Nurse Practitioner

OHS   Occupational Health and Safety Act, 85 of 1993

OHSP   Occupational Health and Safety Practitioners

OLF   Online Learning Forum

SANC   South African Nursing Council

WHO   World Health Organisation

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CHAPTER ONE

Injury Prevention Policies and Practices - a Higher Education Perspective

"Everything we hear is an opinion, not a fact. Everything we see is a perspective, not the truth."
(The Meditations of Marcus Aurelius, AD 121-180)

1.1 INTRODUCTION

The purpose of this study is to explore injury on duty prevention and management strategy discrepancies related to employee interactions, regulated directives and organizational goals. The injury on duty prevention and management compliance data found in formal documents, surveys and interviews of multiple cases at higher education institutions was triangulated. Educational settings are rarely regarded as high risk environments thereby fuelling the need for more robust and stringent injury on duty controls (HSE Occupational services in higher and further education, 2006). Understanding the existing state of injury on duty management may advocate an approach to more effective occupational injury prevention strategies (European Agency for Safety and Health at Work, 2011). These strategies may have cost-benefits impacting on many human resources and operational factors associated with injuries on duty. In addition to the cost benefits, employer initiated injury prevention programmes are viewed positively by employees and promotes high staff morale.

Determining "what is" will help decision-makers to identify the resources, whether human, capital or equipment, needed to get to "what should be" (HSE, 2006). These findings will hopefully facilitate the application of an effective occupational health and safety management system to be operationalized by personnel who are professionally trained to apply their knowledge, skill and expertise to address occupational health and safety needs of HEIs (Songer, Stephens-Stidham, Peek-Asa, Bou-Saada, Hunter, Lindemer & Runyan, 2009). HEIs are tasked with providing graduates that meet the needs of the economic community (Higher Education Act 101, 1997). Incorporating injury prevention and general health and safety education into the curriculum of all fields and disciplines could assist in responding to this need en masse.

The Embedded Occupational Injury Prevention and Management (EOIPM) model developed by the researcher is an adaptation of the ecological model and discusses occupational injury prevention and management, safety climate, safety culture, organizational support and organizational quality as interconnected concepts. HEIs are in the "business" of education and research, therefore the quality of these services is important. Quality assurance is difficult to manage, therefore the development of framework's and guidelines specifically designed for HEIs are critical (HSE, 2006).

The theoretical framework briefly reviews human behaviour theories for a basic understanding of workplace behaviours. Common linkages in the health and safety models appropriate to this study were assessed to formulate a theoretical structure for this cross-sectional study. The researcher did not investigate the causes of injuries and reviewed the selected theories to observe overlaps as a framework to assess the management and prevention of injuries.

The international standard ISO18001 was used to determine if this occupational health and safety management system could be applied to the injury prevention management setting at HEIs. Three aims with a series of objectives have been set to focus the study around answering the central question of "How injuries on duty are managed and prevented at HEI's?" The first aim is to determine the type of work-related injuries that are occurring at HEIs in the Western Cape, the second aim is to examine the strategies that have been put in place at HEIs to prevent injuries in the workplace and the third aim is to examine systems in-place to manage occupational injuries at HEIs.

1.2   BACKGROUND OF THE STUDY

The prevention and management of occupational injuries and diseases forms part of a comprehensive range of occupational health and safety services that have to be offered at work settings (Alli, 2008). In South Africa the management of occupational injuries, occupational diseases and health and safety in the workplace is governed by the Compensation for Occupational Injuries and Diseases Act (Act 130 of 1993) and the Occupational Health and Safety Act (Act 85 of 1993). Since the promulgation of the aforementioned legislation, the implementation of these directives has been fraught with complications. In both public and private sectors these problems are compounded by a lack of accountability, limited resources, deficient enforcement, lack of affordable accredited training and lacklustre backing from organizational authorities (Jeebhay & Jacobs, 1999). In general industry specific risks and hazards are based on the nature of the tasks being performed; however at higher education institutions (HEIs) the majority of these risk factors converge within the teaching, research and daily operational requirements of these institutions (Council of Higher Education, HE Monitor No. 8, 2009). The legislation, standards and policies clearly indicate that an injury free workplace is a basic human right (Constitution of the Republic of South Africa Act 108, 1996). My hope is that this dissertation will offer insight as to why the effective management of occupational injuries has value to organizations and that it will assist in identifying gaps in current strategies to manage employee wellness and performance in this distinctive and diverse setting.

1.2.1 Purpose and Justification

1.2.1.1 Purpose

The purpose of this study is to explore the injury on duty prevention and management strategies that are currently used in different higher education settings. The study intends shedding light on specific areas of policy and practice discrepancies related to the disjuncture between employee interactions, regulated directives and organizational goals. Injury on duty prevention and management compliance at higher education institutions was studied by triangulating the data found in formal documents, surveys and interviews of multiple cases.

1.2.1.2 Justification

The educational setting is rarely regarded as a high risk environment, even though HEIs are the precursors to work activities where graduates are prepared for the workforce through practical assessments, research activities and projects (Pillay, Boulton-Lewis & Wilss, 2004). The fact that the environments at HEIs are predisposed to multiple seemingly "hidden" risks substantiates the need for more robust and stringent injury on duty controls (HSE Occupational services in higher and further education, 2006). The occupational health field recognises the potential for unknown risks in all environments and therefore advocates the promotion of a safety culture that is focused on the prevention of injuries and increasing awareness of risks (Nuwayhid, 2004). The importance of occupational health to any organization can be observed by its safety culture and organizational support systems (Wadsworth & Smith, 2009). These values are measurable via the organizations efforts to implement and communicate occupational health and safety strategies through the development and execution of appropriate policies and injury prevention programmes (Hermanus, 1999; DeJoy et al., 2004). The UK based HSE (2006) completed a study at HEI's in the UK, thereby recognising and heralding the need for a greater focus on the management of occupational health and safety in this setting. The National Council on Higher Education (CHE) has set goals to increase student enrolments, increase research outputs and increase the quality of academic programmes (CHE, 2000). Basic risk assessment principles caution that any change in an environment introduces an element of increased risk (DiNardi, 2003). The risk assessment therefore serves as a proactive practice by assessing the risk and enabling appropriate reasonable responses to mitigate or neutralize the identified risk (HSE, 2006). All of the CHE areas of development introduce elements of increased unknown risk which have not been assessed in terms of the occupational health and safety implications for HEI stakeholders. To equip HEIs to deal with these risks an appropriate and effective occupational health and safety management system needs to be in-place.

1.2.2 Benefits of the study

a. Benefits to the employer

The cost-benefits of reducing occupational injuries and striving towards an incident free work environment are evidenced by the corporate sectors pursuit of competitive advantage through audit ratings and ISO accreditations (Tsiotras & Gotzamani, 1994). Injury prevention benefits the employer in many ways, including increased employee performance leading to increased productivity (Burton, 2008). Injury on duty prevention leads to reduced absenteeism and mitigates the costs of hiring temporary staff to perform the injured employee's duties while they are recovering from an injury (Centre's for Disease Control and Prevention, n.d.; WHO, 2010). Understanding the existing state of injury on duty management may help to advocate for a more integrative occupational health management approach which could pave the way to more effective occupational injury prevention strategies (European Agency for Safety and Health at Work, 2011). Cost savings are further anticipated by the decrease of equipment and property damages that are often associated with injuries on duty (HESAPRO, 2013).

b. Benefits to the employees

A health and safety culture that is explicitly supported and promoted communicates an uncompromising diligence to safeguarding the rights of workers (DeJoy, Schaffer, Wilson, Vandenberg & Butts, 2004). Employer initiated prevention programmes are viewed positively by employees and bolsters the perception that employers value their employees (Eisenberger, Jones, Aselage & Sucharski, 2004). Injury prevention programmes have the capacity to foster a trust relationship between employers and employees (Wu & Sein, 2011). Employees who work in organizations with a good safety culture have been found to have a higher morale and experience greater job satisfaction (Moraru, 2012). Prevention is less costly and less painful than recovering from an injury; and employees can therefore be said to benefit directly from injury prevention management (Shapiro & McGarity, 1991; HESAPRO, 2013).

c. Benefits to the Occupational health field

Determining "what is" will help decision-makers to identify the resources, whether human, capital or equipment that is needed to get to "what should be" (HSE, 2006). The findings of this study will hopefully facilitate the application of the COID and OHS Act in this setting by illuminating the blockages and shortfalls that hinder individual and organizational commitment to safety practices (OHS Act section 14, 85 of 1993). An effective occupational health and safety management system should be operationalized by personnel who are professionally trained to apply their knowledge skill and expertise to implement the system to

address the specific needs of HEIs (The Business Growth Agenda, 2012). The right resources (human, capital and equipment) will ensure that the HEI receives a full return on investment (Linhard, 2005). The expansion of the occupational health field will gain impetus as the value of occupational health professionals in all occupational fields becomes more explicit (Smith, 2009). The motivation for this expansion will be greatly aided as more research is undertaken to provide a fuller picture of the actual risks in all work settings. More empirical evidence is needed to extol the merits of occupational health and safety professionals to the overall workforce and thereby move away from pigeonholing the profession to specific industries. We are all at risk on a daily basis, a lack of awareness simply renders some oblivious to these risks and the available factors to mitigate these risks (Forjuoh & Gyebi-Ofosu, 1993).

d. Benefits to the Higher Education Community

Awareness and promotion of safe practices has a known positive impact on productivity and far reaching socio-economic implications (Nuwayhid, 2004). Incorporating occupational health and safety in all aspects of the HEIs operations suggests that quality standards have evolved and could lead to the inclusion of occupational health and safety regulatory portfolios within existing HEI bodies (Hermanus, 1999). Higher education has been tasked with providing graduates that meet the needs of the economic community (CHE, 2000). This community is increasingly in need of a workforce that is aware of and responsive to occupational health and safety practices (Forjuoh & Gyebi-Ofosu, 1993). HEIs have the opportunity to respond to this need en masse by incorporating injury prevention and general health and safety education in the curriculum of all fields and disciplines. Waiting until people enter the labour market (start employment), in order to begin training them about occupational health and safety, may be too little too late.

1.3 CONCEPTUAL MODEL

1.3.1 Description of the model

The concepts, Safety climate, Safety culture, Organizational support and Organizational quality, are interconnected. Occupational injury prevention and management is embedded in all of these concepts and cannot be viewed as beginning with the individual and ending with operational value. The researcher posits that the embedded occupational injury prevention and management model (EOIPM) assists in viewing this concept as an inherent dimension of each interrelated concept.

Figure 1: Embedded Occupational Injury Prevention and Management logic model
(adapted from the ecological model described by Andrews, Bubolz, & Paolucci,
1980)

1.3.1.1 Individual (Safety climate)

Injury prevention practices can be developed on an individual level; however this
development is influenced by the organization (DeJoy et al., 2004). Injury prevention
practices on an individual level are therefore influenced by the injury prevention practices
forming part of the organizational culture. The safety climate is believed to be the sum of
individual perceptions about safety (Holloway, 2012). These perceptions are believed to
influence and motivate the workers behaviour. According to Hahn & Murphy (2008)
employees are more likely to adhere to safe work practices if they perceive that the
organization is serious about adherence to the safety culture.

1.3.1.2 Employee interactions (Safety culture)

Individual injury prevention practices are embedded in a safety culture that   values injury
prevention practices. Safety culture is the formulation of a culture of good practice that is
based on a trust relationship between employers and employees. Such a culture is cultivated
by a willingness among staff to openly interact with each other to address occupational
safety and health problems. Where an openness to address injury prevention and a
collaborative and cooperative management approach to injury prevention are present, the
injury rates will be low.

1.3.1.3 Work structures (Organizational support)

Organizational environments that have work structures to support employees in fulfilling their
work goals have better performing employees. Employees working in an environment with
good organizational support structures are more likely to have a positive perception of the
organization. The commitment that the organization makes to its employees is followed by
the employees' commitments to the organization (Wu, 2008). The organization that

implements organizational support structures that upholds occupational injury prevention will have employees that respond to the supportive environment in a reciprocal manner.

1.3.1.4 Operational value (Organizational quality)

Healthy companies recognise business value in health and make health management a tenet of business excellence (Zwetsloot & Pot, 2004). Quality of work and employment are cited as dimensions of the changes in higher education that are relevant to work (Pillay, Boulton-Lewis, & Wilss, 2004). Quality, like organizational support, is dependent on employer and employee commitment to achieving the common goals of the organization (Cameron & Sine, 1999). HEIs have a unique mixture of stakeholders operating in a setting where academic and support functions co-exist therefore how we do what we do, is as important as what we do (CHE HE Monitor no.8, 2009). Conducting its business in a safe and injury free manner would therefore be viewed as a measure of quality. The HEI is essentially in the "business" of education and research, therefore the quality (safety) while conducting its core functions is increasingly under scrutiny by various bodies authorized to oversee these functions. The quality of organizational service delivery is important and difficult to manage, therefore the development of framework's and guidelines specifically designed for HEIs are critical (HSE, 2006).

1.4. THEORETICAL FRAMEWORK

Human behaviour theories are briefly reviewed for a rudimentary understanding of workplace behaviours. Common linkages in the health and safety models appropriate to this study will be assessed to formulate a theoretical structure for this cross-sectional study. Social exchange theory (Emerson & Cook, 1978; Mearns & Reader, 2007) is a behavioural approach used in social climate studies and focuses on how relationships between individuals are shaped by power interactions and the exchange patterns that emerge as they try to achieve balance in these relations. The term safety culture was first used in 1986 following the Chernobyl nuclear disaster. Poor safety culture was listed as a factor that contributed to this tragedy (European Agency for Safety and Health at Work, 2011).

Organizational support is mentioned in studies reporting on safety culture, job satisfaction and improved work performance. Organizational support theory (OST) posits that employee perceptions are formulated to meet their socio-emotional needs and to assess the benefits of increased work effort. This theory claims that employees form a general perception about their employers concern for their well-being and the extent to which the organization values their contributions (Eisenberger, Huntington, Hutchison & Sowa, 1986). Organizational quality describes a management system where the organizational culture supports the

attainment of work satisfaction through an integrated system of tools, techniques and training. Limited sources have generated specific theories dealing with organizational quality, however organizational change theories discussed by Rhydderch, Elwyn, Marshall & Grol (2004) puts forward the concept of organizational development. Organisational development is described as a planned change that emphasises human processes in an organisation. This theory assumes that successful organisational change depends on agreement between individual and organisational goals. The importance of beneficial interactions between individuals in an organization is a common theme cited in all the fore mentioned theories as well as studies which draw heavily on behaviour and social theories.

Total Quality Management has a customer orientation where all organization stakeholders are regarded as internal and external customers and are equally involved in quality control (Kruger, 2001). Gupta, McDaniel & Herath (2005) states that leaders in quality studies acknowledge that product and service quality creates competitive advantages for organizations (Veltri, Pagell, Behm & Das, 2007). The total quality concept is used in both manufacturing and services sectors and has been found to be universally applicable (Gupta, McDaniel & Herath, 2005). Occupational health and injury prevention are largely service driven activities and will be viewed in this study through a business and safety directed lens instead of the conventional health and risk reduction perspectives. A host of theories on risk reduction and accident and injury causation concur that the success of safety applications requires climate, culture and organizational support (Heinrich, 1931; Petersen, 1988).

In the health and safety field Behaviour Based Safety (BBS) is a well-known human behaviour theory designed to decrease risks by reinforcing safe behaviour and identifying causes of unsafe behaviour. Injuries in the work place are generally regarded as the result of accidents arising out of unsafe behaviours (Vredenburgh, 2002). This view was advocated by E.S.Geller and is not popular among all health and safety scholars due to an over emphasis on human factors as the primary cause of injury (Manuele, 2011). The multiple causation theory of Heinrich (1931) more realistically captures the nuances of the modern workplace which are dynamic environments with multiple interrelated factors that could contribute to the development of accidental injuries. This theory has however come under considerable critique due to the seeming threats to the validity of the findings and unsupported key assumptions (Difford, 2012, Pettinger, n.d). The Accident-Incident theory (Petersen, 1988) is an extension of Human Factors theory which may be useful in examining the issue under investigation. Accident-Incident theory posits that systems failure, ergonomic factors along with human errors contribute to injuries. The researcher will not be investigating the causes of injuries but will review these theories to observe overlaps as a framework to assess the management and prevention of injuries. The assumption being that an understanding of the

causes of injuries may lead to the development of a checklist or "how to" guide for institutions who intend implementing an injury prevention and management system. The international standard ISO18001 will be used to determine if this occupational health and safety management system could be applied to the injury prevention management setting at HEIs.

1.4.1 AIMS AND OBJECTIVES OF THE STUDY

Three aims have been set to focus the study. Each aim has a series of objectives which have been outlined in the following manner.

1.4.1.1 Aim 1

To determine the type of work-related injuries that is occurring at HEIs in the Western Cape.
Objectives:

- Assess injuries reported to the department of labour on COIDA form WCL2 Employers Report of an Accident.
- View security records for any injuries or incidences that have been reported to security personnel.
- View First aider reports of treatments provided for minor injuries

1.4.1.2 Aim 2

To examine strategies put in place at HEIs to prevent injuries in the workplace.
Objectives:

- Review policies and procedures related to injury on duty prevention.
- Assess injury prevention awareness campaigns and employee education drives.
- View staff induction programmes for inclusion of injury prevention information.
- Look at the methods used to communicate injury on duty prevention information to staff.

1.4.1.3 Aim 3

To examine systems in-place to manage occupational injuries at HEIs.
Objectives:

- Examine the health and safety structures (safety committees) and their related injury on duty documents (Annexure 1 reports) in place at the HEIs.
- Review the occupational health and safety management organogram.
- Look at the occupational health, staff health or employee wellness services flow chart or model used at HEIs.

1.5 LAYOUT OF THESIS

The thesis was arranged into six chapters intending to guide the reader through the stages of this study. Chapter one aims to familiarize the reader with the research problems being investigated and provides a summary of the study. This summary elucidates what is being studied, why it is of interest and how the researcher intended to study the topic. Chapter two identifies the research that was already completed on the topic under investigation. The literature that was reviewed examines current information relevant to the topic. Chapter three explains the research methodology utilized to gather information and collect data to answer the research questions. Chapter four presents the considerable amount of data that was collected in an ordered manner. Descriptive statistics was put in writing and the data frequencies, analysed by using SPSS version 22, are displayed in tables and figures (Pallant, 2007). The data was arranged into specific groups of corresponding data. Chapter five discusses the results that have been uncovered in the previous chapter. The results are discussed separately so that the reader is able to grasp the findings of each data collection method and follow the discussion thereof in a logical, cumulative and uncomplicated manner. Chapter six is the final chapter which contains conclusions and recommendations that are based on the discoveries that were made during each phase of the research process. Where appropriate, numbered appendices have been included to explain long processes, substantiate main arguments and provide complete information on aspects that appear in the main text.

CHAPTER TWO

Review of the Literature

"What has been will be again, what has been done will be done again; there is nothing new under the sun." (Ecclesistes1:9) NIV.

2.1 INTRODUCTION

Baker and Coetzee (1983) credits Dr. A.J. Oerenstein with pioneering the development of occupational health services in South Africa; however the beginnings of occupational health nursing can be traced to the health services provided to early travellers to colonies (Kotze, 1997). The evolution of occupational health in South Africa has been a slow process despite the impact of war and development that necessitated the reform of legislation as industrialization influenced the African continent (Fashoyin, 1998). South Africa has a number of progressive laws, however the regulation of occupational injuries, diseases and safe working conditions are mainly charged to the Compensation for Occupational Injuries and Diseases (COID) and Occupational Health and Safety (OHS) Acts (SANS 10366: 2012; Industrial Health Resource Group, 2011). These occupational health and safety directives are under the custodianship of the Department of Labour which oversees the enforcement of both Acts and the department of Minerals and Energy which shares some responsibility for OHS. The fragmented OHS services have been revised and restructured under the respective governmental agencies (Hermanus, 1999).

Delays in passing a national statutory requirement to stipulate the provision of occupational health services has resulted in these services being an exception in most work sites (Jeebhay & Jacobs, 1999). The recent piloting of the decentralized COID Act administration is intended to operationalize the service delivery as publicized by the Department of Labour Director General (Compensation Fund Strategic Plan 2013/4 – 2018/9). This strategy aims to streamline the services provided by the legislature to the South African workforce; however the challenge has always been in the application of these policies (CF Annual Report, 2011/2012). The government agencies have an array of legislative directives that have been ratified and amended since the start of mining in the early 1900's, however the implementation and enforcement of these laws proves to be challenging and the administration of injuries and occupational diseases remains protracted (Hermanus, 1999).

Other studies have already identified the lack of resources, support and recruitment of suitably trained professionals as factors contributing to the struggle in implementing and enforcing health and safety legislation (Lethbridge, 2007). The business sector is slow to respond to these findings due to the fore mentioned issues as well as the costs and lack of support in implementing available International Labour Organization (ILO) guidelines. Most

organizations grapple with how to go about implementing an occupational health and safety management system and maintaining the necessary funds to commit to upholding these standards in order to reap the long term benefits (Lethbridge, 2007). Prolonging the application of these constitutionally bonded rights may see the current issues continue into the next decade if occupational health and safety professionals do not actively promote the business value and importance of these services. Available literature clearly states that the provision of occupational health and safety services is the responsibility of the employer; however the numbers adhering to or attempting to adhere to these directives are unknown (Jeebhay & Jacobs, 1999). Against this backdrop this study looks at occupational health and safety and injury prevention practices at higher education institutions to determine how workplace safety is promoted in these settings.

2.2 OCCUPATIONAL HEALTH

2.2.1 What is Occupational Health?

The definition of occupational health was derived from the concept of a healthy workplace (WHO, 2010). The modern definition evolved from the 1950 joint WHO and ILO committee description of the occupational health field's involvement and connection between work and health (Dixon & Price, 1984; Hattingh & Acutt, 2003; WHO, 2010). As early as 1713 Ramizzini published the well-known De Morbis Artificum Diatriba which documented that time spent at work performing risk related tasks may expose workers to agents having a negative impact on their physical wellbeing (DiNardi, 2003). H.A.Waldron (1979) further fittingly describes ones occupation as being the environment which has the greatest effect upon a man's health. Hattingh & Acutt (2003) have stated that "the relationship between work and health is a two-way process where the working environment may affect the health of the worker…" The definition of a healthy workplace developed from the WHOs (2010) definition of health and grew from a limited focus on the tangible work environment (physical, chemical, biological and ergonomic hazards) to the present broader definition which incorporates the workplace culture (community, lifestyle factors and psychosocial factors). Together these factors (physical work environment and workplace culture) are globally accepted as factors having an effect on the wellbeing of workers and the communities that they form part of (WHO, 2010).

The WHO and ILO revised its definition of occupational health at its 1995 joint seating stating that occupational health is aimed at the "promotion and maintenance of the highest degree of physical, mental and social well-being of workers in all occupations…".

Ali (2008) succinctly summarized this statement as "the adaptation of work to man and of each man to his job." South African occupational health and safety legislation (Occupational Health and Safety Act, no.85 of 1993) includes occupational hygiene, occupational medicine and biological monitoring in its lawful definition of occupational health. To better understand the mechanisms of occupational health the terminology forming part of the legal definition will be further discussed as components of occupational health.

2.2.2 Components of Occupational Health

Kotze (1997) and Hattingh & Acutt (2003) discuss occupational safety, occupational hygiene, occupational medicine and occupational nursing as components of occupational health. Occupational safety is described as the prevention and mitigation of personal injury, accidents or damage to property that may result from work related accidents (Hattingh & Acutt, 2003). According to Hughes & Ferrett (2010) protecting people from physical injury is synonymous with occupational safety. Hughes & Ferrett (2010) identified a poorly defined distinction between "health" and "safety" and cautioned that these terms are used interchangeably to denote physical and mental wellbeing of people at work. Occupational hygiene involves exposure assessments (qualitative or quantitative) via workplace monitoring and mathematical modelling to determine the extent of previously identified hazards (DiNardi, 2003). Occupational hygiene is therefore understood to be the science dedicated to the identification, assessment and regulation of harmful environmental factors arising from workplaces that may cause illness or damage to workers or the community (OHS Act, 1993; DiNardi, 2003). Occupational medicine is a specialist medical field concerned with promoting and safeguarding the physical and mental health of employees in work-related settings (WHO, 2000). Occupational medicine works with other related speciality fields to form a multidisciplinary team with the capacity to provide an occupational health service envisioned by the ILO (ILO Working paper, 2009). The International Hazard Datasheets on Occupation describes an occupational nurse as a healthcare worker who is a qualified nurse providing diverse healthcare services to employees, advising management and employees on occupational health issues and assisting the occupational physician in workplaces such as universities, research laboratories, industrial plants, service companies and other public institutions or private enterprises (ILO/CIS, 1999).

2.3 THE PROVISION OF OCCUPATIONAL HEALTH

The ILO Occupational Health Services Convention, 1985 (No. 161) under Article 11 specifies that the competent authority in each member country has to determine the qualifications required for personnel to provide occupational health services.

The required qualifications must be in accordance with national laws and practices and must relate to the nature of the duties to be performed (ILO OSH No. 72, 1998). In this section the provision of occupational health services will be discussed with specific interest in occupational health policies and the implementation of regulations in countries grouped according to their economic profiles.

The economic indicators used by the International Monetary Fund (IMF) and the World Bank are criteria for countries to be invited to join the Group of Five (G5), Group of Eight (G8), Group of Fourteen (G14) or Group of Twenty (G20) summits (Kirton, 2010; Shorr, 2011). These groupings categorize countries into leading, emerging (newly industrialized countries) or underdeveloped economies (Gorman, 2003; International Monetary Fund, 2011). The various summits are attended by the leaders of each member country who use these summits as platforms to discuss priority issues and negotiate mutually beneficial trade agreements (Shorr, 2011). The G5 summit is formed by Brazil, India, China, South Africa and Mexico (BICSAM) which are regarded as emerging economies (China Network Television, 2013). The G8 Summit consists of the leaders of Canada, France, Germany, Italy, Japan, Russia, the United Kingdom and the United States who are highly industrialized countries (AIDemocracy, 2013). The G14 Summit consists of a combination of the G5 and G8 countries including Egypt as the 14th member (Kirton, 2010). The G20 Summit is composed of a more representative group formed by a mixture of emerging and underdeveloped economies (Kirton, 2010; Shorr, 2011). Some economists regard the G20 summit as more effective due to having a faster paced approach to addressing priority issues and a more diverse membership (Shorr, 2011; Kirton, 2012). This diversified membership is believed to balance the concerns of all member countries on an equitable basis whether these are leading or underdeveloped economies (Kirton, 2010).

2.3.1 Developed Countries

Of particular interest is the ILO document outlining the implementation of Occupational Health Services (ILO, 2013) and the WHO Global Plan of Action on Workers' Health (2008-2017) and how these documents impact the provision of Occupational Health and Safety in highly industrialized (G8) countries (Kirton, 2010). Research findings indicate that developed countries more readily adopt policies to promote, enforce and govern safe workplace practices (Forjuoh & Gyebi-Ofosu, 1993; World Bank, 2006; Jeyaratnam, 2011). Although developed countries have conventionally been the front-runners in research, policy and legal reforms in many fields, the organization of occupational health services remains challenging (Royal College of Physicians, 2010). In the United Kingdom the Royal College of Physicians (2010) identified fifteen focal areas as future guidelines for occupational health care. In developed as well as developing countries the responsibility to fund health protection in the

workplace is placed on employers (Soediono & Kleiner, 2002; WHO EU, 2002; Royal College of Physicians, 2010). The UK has raised the bar in this regard by encouraging employers not only to fund occupational health services but to strive for the provision of high quality OHS services (Royal College of Physicians, 2010). Studies have indicated the need for a system of standards and accreditation of occupational health services that are based on employer needs (Baker, Honchar & Fine, 1989; WHO, 2002). These needs have extended to sectors that have not previously benefited from OHS legislation and necessitate the regular review and updates of legal guidelines to address relevant crises in the evolving and ever changing work environment. The need for greater coverage has fashioned proposals to integrate occupational health services into public health programmes so that the Informal Sector (IS) and Small to Medium Enterprises (SMEs) can have access to these specialist services (WHO, 2002; GOHNET, 2013). The World Bank (2006) and others (Nuwayhid, 2004) caution that policymakers are ill-advised if economic development becomes a prerequisite for the implementation of safety practices and injury prevention initiatives. The multiple agencies networking for improved workplace safety concur that the development and enforcement of occupational health and safety policies should form the basis for realizing workers health by moving initiatives from discussion points into action points (Nuwayhid, 2004; Lethbridge, 2007; DOHA Declaration, 2009; World Health Assembly, 2008-2017). The ILO (2013) attributes the decrease in occupational injuries in most high income and many middle-income countries to changes in the economic structure, increased use of safer technologies and the implementation of better prevention measures.

2.3.2   Developing Countries

Of the 145 countries listed as developing countries three-quarters of the world's largest and fastest-growing cities are based in Africa, Asia, and Latin America (Satterthwaite, 2003). The G5 summit (BICSAM) represents the largest and fastest growing economic ascending powers of Brazil, India, China, South Africa and Mexico (Kirton, 2010). The ILO country profiles indicate a lag in implementing conventions associated with occupational health and safety, with a more noticeable delay among emerging and underdeveloped economies (ILO Country Profiles, 2013; ILO EU, 2013). The reasons for the implementation gaps are unclear however funding, resources and a shortage of qualified OH practitioners have been cited as possible contributing factors (Rantanen, Lehtinen & Iavicoli, 2013). Developing countries encounter similar OHS concerns with Musculoskeletal Disorders (MSD), Noise-induced Hearing Loss (NIHL) and Occupational Respiratory diseases being cited as difficulties in most developing countries (Sánchez-Román, Juárez-Pérez, Madrid, Haro-García, Borja-Aburto & Claudio, 2006; Lima & Fernandes, 2009; Zhang, Wang & Li, 2010). The NATLEX database indicates that a number of ILO conventions are in use in various member countries (ILO database, 2014). This encouraging trend conceals the fact that few of the endorsed

conventions are directly applicable to the major occupational health and safety concerns experienced in the endorsing countries. Brazil (5) takes the lead in implementing occupational health and safety specific conventions and India has yet to implement any of the 9 core OHS recommendations (ILO database, 2014). Table 2.3 indicates that at the time of this research none of the BICSAM countries have yet endorsed convention no.187 (Promotional Framework for Occupational Health and Safety, 2006 Recommendation no.197).

Table 2.3.: Implementation of Occupational Health in G5 countries (BICSAM)

BRAZIL	Policies	2004: National Work Safety and Health Policy. 1972: Provision of Occ. medicine services in companies made compulsory National Environmental Policy (PNMA)
	Occupational Health Legislation	2003: Federal Law No. 10.650 obliges environmental authorities to allow public access to documents on environmental issues. 1999: Law No. 9.605/98, regulated by the federal Decree No. 3.179 of Sept. 21 1988: The Organic Law of Health 1981: Brazilian Federal Constitution (Article 225, Number 3) enacted by Federal Law No.6.938 created the National Environmental Protection System (SISNAMA) regulated under Decree 99.274/90 1978: The Regulatory Standards (Normas Regulamentadoras) 1977: Law No. 6514/77 1976: Law No. 8.468 Article 82, Item II immediate communication of an accident that may bring risks to the environment. 1972: Decree 3237 of the Ministry of Labour. 1943: Law-Decree 5.452 consolidation of Work Laws, Chapter V established Hygiene, Occupational Health, and Safety. 1939: Law of Work Accident
	Govt. Dept. overseeing OH	The Ministry of Health Ministry of Labour* and Regional Labour Agency National Institute of Social Security.
	Key OH Concerns	Musculoskeletal Disorders, Mental Health Disorders, Hearing Loss, Asbestos Exposure
	Registered OHP's	>5,000 (2009) 3,000 are Occupational Physicians.1,000 specialists in Occupational Health. 1974: start of specialization courses in occupational health.
	Occ. Health and Safety Agencies	1979: Inter-Union Department for the Study of Health and the Working Place Environment (DIESAT). 1969: National Association of Occupational Medicine was established. 1968: Foundation of ANAMT (National Association on Occupational Health of Brazil). 1966: The Jorge Duprat Figueiredo Foundation of Occupational Safety and Health (FUNDACENTRO). 1960s: Association for Prevention of Accidents (ABPA). 1957: Industries' Federation opened the first specialized outpatient clinic for occupational diseases. National Work Safety and Health Network (RENAST). Brazilian Association of Collective Health 150 Government Referral Centres for Workers' Health and OH sentinel services. Social Service Industry provides private OH services.

		Brazilian Institute of Geography and Statistics. Secretariat of Occupational Health and Safety. Brazilian Nursing Association's (ABEn) Health and Safety at Work Secretariat (SSST) Health and safety legislation is published in the daily Federal Gazette (Diario Oficial da Uniao)
	ILO OH related Conventions in force (22)	C155 - Occupational Safety and Health Convention, 1981 C161 - Occupational Health Services Convention, 1985 C170 - Chemicals Convention, 1990 C167 - Safety and Health in Construction Convention, 1988 C176 - Safety and Health in Mines Convention, 1995 C042 - Workmen's Compensation (Occupational Diseases) Convention (Revised), 1934 C174 - Prevention of Major Industrial Accidents Convention, 1993 C171 - Night Work Convention, 1990 C164 - Health Protection and Medical Care (Seafarers) Convention, 1987 C163 - Seafarers' Welfare Convention, 1987 C162 - Asbestos Convention, 1986 C152 - Occupational Safety and Health (Dock Work) Convention, 1979 C148 - Working Environment (Air Pollution, Noise and Vibration) Convention, 1977 C139 - Occupational Cancer Convention, 1974 C136 - Benzene Convention, 1971 C134 - Prevention of Accidents (Seafarers) Convention, 1970 C120 - Hygiene (Commerce and Offices) Convention, 1964 C119 - Guarding of Machinery Convention, 1963 C115 - Radiation Protection Convention, 1960 C103 - Maternity Protection Convention (Revised), 1952 C089 - Night Work (Women) Convention (Revised), 1948 C019 - Equality of Treatment (Accident Compensation) Convention, 1925
INDIA	**Policies**	National Policy on Safety, Health and Environment at Workplace
	Occupational Health Legislation	Metalliferous Mines Regulation Child labour (Prohibition and Regulation) Act, Building and other Construction Workers (Regulation and the Employment and Conditions of Service) Act, 1996 Oil mines regulation, 1989 Dock Workers (Safety, Health and Welfare) Act, 1986 Insecticides Act, 1968 Beedi and Cigar Workers (Conditions of Employment) Act, 1966 Coal mines regulation, 1961 Mines Rules, 1957 Mines Act 1952, and 1955 The Plantation Labour Act, 1951 The Factories Act, 1948
	Govt. Dept. overseeing OH	Ministry of Labour Directorate of Industrial Safety and Health (state level enforcement agency)
	Key OH Concerns	Silicosis, Musculoskeletal injuries, Coal workers' Pneumoconiosis, Chronic obstructive lung diseases, Asbestosis, Byssinosis, Pesticide poisoning and Noise-Induced Hearing Loss (NIHL).
	Registered OHP's	2308 Safety Officers, 701 Inspectors and special inspectors and 65 certifying Surgeons. 753 (266 physicians, 182 nurses, 305 others) healthcare workers trained by Centre for Occ. & Environmental Health

	Occ. Health and Safety Agencies	National Institutes of Occupational Health Industrial Toxicology Research Centre Directorate General of Factory Advisory Services & Labour Institutes (DGFASLI) Regional Labour Institutes (4) National Network on Occupational Safety & Health information system known as "INDOSHNET "- Indian Occupational Safety and Health Information Network. World Health Organisation (SEARO) South East Asia Regional Office International Labour Organisation Centre for Occupational and Environment Health, Maulana Azad Medical College (MAMC)
	ILO OH related Conventions in force (15)	C174 - Prevention of Major Industrial Accidents Convention, 1993 C005 - Minimum Age (Industry) Convention, 1919 C006 - Night Work of Young Persons (Industry) Convention, 1919 C016 - Medical Examination of Young Persons (Sea) Convention, 1921 C019 - Equality of Treatment (Accident Compensation) Convention, 1925 C018 - Workmen's Compensation (Occupational Diseases) Convention, 1925 C032 - Protection against Accidents (Dockers) Convention (Revised), 1932 C042 - Workmen's Compensation (Occupational Diseases) Convention (Revised), 1934 C045 - Underground Work (Women) Convention, 1935 C089 - Night Work (Women) Convention (Revised), 1948 C090 - Night Work of Young Persons (Industry) Convention (Revised), 1948 C115 - Radiation Protection Convention, 1960 C123 - Minimum Age (Underground Work) Convention, 1965 C136 - Benzene Convention, 1971 C174 - Prevention of Major Industrial Accidents Convention, 1993
REPUBLIC OF CHINA	**Policies**	In January 2004, the State Council issued the Decision on Further Strengthening Work Safety.
	Occupational Health Legislation	Regulations on Work Injury Insurance, April 16, 2003. The Constitution of the People's Republic of China, 1982 Decision of the Standing Committee of the National People's Congress on Amending the Law of the People's Republic of China on the Prevention and Control of Occupational Diseases (2011). Work Safety Law of the People's Republic of China (2009 Amendment). Labour Law of the People's Republic of China, January 1995. Law of the People's Republic of China on Safety in Mines, May 1993. Law of the People's Republic of China on Work Safety (Presidential Order No.70 of 2002). Law of the People's Republic of China on Prevention and Control of Occupational Diseases (Order of the President No.60). Law on Occupational Illness Prevention and Control, amended on Dec. 31, 2011 Provisions on Reporting and Handling of Fatal Accidents and Injuries of Workers and Staff in Enterprises. Decision of the State Council on Further Strengthening Environmental Protection Work. Provisions on Occupational Safety and Health Information (For Trial Implementation), 1990.

		Additional Regulations for Assessment of Production Safety in Upgrading of Enterprises Lao An Zi (1989) No. 5 Regulations for Testing & Inspection of Occupational Safety and Health Bodies Lao An Ju Zi (1989) No. 4 Regulation for Administration of Publicity and Education Centres for Occupational Safety and Health (Labour Protection). Provisional Regulations of the Discipline Inspection Commission of the Communist Party of China Central Committee on Disciplining Leading Cadres holding Party Membership involved in Serious Dereliction of Duty as a Result of Bureaucracy. Rules on the Strengthening of Labour Protection in Rural Enterprises Employees' Compensation (Amendment) Regulation 1992 (L.N. 264 of 1992) Gas Safety Ordinance 1990. No. 49. Employees' Compensation Ordinance (Amendment of Second Schedule) Order 1987. L.N. 52. Construction Sites (Safety) Regulations 1978. L.N. 159. Factories and Industrial Undertakings (Noise at Work) Regulation (L.N. 239 of 1992), Amendment Ordinance 1989. No. 71, Safety Officers and Safety Supervisors Regulations 1986. Legal Notice 256 of 1986. Amendment Ordinance 1985, Fire Precautions in Notifiable Workplaces Regulations (L.N. 214 of 1981), Protection of Eyes Regulations (L.N. 110 of 1977). Factories and Industrial Undertakings (Amendment) Regulations 1975. Legal Notice 7 of 1975., Blasting by Abrasives Special Regulations (L.N. 35 of 1969), First Aid in Notifiable Workplaces Regulations (L.N. 85 of 1968), Notification of Occupational Diseases Regulations (L.N. 39 of 1965),Factories and Industrial Undertakings Regulations (Cap 59A) (G.N.A. 103) and Ordinance (Chapter 59) (No. 34 of 1955).
	Govt. Dept. overseeing OH	Ministry of Labour National People's Congress (NPC) State Council Work Safety Committee of the State Council oversees the health and safety administration of the various Ministries viz. State Administration of Work (SAWS), Ministry of Housing and Urban-Rural Development, Ministry of Water Resources, Ministry of Industry and Information etc.
	Key OH Concerns	Prone to multiple work safety accidents and a large number has occurred nationwide. Pneumoconiosis, Poisoning, Musculoskeletal diseases, Occupational Mental illness caused by job stress, and Occupational allergic diseases have gradually increased.
	Registered OHP's	4986 Doctors qualified to diagnose occupational diseases (2010) 70 000 Nursing members of CAN (OH nurses not specified)
	Occ. Health and Safety Agencies	Chinese Centre for Disease Control and Prevention (CCDC) Institute of Occupational Health and Poisoning Control (IOHPC) National Centre for Occupational Disease Prevention and Treatment (NCODPT) China Medical Board (CMB) Institute of Health Inspection CMB China Nursing Network (CCNN) Chinese Nursing Association (CNA) The China Occupational Safety and Health Association (COSHA) China Science & Technology Association

		Asia Pacific Occupational Safety & Health Organization (APOSHO).
		Bureau of Inspection of Occupational Safety and Health Standardization Administration of China (SAC)
		National Certification Guidance Committee, Approval Committee and Registration Committee established in July 2000.
		Certification and Accreditation Administration of the People's Republic of China (CNCA).
		By 2011 there were 75 Occupational Safety and Health Management System Standard (GB/T28001-2001) certification agencies with 7 560 certified auditors, which issued 33 296 certificates.
		China Academy of Safety Science and Technology (CASST)
		China Coal Research Institute (CCRI)
		Work Safety Research Institutions (19 local institutes)
		State Laboratories (4 national professional centres and 31 laboratories)
		China Association of Work Safety (CAWS)
		Some provinces and cities have established their own work safety associations or occupational safety and health associations.
		The ILO-CIS National Centre for China is under the leadership of CASST.
		The China Enterprises Confederation (CEC) is a national non–governmental organization has actively participated in drafting OSH policies, legislative consultation and research.
		The All -China Federation of Trade Unions (ACFTU).
		120 dedicated stations across the country to monitor occupational diseases.
	ILO OH related Conventions in force (15)	C155 - Occupational Safety and Health Convention, 1981 (No. 155) - 25 Jan 2007
		C167 - Safety and Health in Construction Convention, 1988 (No. 167)
		C170 - Chemicals Convention, 1990 (No. 170)
		C182 - Worst Forms of Child Labour Convention, 1999 (No. 182) - 08 Aug 2002
		C138 - Minimum Age Convention, 1973 (No. 138)
		C016 - Medical Examination of Young Persons (Sea) Convention, 1921 (No. 16)
		C019 - Equality of Treatment (Accident Compensation) Convention, 1925 (No. 19)
		C032 - Protection against Accidents (Dockers) Convention (Revised), 1932 (No. 32)
		C045 - Underground Work (Women) Convention, 1935 (No. 45)
		C027 - Marking of Weight (Packages Transported by Vessels) Convention, 1929
		C014 - Weekly Rest (Industry) Convention, 1921
		C07 - Minimum Age (Sea) Convention, 1920
		C015 - Minimum Age (Trimmers and Stokers) Convention, 1921
		C144 - Tripartite Consultation (International Labour Standards) Convention, 1976
		C059 - Minimum Age (Industry) Convention (Revised), 1937
REPUBLIC OF SOUTH AFRICA	**Policies**	South Africa Strategic Agenda, 2009-2014 - Statistics South Africa
		Green Paper - National Health Insurance In South Africa, 12 August 2011 section 20 subsection 154.
		National Health Amendment Bill (Bill 2 of 2011) section 83 deals with Environmental Health and introduces the Office of Health Standards Compliance.
		Charter of Fundamental Social Rights in SADC

	Occupational Health Legislation	Occupational Health and Safety Act 85 of 1993 Compensation for Occupational Injuries and Diseases Act of 1993 (COIDA), Occupational Diseases in Mines and Works Act of 1973 (ODMWA), Hazardous Substances Act of 1973 (HSA), Basic Conditions of Employment Act, Labour Relations Act (LRA) of 1995 National Environmental Management Act (NEMA) of 1998 Promotion of Access to Information Act No. 2 of 2000 – Section 68(2) Protected Disclosures Act No.26 of 2000
	Govt. Dept. overseeing OH	Department of Labour Department of Health Department of Minerals and Energy
	Key OH Concerns	Traumatic injury, Respiratory disease, Occupational dermatitis and Musculoskeletal injury, Asthmatic disorders, Psychological stress, Musculoskeletal problems, Noise Induced Hearing Loss (NIHL)
	Registered OHP's	Environmental Health Practitioner (3197), Environmental Health Assistants (58), Occupational Health Medical Practitioners (>400), Occupational Health Nurse Practitioners (>1000), Occupational Hygienists (157), Occupational Hygiene Assistants (387), Occupational Hygiene Technologists (130), Authorized Inspection Authorities (49)
	Occ. Health and Safety Agencies	South African National Standards (SANS) / South African Bureau of Standards (SABS) Occupational Health Southern Africa (OHSA) South African Institute of Occupational Safety and Health (SAIOSH) National Institute of Occupational Health (NIOH) Health Professions Council of South Africa (HPCSA) South African Nursing Council (SANC) South African Society of Occupational Health Medicine (SASOM) South African Society of Occupational Health Nurses (SASOHN) Chief Directorate: OHS The Compensation Commissioner Rehabilitation Units Southern African Institute for Occupational Hygiene (SAIOH) The Mine Medical Professionals' Association (MMPA) The Medical Bureau of Occupational Diseases (MBOD) The National Centre for Occupational Health (NCOH) The Compensation Commissioner for Occupational Diseases The Epidemiology Research Unit (ERU) Environmental Health Officers (local authority level) The Mine Safety and Health Inspectorate Safety in Mines Research Advisory Committee Institute of Safety Management (ISM) The Council for Nuclear Safety International Commission on Occupational Health (ICOH) International Labour Organization World Health Organization (WHO)
	ILO OH related Conventions in force (8)	C155 - Occupational Safety and Health Convention, 1981 C176 - Safety and Health in Mines Convention, 1995 C138 - Minimum Age Convention, 1973 C182 - Worst Forms of Child Labour Convention, 1999 C019 - Equality of Treatment (Accident Compensation) Convention, 1925 C042 - Workmen's Compensation (Occupational Diseases) Convention (Revised), 1934

| | | C045 - Underground Work (Women) Convention, 1935 |
| | | C089 - Night Work (Women) Convention (Revised), 1948 |

MEXICO	Policies	None listed on ILO website
	Occupational Health Legislation	Article 123 of the Political Constitution of the United States of Mexico Ley Federal del Trabajo (National Labour Law) Ley de los Trabajadores al Serviciodel Estado (State Workers Law) Reglamento Federal de Seguridad, Higiene, Medio Ambiente de Trabajo (National Safety, Hygiene and Occupational Environment Law) Ley del Seguro Social (Social Security Law)
	Govt. Dept. overseeing OH	Secretaría del Trabajo y Previsión Social (Mexican Work and Social Security Secretariat) government agency establishing and enforcing OH norms. Instituto Mexicano del Seguro Social (Mexican Institute of Social Security) provides medical, economic, and social services to private-sector workers. Instituto de Seguridad y Servicios Sociales para los Trabajadores del Estado (Institute of Security and Social Services for State Workers)
	Key OH Concerns	Hearing loss, chemical bronchitis, pneumoconiosis dermatitis and musculoskeletal injuries. In 2004 national totals for Occupational accidents (282,469), Permanent disabilities (11,916), OA Fatalities (1,069)
	Registered OHP's	699 Occupational Medicine Specialists (2005) 1,000 professionals trained in other industrial health specialties 1,600 physicians were certified and received a national license in OM (1999-2001) 9,000–12,000 physicians work in private-sector enterprises, the majority has no training in OM.
	Occ. Health and Safety Agencies	Secretaría de Educación Pública (Mexican Public Education Secretariat) The Consejo Mexicano de Medicina del Trabajo (The Mexican Board of Occupational Medicine). Consejo Mexicano de Profesionales Certificados en Administración de Riesgos (Mexican Board of Certified Risk Administration Professionals) certifies professionals responsible for workplace safety and hygiene. 32 or more societies or associations in the different OH fields Over 20 professional associations throughout the country that promote academic activities among their members. Consejo Nacional de Ciencia y Tecnología (National Board of Science and Technology). National Institute for Occupational Safety and Health (NIOSH)
	ILO OH related Conventions in force (70)	C155 - Occupational Safety and Health Convention, 1981 (No.155), Feb1984 C161 - Occupational Health Services Convention, 1985 (No.161) Feb 1987 C167 - Safety & Health in Construction Convention,1988 (No.167) Oct 1990 C170 - Chemicals Convention, 1990 (No.170) 17 Sep 1992 C011 - Right of Association (Agriculture) Convention, 1921 C087 - Freedom of Association and Protection of the Right to Organise Convention, 1948 C135 - Workers' Representatives Convention, 1971 C141 - Rural Workers' Organisations Convention, 1975 C029 - Forced Labour Convention, 1930 (No. 29) 12 May 1934 C105 - Abolition of Forced Labour Convention, 1957 C090 - Night Work of Young Persons (Industry) Convention, 1948

C123 - Minimum Age (Underground Work) Convention, 1965.
Minimum age specified: 16 years
C124 - Medical Examination of Young Persons (Underground Work) Convention, 1965
C182 - Worst Forms of Child Labour Convention, 1999
C100 - Equal Remuneration Convention, 1951
C111 - Discrimination (Employment and Occupation) Convention, 1958
C144 - Tripartite Consultation (International Labour Standards), 1976
C150 - Labour Administration Convention, 1978
C160 - Labour Statistics Convention, 1985
C096 - Fee-Charging Employment Agencies Convention (Revised), 1949
C159 - Vocational Rehabilitation and Employment (Disabled Persons) Convention, 1983 (No. 159) 05 Apr 2001
C140 - Paid Educational Leave Convention, 1974
C142 - Human Resources Development Convention, 1975
C026 - Minimum Wage-Fixing Machinery Convention,1928,12/05/1934
C095 - Protection of Wages Convention, 1949
C099 - Minimum Wage Fixing Machinery (Agriculture) Convention, 1951
C131 - Minimum Wage Fixing Convention, 1970 (No. 131) 18 Apr
C173 - Protection of Workers' Claims (Employer's Insolvency) 1992
C014 - Weekly Rest (Industry) Convention, 1921
C030 - Hours of Work (Commerce and Offices) Convention, 1930
C052 - Holidays with Pay Convention, 1936 (No. 52) 09 Mar 1938
C106 - Weekly Rest (Commerce and Offices) Convention, 1957
C153 - Hours of Work and Rest Periods (Road Transport) Convention, 1979
C013 - White Lead (Painting) Convention, 1921 (No. 13) 07 Jan 1938
C045 - Underground Work (Women) Convention, 1935 (No. 45) 21 Feb 1938
C115 - Radiation Protection Convention, 1960 (No. 115) 19 Oct 1983
C120 - Hygiene (Commerce & Offices) Convention, 1964 (No.120),Jun.1968
C012 - Workmen's Compensation (Agriculture)Convention,1921(No.12) 1937
C017 - Workmen's Compensation (Accidents) Convention,1925 (No.17) 1934
C019 - Equality of Treatment (Accident Compensation) Convention(No. 19)
C042 - Workmen's Compensation (Occupational Diseases) Convention (Revised), 1934 (No. 42) 20 May 1937
C102 - Social Security (Minimum Standards) Convention, 1952 (No. 102) 12 Oct 1961
C118 - Equality of Treatment (Social Security) Convention, 1962 (No. 118) 06 Jan 1978
C008 - Unemployment Indemnity (Shipwreck) Convention, 1920 (No.8) 1937
C009 - Placing of Seamen Convention, 1920 (No. 9) 01 Sep 1939
C016 - Medical Examination of Young Persons (Sea)Convention, 921(No.16)
C022 - Seamen's Articles of Agreement Convention, 1926 (No. 22) May 1934

		C053 - Officers' Competency Certificates Convention, 1936 (No. 53) 1939
		C055 – Ship owners' Liability (Sick and Injured Seamen) Convention, 1936 (No. 55) 15 Sep 1939
		C056 - Sickness Insurance (Sea) Convention, 1936 (No. 56) 01 Feb 1984 C058 - Minimum Age (Sea) Convention (Revised), 1936 (No. 58) 18 Jul 1952
		C108 - Seafarers' Identity Documents Convention, 1958 (No. 108) Sep 1961
		C134 - Prevention of Accidents (Seafarers) Convention, 1970 (No. 134) 1974
		C163 - Seafarers' Welfare Convention, 1987 (No. 163) 05 Oct 1990
		C164 - Health Protection and Medical Care (Seafarers) Convention, 1987 (No. 164) 05 Oct 1990
		C166 - Repatriation of Seafarers Convention (Revised), 1987 (No. 166) 05 Oct 1990
		C112 - Minimum Age (Fishermen) Convention, 1959 (No. 112) 09 Aug 1961
		C027 - Marking of Weight (Packages Transported by Vessels) Convention, 1929 (No. 27) 12 May 1934
		C152 - Occupational Safety and Health (Dock Work) Convention, 1979 (No. 152) 10 Feb 1982
		C169 - Indigenous and Tribal Peoples Convention, 1989 (No. 169) Sep 1990
		C110 - Plantations Convention, 1958 (No. 110) 20 Jun 1960
		C172 - Working Conditions (Hotels and Restaurants) Convention, 1991 (No. 172) 07 Jun 1993
		C080 - Final Articles Revision Convention, 1946 (No. 80) 20 Apr 1948
		C116 - Final Articles Revision Convention, 1961 (No. 116)

2.3.3   African Continent

2.3.3.1 Sub-Saharan Africa (SADC)

Geographically 47 countries on the African continent form part of the Sub-Saharan (SSA) region located south of the Sahara Desert. Fourteen of these countries form the Southern African Development Community (SADC) and will be discussed as a subset reflecting the major occupational health and safety issues pertaining to SSA (Naidoo, Jeebhay, Robins, Myers, Nogueira & Zeleznik, 2006). In Sub-Saharan Africa (SSA) the prevalent occupational health concerns are a replication of the same difficulties experienced by BICSAM as listed in Table 2.3. The majority of SSA countries have implemented statutory rights to benefit and make use of social insurance as employment injury coverage (ILO SafeWork, 2013). The occupational health and safety needs in SADC countries have largely remained unchanged since the report on Work and Health in Southern Africa programme findings (WAHSA, 2004-2008). This stasis could be attributed to the lack of evidence to support activities to implement detailed policy driven occupational health and safety programmes. The integration of OHS into public health services has not yet been assessed as it currently is in the developmental stage (African Newsletter, 2009). Information on the OHS situation in all trades and industries is largely unknown (Forjuoh, Zwi & Mock, 1998). Research initiatives

appear to be focused in sectors with the most publicized fatalities and the consequent discoveries come across as being reactionary rather than stimulating a proactive approach to promotion and prevention of injuries and diseases as discussed by Lund & Marriott (2011). Rapid assessment procedures (RAP) have been studied and found beneficial to identify problems requiring targeted interventions (Klevens & Anderson, 2004). RAP may assist in directing training to the most needed areas however the training of professionals remains an undeveloped aim (African Newsletter, 2009). Evidence of the fulfilment of plans to dedicate occupational health and safety resources to the informal sector has not yet manifested (African Newsletter, 2009). The access to information, management, rehabilitation and social security of workers with occupational injuries and diseases remains partial to workers employed in organizations equipped to provide private OHS services (African Newsletter, 2009). Public media resources are rarely incorporated in strategies to raise public awareness of workers' rights to occupational health and safety (Forjuoh and Gyebi-Ofosu, 1993; WAHSA, 2004-2008). These unaddressed needs have a collective negative impact on the capacity to deliver, enforce, monitor and develop OHS services in SSA (Lund & Marriott, 2011).

2.3.3.2 South Africa

Prior to 2014 South Africa contributed the largest proportion of the regions GDP (gross domestic product) which gave the country leverage to present the concerns of the southern parts of the African continent at global trade agreement platforms (Naidoo et al., 2006). The South African Quarterly Labour Force Survey (QLFS, 2013) indicates that the labour force has experienced more growth in limited duration workers (contracts) than in unspecified duration workers (permanent). This subset of vulnerable workers is similar to the migrant workers in developed countries who may endure extreme negative implications if their needs and working conditions are not considered in amendments to occupational health and safety policies and regulatory frameworks as suggested by Webster, Benya, Dilata, Joynt, Ngoepe & Tsoeu (2008; Cohen & Moodley, 2012). The recent South African health review document highlighted concerns in known high risk work settings such as healthcare and mines (Gray, Vawda & Jack, 2013). The risk rating of hazardous industries may soon be matched by the rapidly growing informal sector which seems to have spawned a concession between more work opportunities and decent jobs despite the unassessed risk factors in this burgeoning sector (Cohen & Moodley, 2012). Forjuoh and Gyebi-Ofosu (1993) suggest initiating programs to identify specific injury problems unique to each area in order to prevent and control the high prevalence of injuries in developing countries. The most recent available workplace injury statistics for the South African workforce is data collated for 1998; this information is not comprehensive and does not include occupational disease statistics (Department of Labour Statistics Report, 1999). Effective measures for the status of

occupational health in South Africa are difficult to obtain amidst the challenge of data inaccuracy due to the under reporting of occupational injuries and diseases (Loewenson, 2001; Lund & Marriott, 2011). Despite challenges in implementing and enforcing occupational health and safety legislation the ILO SafeWorks (2013) reports that South Africa is the only SSA country consistently adjusting employee injury insurance scheme allocations in line with the consumer price index. The Department of Labour has slowly begun introducing various amendments in legislation pertaining to occupational health (DOL Annual Report, 2013). These proposed changes are focused at legislation guiding services to injured and diseased workers (COID Act) and promotes the development of frameworks to advance vocational reintegration in the form of rehabilitation and return-to-work policies (DOL Annual Report, 2013). The provisions of the OHS Act obliging employers to create a health and safe working environment has endured accusations of nebulousness and has therefore been amended to address these shortcomings. The proposals require employers to develop and implement a health and safety management system and suggest the increase of relevant penalties to be issued to noncompliant employers (DOL Annual Report, 2013). The amendments advise that inspectors will be empowered to issue prescribed spot fines (DOL Annual Report, 2013). These programmes have yet to be formalised and imposed therefore the effect of these propositions may only be deliberated in future studies. Data is not available on the number of employers registered with the Compensation Fund, however the Unemployment Insurance Fund (UIF) registry indicates that over 1,4 million employers registered to the fund in 2013 (DOL Annual Report, 2013). In the same year the Compensation Fund registered 201 724 claims for compensation and paid out over R9 million (DOL Annual Report, 2013). The Dept. of Labour inspected compliance levels of 101 792 workplaces and reports that nearly half of these worksites did not comply with relevant legislation (DOL Annual Report, 2013). Only 45 of the 70 available Inspection and Enforcement Services posts have been filled (DOL Annual Report, 2013). The difficulties in operationalizing the proposed changes appear enormous when reviewing the aforementioned fragile performance measures and resource constraints as documented in the Dept. of Labour annual report (DOL Annual Report, 2013). Government Ministries operate in a fragmented instead of a collaborative system and are therefore ill equipped to develop the infrastructure to cope with the multisectoral task requirements needed for the effective implementation of the OHS framework put forward by the ILO (WHO Good Practice in Occupational Health Services, 2002).

2.3.3.3 Western Cape

The provision of occupational health and safety services in the City of Cape Town (CoCT) will offer a snapshot of OHS implementation in the Western Cape. Acts and omissions here will serve as an indication of what to expect in other locations in the Western Cape. The

assumption being that if these services are absent in the CoCT that it is highly unlikely to be delivered elsewhere in the province. The Mother City (CoCT) is celebrated for being a well-run city and is an in-migration destination of choice (CoGTA, 2009). Stronger infrastructure, better service delivery and the hopes of better job opportunities are believed to contribute to the population growth (CoGTA, 2009). By 2030 the City's population is projected to increase to 4.25 million (IDP, 2012/2013). This rapid growth is straining the City infrastructure which shows noticeable signs of struggle (IDP, 2012/2013). The growth of the informal sector corresponds with the increasing population and is a growing unregulated sector in the local labour market (CoGTA, 2009; IDP, 2012/2013). Workers in the informal sector are at an increased vulnerability to workplace risk factors due to on-going protraction and a lack of consensus of attempts to find a workable solution to the regulation versus deregulation debate (Willemse, 2011). Regulatory frameworks in force offer little evidence to suggest that the occupational health and safety of workers engaged in this sector has been deliberated (Webster et al., 2008).

In the Western Cape primary health care services are provided at 337 facilities, of these 42% are located in Cape Town (Western Cape Govt., 2014). The CoCT Integrated Development Plan (IDP) outlines five pillars that form a strategy for sustainable development (IDP, 2012/2013). None of the pillars discuss measures to facilitate the integration of occupational health and safety in the public health primary healthcare strategy (IDP, 2012/2013). This discrepancy may indicate that the transfer of decisions on the national level is not effectively communicated to local level officials (COGTA, 2009, p.4; GOHNET, 2013:5). Zoller (2003) found the ineffective or non-existent communication of organization policy to be a problem in the automotive industry. This issue appears to be pervasive and presents a challenge within industries regardless of the employment sector (Forjuoh et al., 1998; Goetzel, Roemer, Liss-Levinson & Samoly, 2008). The IDP's expression of caring and safety encompasses mainly policing and environmental strategies which is a somewhat exclusionary approach which may deny those most in need of occupational health services from accessing these limited resources (IDP, 2012/2013). The Western Cape Government website advertises the offer of occupational health services at all health facilities whilst personal communication confirms that these services are not available via the public health system (City Health Directorate Environmental Health, email correspondence on March 28, 2014). There is presently no data available to measure the provision of occupational health and safety services by province or to determine which employers in certain sectors are using private occupational health and safety services (OHSs) in the Western Cape.

2.4 NATIONAL OH SERVICE PROVISION FOR EDUCATION

2.4.1 Provision of Occupational Health in HEIs

Occupational health at HEIs has received more attention in developed European, American and Scandinavian countries (Faller, Mikolajczyk, Akmatov, Meier & Kramer, 2009). Conversely, less developed countries provide little to no attention to the provision of occupational health services at HEIs. Most studies in developing countries focus on curriculum change, governance and transformation (Gazzalo & Didriksson, 2008). Insufficient awareness of hazards in this sector may drive the perception that it has low to no risks (HSE Occupational services in higher and further education, 2006). Venables & Allender (2006) conducted one of the most recent studies which raise awareness of the occupational health and safety needs at Higher Education institutions in the UK. This study predicted that higher education institutions in other countries will experience similar challenges to those highlighted in their study (Venables & Allender, 2006). The occupational injuries and diseases discussed by the Venables & Allender study (2006) resemble the conditions experienced by the general workforce in BICSAM countries. This finding provides credence to the initial hypothesis that risks at HEIs (training or learning settings) are consistent with hazards in general industry (practical work setting). The higher education sector has a wide range of hazards and a vast corpus of contacts (students, visitors, employees) therefore the potential for occupational risk exposure is likely to be higher than in other sectors (Venables & Allender, 2006). In comparison with other sectors higher education has the largest number of personnel, with more than 2.8 million people in the UK, which includes staff and students (Venables & Allender, 2006). Table 2.4 provides a brief indication of other countries having similar large numbers of personnel and students forming part of the higher education landscape.

Table 2.4: Higher Education personnel in highest GDP countries per Continent

Continent	Country	HEIs	Staff	Students	Total (Staff + Students)
Europe	United Kingdom (UK)	163	566,115	2 340,275	2 906,390
	Germany	415	337,100	2 556,000	2 893,100
Americas	North America	7,500	2 6000,000	21 800,000	21 814,756
	South America	1,500	1 249,000	12 000,000	13 249,000
Asia	China	6,305	1,295,200	50 800,000	52 095,000
	India	33,682	820,000	17 000,000	17 820,000
Africa	Nigeria	514	37,504	1 700,000	1 737,504
	South Africa	191	120,592	892,925	1 013,517

In Germany student accidental injuries are considered as reportable occupational injuries (Faller et al., 2009). This practice is not shared in South Africa where HEI students are not regarded as employees, and are not covered under the provisions of the COID Act (COID Act 130, 1993, chapter 1). Only one HEI in the Western Cape had information available on how student injuries or damages are covered under specific terms and conditions stipulated in the general rules handbook (UCT General Rules & Policies). The American College Health Association National College Health Assessment (2005) found that only 13% of HEI students reported receiving injury prevention and safety information. Venables & Allender (2006) make a compelling argument for including students in the number of personnel working at HEIs by stating that "postgraduate students work in the same workplaces as employees and are subject to the same hazards". This fact should encourage HEIs to present occupational health and safety promotion and prevention initiatives to its corpus of contacts regardless of their categorization as staff, students or visitors. A study at an American HEI found a general health education course to be an effective intervention to address high risk behaviour (Becker, Johnson, Vail-Smith, Maahs-Fladung, Tavasso, Elmore & Blumell, 2008). The fore mentioned intervention was used to address personal health however a similar approach can be utilized to promote progressive occupational health and safety behaviour as a mode of injury prevention (Aunger & Curtis, 2007). Wechsler, Lee, Kuo & Lee (2000) caution that educational programmes alone cannot be expected to bring about widespread changes in specific risk behaviours. The researchers advocate a collaborative and integrated approach to bring about the desired outcomes (Wechsler et al., 2008). In developing countries the past decade has not heralded progress in dealing with the occupational health challenges highlighted by Nuwayhid (2004). Lax policy implementation, insufficient regulatory enforcement, poor government and organizational support of occupational initiatives, lack of data and poor data collection systems have been identified as challenges in developing countries (Nuwayhid, 2004). These issues remain unchanged and are likely to be mirrored at HEI. Five of the twenty-three HEIs in South Africa are located in the Western Cape (CHET, 2000-2008) and occupational health services are presently implemented at only two of the five institutions (email and telephonic queries). At South African HEIs the implementation of OHS tends to favour outdated prescriptive approaches. The ILO Training Package on Development of a National Programme of Occupational Safety and Health (2012) advises against imposing large numbers of specific legislative compliance obligations, however HEIs continue emphasising compliance with specific protective measures to address specific hazards, rather than adopting the recommended holistic, prevention-oriented approach to OHS.

2.4.2 Occupational Health in Higher Education Curriculum

Globally occupational health and safety training courses are widely offered at most HEIs. The course offerings have different terminology however a study by Marshall & Mackey (1995) confirms that the course content display similarities. An online search of major HEIs revealed that training to cover the full range of qualifications required to qualify in any of the professions forming part of the Occupational Health field are offered in many countries (European Agency for Security and Health at Work, 2010). However doctoral level studies in specialist occupational health fields are more readily available in developed countries than in developing countries (ILO Encyclopaedia of Occupational Health and Safety, 2011). The CHE (HE Monitor no.7, 2009) reports that enrolments have increased in the health sciences; however developing countries offer little opportunity for on-going development via online or distance education to assist full time workers in pursuing part time studies (ILO Encyclopaedia of Occupational Health and Safety, 2011). Over the past decades workplace settings and practices have transformed; highlighting the need for HEIs to respond to these changes (Mellish, 1980; De Weert, 2011). Germany has initiated a dual system differing from the systems in the UK, Sweden, USA and Australia (Dustmann & Van Soest, 1997; De Weert, 2011). The newer approaches incorporate a mixture of general and vocational approaches. These reforms have restructured courses to enable students to engage in more practical applications of theory in the work setting (De Weert, 2011). Recommendations for adjusting curricula have been in response to the needs of students and industry (De Weert, 2011). The vocational education approach with the heavy emphasis on practical work places learners at increased exposure to occupational risks; however the management and accountability for the occupational health and safety implications in the learning setting is not explicitly stated. The benefits of this approach have been reported by the OECD education at a glance profile (2013) which indicates that vocational study participants in Germany are higher educated than their general education counterparts and have a lower unemployment rate. The true benefits can only be accurately reflected when compared against the costs or losses experienced in occupational injuries of students who participated in this changed HE curriculum. The European Agency for Security and Health at Work (2010) provides evidence of OHS integration into mainstream education in European HEIs. However there is little evidence to suggest that similar trends have emerged in the changing curriculum at HEIs in Africa. No data is available to determine whether OHS mainstream curriculum integrations has occurred in HEIs in the Western Cape or if these integrations include injury prevention and management strategies.

2.5 TRAINING OF OCCUPATIONAL HEALTH NURSES

The WHO recognizes that occupational health nursing education is a code of life-long learning offered at the post basic level of training (WHO Europe, 2001). Occupational Health

Nursing is globally recognized as a specialist qualification however requirements for nurses to provide this specialist service differ by country (WHO Europe, 2001; Bigaignon-Cantineau, Gonzalez, Broessel, Denu, Hamzaoui & Cantineau, 2005). Chapter 10 of the WHO (2001) document describes the role of the occupational health nurse in Europe and provides a comprehensive description of occupational health nursing education in Europe and elsewhere. The Scientific Committee on Occupational Health Nursing (SCOHN) reports that changes over the past four decades includes the increasing independent work of some occupational health nurses; national legislation authorizing professional training for practicing occupational health nurses and laws that support the professional practice of occupational health nursing (Burgel, Camp & Lepping, 2005). These changes brought about transformation in European and other developing countries where nursing contributions have been strongly influenced by industrial development, regulatory infrastructure and available resources to maintain or improve the health of the workforce (Burgel et al., 2005). In developing countries slower progression has hampered the transformation of occupational health nursing education (DoH National Strategic Plan for Nurse Education, Training and Practice, 2012/13-2016/17). Mellish's hopes for developments in South African occupational health nursing have not occurred at the anticipated pace and 41 years after the Erasmus Commission, the field remains plagued with sluggish progression and limited course offerings (Mellish, 1980). The ageing nursing workforce and limited access to on-going training and development opportunities are barriers in general nursing which aggravates existing challenges experienced in the OH nursing field (Wildschut & Mqolozana, 2008; Ward et al., 2011). These challenges contribute to registered nurse shortages experienced in most countries and projections indicate that this scenario will worsen in the next decade (Ward, Beaton, Bruck & de Castro, 2011). Nurse shortages are a global phenomenon not being stymied by staff retention and new student recruitment strategies (Wildschut & Mqolozana, 2008). The South African Nursing Council is the regulatory body overseeing all education and professional practice requirements of nursing in South Africa since 1944 (SANC online, 2014). This independent statutory body was initially established under the Nursing Act of 1944 (Act No. 45 of 1944), and currently functions under the Nursing Act of 2005 (Act No. 33 of 2005). Circular 3 of 2009 provides a framework based on the decision taken by the South African Nursing Council (SANC) to implement new nursing qualifications registered on the National Qualifications Framework (NQF) and served to inform stakeholders of the phasing out of legacy qualifications (SANC, 2014). The introduction of new nursing qualifications under the 14th Nursing Council was an unsettling period in nursing education in South Africa. Uncertainty about the validity of qualifications, the impacts of phasing out legacy qualifications and the poor timing of courses to meet supply and demand for newly accredited qualifications have contributed to the sense of instability (National Strategic Plan for Nurse Education, Training and Practice 2012/13-2016/17). A disjuncture between the

restructuring of the HE regulatory framework and SANCs preparedness for the adjustments to nursing education has resulted in fears of the OH Nursing certificate becoming invalid and the professional implications for nurses in possession of the now outdated legacy nursing qualifications (National Strategic Plan for Nurse Education, Training and Practice 2012/13 - 2016/17). Communication between SANC and the South African Society of Occupational Health Nurses (SASOHN, 24 August 2011) helped to clarify that although the OH Nursing certificate is no longer being offered; those in possession of this certificate may still operate as Occupational Health Nurses. The OHS Act (85 of 1993 section 1) stipulates that a nurse functioning as an Occupational Health Practitioner is required to comply with the accredited advanced nursing qualification framework determined by SANC. This communication raises a point requiring disambiguation as it denotes that a distinction exists between the Occupational Health Nurse and the Occupational Health Practitioner which is not clearly defined in any available SANC or other documents (Bigaignon-Cantineau et al., 2005). If this distinction is legitimate, then it indicates an area of oversight which may bear consequences in the operationalization of occupational health services. The status quo places many experienced and highly skilled OH nurses in a precarious position while this scenario unfolds. The new education framework can only be assessed after June 2015 when the legacy qualification extension deadline has ended (SANC Circular No. 7, 2012). The feasibility and effectiveness of the proposed changes can only be evaluated and improved as needed after the proposals have been implemented, monitored and evaluated. Imparato, Urbana & Ruster (World Bank, 1999) provide sage advice when stating that "before moving on to the project implementation cycle, it is essential to have a reliable monitoring and evaluation setup firmly in place". Heeding this advice will ensure that the responsibilities for data collection, processing, storage and good indicators will be clearly defined from the outset so that resources are not wasted (WHO Collaborating Centres in Occupational Health, 11-14 October 1994).

Table 2.5 provides information on the landscape in the current Nursing Education structure and can be used to gauge whether the human resources in health (HRH) are sufficient to address the crisis in Nursing Higher Education. Wildschut and Mqolozana (2008) confirm the local and national nursing shortages experienced in South Africa. The report is very informative but omits information critical to the realization of the long term goal, whether there is sufficient suitably qualified Nursing Educators to resource the envisioned increase in nursing education (DoH National Strategic Plan for Nurse Education, Training and Practice, 2012/13 - 2016/17). This concern is especially notable when considering the need for Nursing Educators to provide training to meet the demand for specialist nurses.

Table 2.5: SANC new nursing qualifications

Qualification	National Qualifications Framework	Number on SANC Register	Types of Accredited Institutions		Number of Nursing Educators	
National Certificate: Auxiliary Nursing.	Level 3	67 895	Education Centres	51	-	-
National Diploma: Nursing	Level 6	63 788	Nursing Schools	120	-	-
Bachelor of Nursing	Level 7	125 935	Nursing Colleges	59	-	-
Masters Certificate: Nursing (16 electives)	Level 8	3080	Universities	11	-	-
Master's Degree: Nursing (17 electives)	Level 9					
Total		**260 697**	**4**	**241**	**12 400**	

2.6   ROLES OF OCCUPATIONAL HEALTH NURSES

The general consensus is that the role of occupational health services should be preventive (Alli, 2008). Guidelines formulated by the ILO and WHO have helped to provide a clearer definition of the role of occupational health nurses and a framework for the provision of OH services (Occupational Safety and Health Series No. 72, 1998). The WHO (2001) states that the role of the occupational health nurse is multifaceted and includes interrelated and complimentary functions to effectively manage occupational health services. The WHO has summarized the specific responsibilities of an OH nurse which includes and is not limited to the role of a clinician, health educator, counsellor, specialist, manager, co-ordinator, adviser and researcher (WHO, 2001). The WHO (2001) and Bigaignon-Cantineau et al. (2005) concur that countries deliver occupational health services in dissimilar ways however the functions of OH nursing professionals are largely identical. These similarities may be attributed to ratifications of ILO and WHO conventions by member countries and the experience of similar occupational injuries and diseases. Lack of commitment regarding the training of occupational health nurses is still concerning, especially in light of evidence that a wider array of activities are practiced by occupational health nurses in countries where specialist education is accessible (Bigaignon-Cantineau et al., 2005). The OH nurse has direct access to workers and often becomes the link between management and staff in processes to resolve occupational health and safety matters. The OH nurse has an advisory role when engaging with medical problems which affect fitness to work and absenteeism. OH professionals are cautioned against involvement in the administrative management and control of sickness absence, however Alli (2008) acquiesces that the provision of advice on medical aspects of sickness is acceptable as long as medical confidentiality is upheld. The SANC (April 2013) document on the Competencies for OH Nursing Specialists states that the OH nurse "…focuses on the relationship between work, the work environment and the

worker's health…thereby influencing the health of the organisation. This approach is holistic in that it focuses on the organisation as a whole by providing for the OH needs of individual workers as well as groups of employees. The HSE (2006) provides a very comprehensive guideline to assist developing countries in establishing occupational health services in higher education institutions that are adapted to meet specific local needs.

2.7   FACTORS CONTRIBUTING TO OCCUPATIONAL INJURIES

Heinrich's theory of accident causation posits that man failure (human error) is the proximal cause of most accidents (Moraru, 2012). Manuele (2011) argues that this assertion results in preventive efforts being wrongfully directed at the worker instead of the operating system in which work is being conducted. Modern injury causation theorists advise that causal factor determination should begin by investigating the deficits in an organization's culture (Moraru, 2012). Manuele (2011) indicates that such an investigation will specify where risk taking was condoned or permitted, where resources were not provided to replace defective warning systems and where lax supervisory decisions resulted in neglect. It is largely accepted that no single issue causes an accidental injury and studies have documented a series of interrelated events which has a knock on (domino) effect which collectively contributes to the injury (Rasmussen, 1997). The evolution of occupational health and safety and the expansion of knowledge in the field has provided newer insights into accident causal factors and shifted focus from worker behaviour to improving the work system (Manuele, 2011). Work design (strategy), work distribution (spread), task management (supervision) and task content (material) form part of the work organization concept (Lindstrom, 1994). The WHO (2002) found that unhealthy work organization intensifies mental strain which contributes to more unattended workplace health hazards. Continuous involvement of all stakeholders is encouraged so that those included in problems are concerned with finding causes and solutions (WHO, 2002). Quality teams are recommended by the WHO (2002) to ensure continuous quality management by investigating problems, devising solutions and examining the results. The Mental models approach attributes injuries to mental models which cause people to make poor choices (Austin & Fischhoff, 2011). Austin and Fischhoff (2011) state that natural actions (rote actions) are conducted without thinking, false impressions lead to miscalculation of risks and over reliance on variable protective measures. Workers may not understand injury prevention instructions or information well enough to heed or follow those (Austin & Fischhoff, 2011). Workers may fail to recognise changes in their environments that could increase their risk of injury (Austin & Fischhoff, 2011). Regardless of the theory being posited the gist is that injuries can be caused by many factors whether human error, work organization, mental models or organizational systems.

2.8 PREVENTION OF OCCUPATIONAL INJURIES AND DISEASES

Prevention methods are directed at upstream instead of downstream cooperation and are grouped into primary, secondary or tertiary interventions (Institute for Work and Health, 2006). In occupational health primary prevention goals are proactive measures directed at preventing the development of occupational injuries or diseases before they occur (WHO, 2010; HESAPRO, 2013). Secondary prevention methods are reactionary strategies which happen after the fact (diagnosis is made) and the goals aim to slow the progression so that improved outcomes are facilitated, where possible (Institute for Work and Health, 2006). Tertiary preventive measures focuses on assisting stakeholders to manage long-term complications and aims to maximize the quality of life, reduce further deterioration and facilitate successful reintegration into the workplace (HESAPRO, 2013). In most cases a combination of these approaches are used to achieve acceptable standards of protection and prevention (WHO Declaration on Workers Health, 2006). Experts in the field agree that interventions that address root causes of downstream outcomes will be the most effective at dealing with negative health consequences (WHO, 2010). This task is daunting when faced with limited knowledge about the risks in most industries, inaccurate data, under reporting of injuries and diseases and the rapidly changing work environment as suggested earlier in this chapter (Loewenson, 2001; Lund & Marriott, 2011). The WHO has provided a framework to ensure that health for all in the workplace becomes a reality (Burton, 2010). The author has tabulated the WHO framework recommendations in Table 2.8 to illustrate how these recommendations correlate with the ILO's call for improved preventive approaches (ILO, 2013). The required organizational responses may differ depending on the needs within the organization (ILO, 2013). The recommendations are suggested as provisional organizational responses which may assist organizations in understanding the "how to" aspects when addressing the challenges in applying the framework guidelines (Rantanen, Lehtinen & Iavicoli, 2013). OH specialists familiar with risks and hazards in varied and specific work environments are encouraged to expand on the suggested organizational responses.

Table 2.8: Preventive measures in Occupational Health (Burton, 2010, p. 97)

WHO Healthy Workplace Framework Recommendations	Type of Prevention	Required Organizational Response
Health examinations of workers pre-employment, at periodic intervals, or after return from an injury or illness	Primary	Mandatory Policy directives strongly supported by HR and all levels of Management.
Medical surveillance of workers to detect exposures to hazardous agents	Primary	Commission Occupational Risk Exposure Profiles [OREPs] of all workers to devise an accurate risk profile and medical surveillance program for all workers.
Health record-keeping of workers	Primary, secondary and tertiary.	Integrated HIS for Organizational health and Occupational Health services to share relevant health promotion data. Special guidelines to be formulated for the maintenance of medical data confidentiality.

Providing first aid and training workers in first aid.	Primary	On-going needs assessments and updates to ensure resources are adequate to meet the health and safety needs of all workers.
General health care, curative and rehabilitation services.	Primary, secondary and tertiary.	Integration and closer collaboration between various service providers offering general health, curative health and rehabilitative services, if these are available to workers.
Immunization of employees against endemic or work-related infectious diseases.	Primary	Risk assessment led protocols forming part of the OREP which will assist in accurately budgeting to meet prevention needs before employees begin tasks with potential risk of exposure or hazardous activities.

The ILO and WHO implementation guidelines (frameworks) are invaluable especially since the study by Rantanen et al (2013) found implementation gaps to be a challenge in most ILO and WHO member countries. During this period of global economic crisis more preventive measures should be encouraged, especially since the cost of risks has been found to impact on the GDP (Rosenstock, Cullen & Fingerhut, 2006). In the developing world workers are often the first exposed to the highest levels of potential hazards compared to exposures in the developed world. Research undertakings in these settings are beneficial as they provide better insight to problems than would have been discovered in settings where risk exposures are lower (Rosenstock, Cullen & Fingerhut, 2006). Rosenstock, Cullen & Fingerhut (2006) found HIV infections due to sharps injuries to be increasing and reports that percutaneous exposures to blood borne pathogens are high amongst healthcare workers. Occupational health surveillance programmes are therefore essential to workers in this setting; however Prevention methods are directed at upstream instead of downstream cooperation and are grouped into primary, secondary or tertiary interventions (Institute for Work and Health, 2006). In occupational health primary prevention goals are proactive measures directed at preventing the development of occupational injuries or diseases before they occur (WHO, 2010; HESAPRO, 2013). Secondary prevention methods are reactionary strategies which happen after the fact (diagnosis is made) and the goals aim to slow the progression so that improved outcomes are facilitated, where possible (Institute for Work and Health, 2006). Tertiary preventive measures focuses on assisting stakeholders to manage long-term complications and aims to maximize the quality of life, reduce further deterioration and facilitate successful reintegration into the workplace (HESAPRO, 2013). In most cases a combination of these approaches are used to achieve acceptable standards of protection and prevention (WHO Declaration on Workers Health, 2006). Experts in the field agree that interventions that address root causes of downstream outcomes will be the most effective at dealing with negative health consequences (WHO, 2010). This task is daunting when faced with limited knowledge about the risks in most industries, inaccurate data, under reporting of injuries and diseases and the rapidly changing work environment as suggested earlier in this chapter (Loewenson, 2001; Lund & Marriott, 2011). The WHO has provided a framework to

ensure that health for all in the workplace becomes a reality (Burton, 2010). The author has tabulated the WHO framework recommendations in Table 2.8 to illustrate how these recommendations correlate with the ILO's call for improved preventive approaches (ILO, 2013). The required organizational responses may differ depending on the needs within the organization (ILO, 2013). The recommendations are suggested as provisional organizational responses which may assist organizations in understanding the "how to" aspects when addressing the challenges in applying the framework guidelines (Rantanen, Lehtinen & Iavicoli, 2013). OH specialists familiar with risks and hazards in varied and specific work environments are encouraged to expand on the suggested organizational responses. The ILO and WHO implementation guidelines (frameworks) are invaluable especially since the study by Rantanen et al (2013) found implementation gaps to be a challenge in most ILO and WHO member countries. During this period of global economic crisis more preventive measures should be encouraged, especially since the cost of risks has been found to impact on the GDP (Rosenstock, Cullen & Fingerhut, 2006). In the developing world workers are often the first exposed to the highest levels of potential hazards compared to exposures in the developed world. Research undertakings in these settings are beneficial as they provide better insight to problems than would have been discovered in settings where risk exposures are lower (Rosenstock, Cullen & Fingerhut, 2006). Rosenstock, Cullen & Fingerhut (2006) found HIV infections due to sharps injuries to be increasing and reports that percutaneous exposures to blood borne pathogens are high amongst healthcare workers. Occupational health surveillance programmes are therefore essential to workers in this setting; however the availability of surveillance systems may be limited, especially in developing countries (Rosenstock, Cullen & Fingerhut, 2006). The integration of primary, secondary and tertiary preventive measures in the workplace is therefore essential so that the sources of injuries and diseases are adequately controlled (Cullen, 1999). According to Matzopoulos, Norman and Bradshaw (2004) timely, accurate and reliable injury statistics are an important part of injury prevention policies. Statistical data about injuries is a powerful resource for stimulating research and directing policy and serves as an important method to evaluate prevention initiatives (Matzopoulos, 2004). Unintentional injury rates (30%) in South Africa are higher than the global average (Matzopoulos et al., 2004). Bowman & Stevens (2004) forecasts that by 2020 the injury rates in Africa will be the second largest contributor to disability adjusted life years (DALYs). Injury costing has the potential to add value to decision-making processes and should be used by safety promotion and injury prevention practitioners in advocacy initiatives (Bowman & Stevens, 2004). On the national level, injury costing is largely an underdeveloped tool in the injury prevention and safety promotion sector in South Africa. Bowman and Steven (2004) encourages the use of injury costing as a potential strategy to facilitate a safer society.

2.9   OCCUPATIONAL INJURY OCCURANCE AND PREVENTION IN HIGHER EDUCATION

Universities have been challenged to demonstrate their relevance to local problems (IIE Report, 1999). The call for relevance was responded to by increased student admission rates, increased research funding and outputs, reforms to traditional curriculum and establishing quality management forums (Venables & Allender, 2006; DHET Annual Performance Plan, 2012/2013). Conventional health and safety practices caution that any changes implemented will have a corresponding impact on the risk profile of the settings where changes were introduced. Developing countries have begun assessing these risks by taking the lead in studies on the status of occupational health in Higher Education. Several studies (Grace, 1997; American College Health Association, 2005; HSE, 2006; Venables & Allender, 2006; Faller et al., 2009) provide insight into the prevailing hazards and risks in these settings. In developing countries similar research has not been conducted and findings from developed countries will be extrapolated to the local setting. Venables & Allender (2006) report that stress, manual handling and musculoskeletal disorders, asthma and allergies, chemical laboratory and workshop hazards, infections and pathogens, sickness absence, radiation, poor management, accidents, clinical workers, noise, lasers, construction work, alcohol and drugs, other named hazards and other named occupational health concerns are the main occupational health hazards in UK HEIs. These findings are consistent with the occupational risks experienced in the general employment sector and HEIs may outweigh the working environment as a higher risk setting due to the collection of industry wide risks present in the learning setting (Venables & Allender, 2006). In the UK stress relating to work relationships and musculoskeletal disorders where highest among HEI staff and is on the increase (Venables & Allender, 2006; Kinman & Wray, 2013). The aforementioned studies clearly indicate that the HEI work setting is not excluded from the occurrence of occupational injuries and diseases. Table 2.9 provides a brief overview of some of the risks that have been highlighted by other studies. Until recently there has not been much interest in occupational injuries and disease in higher education work settings and therefore publications may not be available to indicate the injury occurrences across the entire higher education landscape. Where research publications could not be found, recent media reports of injuries in respective faculties verify that injuries do occur and serves as a useful marker to reveal areas requiring further future studies. Preventive measures to be implemented are well recognized (Mellish, 1980; Nuwayhid, 2004; HSE HSG 257, 2006, Collaborating for health, 2011) yet, as previously mention, implementation gaps pose the major challenge in bringing about meaningful changes in the higher education sector.

HEI Faculties and Departments	Risks and Hazards	Injury Studies or Media Reports
Health Science, Science Research	Lack of listing of chemicals. Lack of internal policies and guidance for workers. Carcinogenic and toxic chemicals. Inconsistent occupational health surveillance of students. Poorly enforced occupationally focussed service for staff. Blood borne and airborne infections. Inoculation injuries (sharps). Zoonotic infections Injuries and infections among Oceanographic researchers. Hazardous biological agents. Allergies (skin and rhinitis)	Venables & Allender (2006) HSE, (HSG 257, 2006)
Engineering	Noise exceeding exposure limits causing hearing loss. Ergonomic (Back and Upper limb disorders). PPE use not adequately enforced. Burns and explosions.	Menendez, Amick, Jenkins, Caroom, Robertson, Harrist & Katz (2009). Japan Today (Feb. 20, 2014) media report. UCLA Daily Bruin, (April 5, 2014) media report. HSE, (HSG 257, 2006)
Humanities & Arts	Silica in sandblasting. Wood dust Noise exceeding exposure limits causing hearing loss. Toluene and Methyl cellosolve acetate in painting and printmaking. Absence of appropriate PPE. Machinery and tools used incorrectly and without appropriate safety guards. Musculoskeletal disorders among professional and university student classical musicians.	Venables & Allender (2006) HSE, (HSG 257, 2006)
Support services	PPE use not adequately enforced. Lead exposure Musculoskeletal disorders Ergonomic (Back and Upper limb disorders). Respiratory irritants. Noise induced hearing loss. Skin irritants.	Venables & Allender (2006, pp. 162-164) HSE, (HSG 257, 2006)
Commerce and Management Studies	Musculoskeletal disorders Ergonomic (Back and Upper limb disorders).	HSE, (HSG 257, 2006)
Law	Exposure to airborne infectious diseases. Musculoskeletal disorders Ergonomic (Back and Upper limb disorders).	HSE, (HSG 257, 2006)

2.10 HEALTH AND SAFETY MANAGEMENT IN HIGHER EDUCATION

The concept for an International Organization for Standardization (ISO) standard on OSH Management Systems gained momentum after the successes the ISO experienced in

introducing the systems approach to quality (ISO 9000 series) and environmental management (14000 series) (ILO SafeWorks, 2001). The ILO Governing Body published the approved Guidelines in December 2001 (ILO SafeWorks, 2001). The International Labour Organization (ILO-OSH, 2001) describes an occupational health and safety management system (OHSMS) as a set of interconnected components to establish occupational health and safety policy and objectives. However some have found the scope of OHSM systems to be unclear and attributes the remaining uncertainty regarding the application to components other than the management elements to the poorly defined scope (Robson, Clarke, Cullen, Bielecky, Severin, Bigelow, Irvin, Culyer & Mahood, 2007). The International Labour Organisation (ILO) recommends that occupational health services should take into account the occupational hazards in the working environment and establish a programme of events tailored to the needs of the work environment (ILO, 2001). The HSE proposed an occupational health and safety management and return to work model (OHSR model) that takes into consideration the surveillance of the working environment and of the workers' health, information, education, training and advice, first aid treatment and health programmes, analysis of the results of the surveillance of the workers' health and of the working environment, and proposes relevant measures to improve them (HSE OHSR Model, 2005). The author views the HSE OHSR model to be more specifically geared to the management of injuries as it considers "return to work" after injury as part of its management system (HSE OHSR Model, 2005). Due to the changing environments of HEI's, to meet the demands of the increasing student base, public accountability requires that HEI's maintain a balance between effective internal governance and external legislation (Asmal, 2002; Zoller, 2003). Audits and evaluations can only become useful if the findings are shared with institutional internal governance structures so that the necessary policies can be developed to support local and national laws and regulations (ILO OHS series no. 72, 1998). Health and safety forms part of occupational health yet there is little information available on health and safety training provided to students, "new" employees, existing staff and short term appointments (contract workers). This lack of information is not surprising since the coverage of health and safety training and the effectiveness of training are rarely evaluated in the HEI setting (Breslin, 2003). This gap is of particular concern amidst findings that young adults experience a higher rate of disability due to amputations (Breslin, 2003). Worker participation and employee empowerment are behaviour-oriented techniques that are highly dependent on management style and attitude (Vredenburgh, 2002). It may be useful to develop management practices that foster employee involvement in health and safety initiatives in order to ensure the integration of an effective OHSM system. Vredenburgh (2002) discuss six management practices which are most effective in reducing worker injuries. The study by Vredenburgh (2002) was conducted in a hospital setting; however the author believes that development of the same management practices can result in reduced lost time and workers

compensation expenses in HEIs and other work settings. There is limited data available to determine who manages health and safety at HEIs and how these systems are structured and supported within the various HEIs in South Africa. It would be safe to assume that the absence of any health and safety or occupational health guidelines on any HEI forum indicates that this matter has not been consider as an essential component of HE activities. Governance authorities are therefore encouraged to incorporate occupational health and safety into renewed quality service delivery campaigns at HEIs.

Table 2.10: HE agency contributions to promoting health and safety at universities

Higher Education Societies	Available OHS Information or Resources	OHS in HE Research Publications
Cape Higher Education Consortium (CHEC)	Staff and student health and safety provision mentioned in the Integrated Planning Framework and MOU (Nursing) – Version 2, dated 1 January 2006.	None
Council on Higher Education (CHE)	CHE Colloquium (2003) mentions fears of restrictions to research.	None
Department of Higher Education and Training (DHET)	No mention on the website.	None
Higher Education South Africa (HESA)	One workshop on OH education was advertised online.	None
International Education Association of South Africa (IEASA)	No mention on the website	None

2.11 OCCUPATIONAL HEALTH AND SAFETY IN HIGHER EDUCATION INSTITUTIONS

Baker and Coetzee (1983) credits Dr. A.J. Oerenstein with pioneering the development of occupational health services in South Africa, however the beginnings of occupational health nursing can be traced to the health services provided to early travellers to colonies (Kotze, 1997). The evolution of occupational health in South Africa has been a slow process despite the impact of war and development that necessitated the reform of legislation as industrialization influenced the African continent (Fashoyin, 1998). South Africa has a number of progressive laws, however the regulation of occupational injuries, diseases and safe working conditions are mainly charged to the COID and OHS Acts (SANS 10366: 2012; Industrial Health Resource Group, 2011, section 3). These occupational health and safety guidelines are under the custodianship of the Department of Labour which oversees the enforcement of both Acts and the department of Minerals and Energy which shares some responsibility for OHS. The fragmented OHS services have since been revised and restructured under the respective governmental agencies (Hermanus, 1999). Delays in passing a national statutory requirement to stipulate the provision of occupational health services has resulted in these services being an exception in most work sites, including HEIs (Jeebhay & Jacobs, 1999). The recent piloting of the decentralized COID Act administration

is intended to operationalize the service delivery as publicized by the Department of Labour Director General (Compensation Fund Strategic Plan 2013/4 – 2018/9). This strategy aims to streamline the services provided by the legislature to the South African workforce; however the challenge has always been in the application of these policies (CF Annual Report, 2011/2012). The government agencies have an array of legislative directives that have been ratified and amended since the start of mining in the early 1900's, however the implementation and enforcement of these laws proves to be challenging and the administration of injuries and occupational diseases remains protracted (Hermanus, 1999). Other studies have already identified the lack of resources, support and recruitment of suitably trained professionals as factors contributing to the struggle in implementing and enforcing health and safety legislation (Lethbridge, 2007). The business sector has been slow in responding to research findings due to the fore mentioned issues as well as the costs and lack of support in implementing available ILO guidelines. Most organizations grapple with how to go about implementing an occupational health and safety management system and maintaining the necessary funds to commit to upholding these standards to reap the long term benefits (Lethbridge, 2007). Prolonging the application of these constitutionally bonded rights may see the current issues continue into the next decade if occupational health and safety professionals do not actively promote the business value and importance of these services. Available literature clearly states that the provision of occupational health and safety services is the responsibility of the employer; however the numbers adhering to or attempting to adhere to these directives are unknown (Jeebhay & Jacobs, 1999). Common perceptions of occupational health and safety hazards at Universities are not based on the experiences of all staff and may result in a huge section of the employment sector being ignored by national occupational health prevention strategies (Venables & Allender, 2006).

2.12 SUMMARY OF CHAPTER

Research findings indicate that developed countries more readily adopt policies to promote, enforce and govern safe workplace practices (Forjuoh & Gyebi-Ofosu, 1993; World Bank, 2006; Jeyaratnam, 2011). There is consensus that the development and enforcement of occupational health and safety policies should form the basis for realizing workers health (Nuwayhid, 2004; Lethbridge, 2007; DOHA Declaration, 2009; World Health Assembly,2008-2017:4). ILO country profiles indicate a more noticeable delay in implementing conventions associated with occupational health and safety among emerging and underdeveloped economies (ILO Country Profiles, 2013; ILO EU, 2013). Occupational health and safety needs in SADC countries have largely remained unchanged (WAHSA, 2004-2008). This stasis could be attributed to the lack of evidence to support activities to implement detailed policy driven occupational health and safety programmes. Fragmented government ministries are ill equipped to implement the OHS framework put forward by the ILO (WHO

Good Practice in Occupational Health Services, 2002). There is presently no data available to measure the provision of occupational health and safety services by province or to determine which employers in certain sectors are using private occupational health and safety services (OHSs) in the Western Cape. The informal sector is a growing unregulated sector in the local labour market with increased vulnerability to workplace risk factors (CoGTA 2009; Willemse, 2011; IDP, 2012/2013). The European Agency for Security and Health at Work (2010) provides evidence of OHS integration into mainstream higher education in Europe however there is little evidence to suggest that similar trends have emerged in Africa. At South African HEIs the implementation of OHS tends to favour outdated prescriptive approaches. The integration of primary, secondary and tertiary preventive measures in the workplace is therefore essential so that the sources of injuries and diseases are adequately controlled (Cullen, 1999). Injury costing has the potential to add value to decision-making processes and should be used by safety promotion and injury prevention practitioners in advocacy initiatives (Bowman & Stevens, 2004). The International Labour Organisation (ILO) recommends that occupational health services should take into account the occupational hazards in the working environment and establish a programme of events tailored to the needs of the work environment (ILO, 2001). The coverage of health and safety training and the effectiveness of training are rarely evaluated in the HEI setting (Breslin, 2003). There is presently limited data available to determine who manages health and safety at HEIs and how these systems are structured and supported within the various HEIs in South Africa.

CHAPTER THREE

Research Methods

"I keep six honest serving-men, (They taught me all I knew); their names are What and Why and When, and How and Where and Who." (Rudyard Kipling, 1902)

3.1   INTRODUCTION

There are fundamental concepts detailing which research methods are applicable and what represents acceptable research. Miller (1991) provides a succinct explanation of the directions that research could primarily take when dealing with behavioural or organizational problems. The previous chapter highlighted gaps in the management and prevention of injuries in HE settings as discussed by Venables et al (2006) and others (American College Health Association National College Health Assessment, 2005; Becker et al., 2008; Faller et al., 2009). This inquiry kept to the applied research approach (policy, action and useful research) discussed by Miller (1991). In order to conduct mixed-methods research it was important to know what the assumptions are about qualitative and quantitative research methods. Creswell (2013) defined qualitative research as being a "process of research flowing from philosophical assumptions, to the interpretive lens and onto the procedures involved in studying social or human problems". According to Creswell (2013) qualitative researchers typically collect multiple sources of data, reviewing and organizing the data into themes so that the phenomenon under study becomes better understood. Patton (1990) states that quantitative methods use standard measures to capture the varying perspectives of many people to a limited set of questions. Clearly both of these approaches have merits and weaknesses. The researcher deemed it appropriate to combine the in-depth detail of the qualitative approach with the statistical aggregation of the quantitative approach so that the research questions could be answered. The case study method formed the framework for the procedures and the approach to this inquiry.

3.2   MIXED-METHODS APPROACH

A mixed-method approach was applied in this case study as this approach enabled the integration of both qualitative and quantitative approaches into this single study (Yin, 2008). The research strategies have been viewed as separate strategies that operated side-by-side (Flick, 2006). The concurrent mixed-methods procedure merged qualitative and quantitative data where the researcher collected both types of data at the same time and integrated the information into the interpretation of the overall results (Denscombe, 2010). In the research setting the integration of multiple data sources is known as triangulation (Patton, 1990; Creswell, 2013). The researcher hoped that triangulation would provide a more

comprehensive analysis of the research problem (Patton, 1990; Creswell, 2009). Please refer to the work of Yin (2008) and Patton (1990) for a detailed discussion on the advantages and disadvantages of this methodology. The main benefits and challenges of the mixed-method approach have been tabulated below.

Table 3.2: Advantages and disadvantages of mixed-methods (Patton 1990)

Advantages	Disadvantages
Methodological triangulation improves reliability.	Mapping a data set upon another is complicated.
Better understand the problem being investigated.	Novice researchers may under-analyse data.
Multiple sources of data arranged into themes.	In sociology data cannot be aggregated to arrive at an overall truth.
Inductive data analysis building themes into conceptual units of information.	Extensive data collection and time intensive analyses of text and numeric data.
Focuses on participants' meanings and not findings in literature or the researcher's views.	Calculations of reliability depends the researchers documentation of procedures.
The initial plan for research cannot be tightly prescribed.	Anecdotalism poses a threat to validity.
Theoretical lens used to view studies.	Not based on a unified methodological concept.
Particularity and interpretive inquiry.	Findings are not generalizable.
Holistic account of the problem or issue being studied.	Subjective and reflexive, the researcher's communication becomes part of the knowledge.

The data analysis will confirm whether the tools selected are the most appropriate to measure the concepts being studied and will verify construct validity. Different methodological tools have been used to triangulate the data thereby establishing internal validity. The data cannot be applied beyond the cases under investigation and the findings will not be generalizable to other circumstances therefore external validity is not maintained. The reliability of yielding the same results is questionable. The variables are subject to external influences and constantly changing therefore the extent to which the results are accurate and stable can only be stated for this cross sectional study.

3.3   QUANTITATIVE STUDIES

Denscombe (2010) reiterates that the treatment of data, rather than the types of research, relate to the distinction between qualitative and quantitative studies. Quantitative studies analyse specific variables and tends to be associated with large-scale studies. Data is usually analysed after it is collected and numbers are used as units of analysis. Denscombe (2010) further asserts that researcher detachment is associated with quantitative studies and

advises researchers to use simple descriptive statistics without the need to apply complex statistical analysis. In quantitative studies the collected data enables the researcher to look for patterns and relationships between variables or data sets. Quantitative studies offer broad generalizable findings (Patton, 1990).

3.3.1 Philosophy of quantitative studies

Quantitative research is associated with the production of numerical data that exists independently from the researcher (Denscombe, 2010). Quantitative studies are regarded as being objective because the data is produced by research instruments and is free from the researchers influence. The instruments that are used are tested for validity and reliability therefore the data is assumed to accurately reflect the results. Denscombe's (2010) summary of the strengths and weaknesses of quantitative studies has been tabulated below.

Table 3.3: Advantages and disadvantages of Quantitative Studies

Advantages	Disadvantages
Data is scientific and lends itself to different types of statistical techniques. Is based on principles of mathematics and probability.	The data quality depends on the methods used to collect the data and the questions that are asked.
The statistical test of significance provides added credibility and increased confidence in the findings.	Technical aspects of data analysis may shift attention from the purpose of the research.
The analysis of quantitative data provides a firm basis for description and analysis. In principle, the authenticity of quantities can be checked by others.	Data overload can cause the research to be swamped by too much complexity.
Large volumes of quantitative data can be analysed relatively quickly.	Researchers can influence the findings in subtle ways.
Data can be concisely presented and organized in tables and charts to communicate the findings.	Researchers exercise choice when conducting their data analysis and these decisions can influence the findings.

3.4   QUALITATIVE STUDIES

Creswell (2013) discusses narrative research, phenomenology, grounded theory, ethnography and case study as five qualitative research approaches. A qualitative approach is appropriate when a detailed understanding is needed and a research problem needs to be explored and solved (Patton, 1990). The qualitative research study follows the general pattern of scientific research; however the designing process emerges during inquiry using visual images or words as units of analysis (Denscombe, 2010). Creswell (2013) advises that this approach is most suitable when the researcher wants to write in a flexible literary style seeking to understand the context or setting of the participants. Denscombe (2010) asserts

that qualitative research tends to be associated with researcher involvement where the researcher is the main measurement device thereby linking this approach to assumptions of interpretivism. Qualitative studies are believed to be time consuming, labour intensive and lacking clear guidelines.

3.4.1   Philosophy of qualitative studies

Any of a number of philosophies and frameworks can be applied to the research approaches discussed by Creswell (2013). An analysis of all the philosophies is beyond the scope of this paper however the reader may refer to the interpretive frameworks summarized by accomplished qualitative researchers (Patton, 1990; Creswell, 2013). This study used pragmatism as an interpretive framework using inductive and deductive evidence to discuss values that reflect the researcher and participants' views (Creswell, 2013). The pragmatic approach is better suited to small-scale studies (30 - 250 participants) using non-probability sampling techniques (Denscombe, 2010). Patton (1990) and Denscombe (2010) support the view that the pragmatic approach using non-probability sampling can produce data that is sufficiently accurate for research purposes. Pragmatism is based on reality (useful and practical) and was well suited to the assessment of real life situations at the participating universities.

Table 3.4: Advantages and disadvantages of Qualitative Studies

Advantages	Disadvantages
Richness and detail to the data are well suited to complex social situations. Small-scale research generating rich in-depth study of focused areas.	Data may be less representative and therefore cannot be generalized to other similar circumstances.
Tolerance of ambiguity and contradictions. Reflects the social reality being investigated.	Interpretations are bounded up in the "self" of the researcher.
Draws on the interpretive skills of the researcher to open up the possibility of alternative valid explanations.	There is a possibility of decontextualizing the meanings in the process of coding and categorizing data.
Descriptions and theories that are generated are grounded in reality.	There is a risk of over-simplifying the explanations.
	The analysis of the data takes longer.

3.5   RESEARCH DESIGN

According to Miller (1991) the research design can proceed in a variety of settings seeking evidence to accept or reject the validity of a hypothesis. There are many available designs however the choice of design boils down to selecting the most appropriate strategy to answer questions about a researchable problem that will contribute to the existing knowledge in a

field of study. The reader may refer to the work by Miller (1991) for a discourse on the seven core research design settings, the central characteristics of these designs as well as their prospective outcomes. The researcher used a study design combining a survey and case study method and worked with two data banks (statistical and case analysis data). This approach is not new and has been successfully applied in social science, education, business, health, information science as well as other fields of study (Gable, 1994; Stecher & Borko, 2002; Modell, 2005; Driscoll, Appiah-Yeboah, Salib & Rupert, 2007; Dickson-Swift, Marshall, Fox & Willis, 2011).

3.6   DESCRIPTIVE SURVEY

Denscombe (2010) reiterates that the survey is a strategy which may use any of a variety of methods (questionnaires, interviews, documents or observations). Descriptive surveys help with the reduction of uncertainty by providing more definitive data. A descriptive study is designed only to describe the existing distribution of variables and does not seek to make causal inferences. Grimes and Schulz (2002) explain that five basic "W" questions - who, what, why, when, and where - and an implicit sixth question (so what?) should be answered by good descriptive research. However Alreck & Settle (1995) assert that survey research cannot provide answers to all questions and, like other sources of information, is subject to certain imperfections.

Table 3.6: Advantages and disadvantages of Descriptive Surveys

Advantages	Disadvantages
Descriptive studies prompt more rigorous studies.	Temporary links might be unclear creating assumptions of causes and effects.
Descriptive studies are often the first, tentative approach to a new event or condition.	Researchers might draw causal inferences where none exist.
Provide clues about causes that can be followed with more sophisticated research designs.	Absence of clear, specific, and reproducible case definitions.
The data may often already be available and thus inexpensive and efficient to use.	Interpretations that overstep the data.
Few ethical difficulties exist.	

3.7   MULTIPLE CASE DESIGN

According to Gomm, Hammersley & Foster (2000) a case is regarded as a bounded system and these researchers have emphasized the importance of respecting the boundaries of the case (understanding how people in it view the world). A multiple case study design was used as a strategy for in depth inquiry about the topic under investigation (Creswell, 2009). Pragmatism was the philosophy underlying the approach and arises out of actions, situations

and consequences concerned with applications and solutions to problems (Creswell, 2009). The researcher used this philosophy to place an emphasis on the problem and used available approaches to understand the problem (Creswell, 2009). Creswell and others have found this approach to be a suitable basis for research in social sciences using mixed-methods (Creswell, 2009). This approach provided the researcher with freedom to choose the methods, procedures and techniques that best suited the researcher's needs and purposes. A pragmatic approach allowed the researcher to examine different forms of data collection and analysis, multiple methods, different worldviews and assumptions (Creswell, 2009). The case study design provided the researcher with a greater margin of accessibility and allowed experiences to be shared vicariously (Gomm, Hammersley & Foster, 2000). The researcher applied the case study approach because it includes analysing a case or cases in a real-life setting and the researcher could use different research tools to increase validity (Creswell).

Table 3.7: Advantages and disadvantages of the Multiple Case Design (Patton1990:14)

Advantages	Disadvantages
Considered to be more robust.	Requires extensive resources and time beyond the resources of a single researcher
Smaller numbers of cases can be studied in depth and can investigate causal processes in the real world.	Difficulty in distinguishing contingent from necessary relationships when small numbers of cases are being studied.
Can capture the unique character of a person, situation or group with no attempts at generalizability	Some researcher's question the legitimacy of researchers who speak on behalf of others by questioning the unitary perspective used for case study description.
Facilitates naturalistic generalization and builds the tacit knowledge about which people act.	May lead people to see phenomena more simplistically than they should

3.8   POPULATION AND SAMPLES

The primary cases are well-established higher education institutions with several campuses located in different areas in the Western Cape. University-A and University-B each have five campuses. The universities operate in the same sector and each have a large staff and student population. The main differences lie in the physical set-up of the campuses, the period of time that these Universities have been established and the programmes that are offered. University-A has a physically open main campus (not enclosed by fences) and was founded nearly a century before University-B. University-B has a fully enclosed main campus (completely fenced) and is a less traditional institution.

3.8.1 Samples at University-A and University-B

The HEIs participating in the study are members of the Cape Higher Education Consortium (CHEC) and the Council on Higher Education (CHE). The researcher was therefore assured that the participating University's adhered to standards monitored by the aforementioned quality assuring bodies. Both HEIs are based in Cape Town with University-A located in the southern suburbs and University-B located in the northern suburbs. There are differences in the location, physical design and operational functions between University-A and University-B which may have limited the possibility for making direct comparisons between these universities. The researcher was cognisant of these disparities and therefore focused on the provision of specific functions (injury prevention and injury management) which theoretically should not be impacted by these differences. The two Universities were the main (primary) cases, wherein separate within case samples were formulated as part of the study. The case study participants were selected from three categories of staff to ensure that all groups of staff (non-academic, executive and blue-collar workers) and the spectrum of educational levels (Graduates, General Education and Training and Adult Basic Education and Training) have been included in the study.

a. Within Case 1

Within Case 1 consisted of health and safety representatives who were appointed according to the directives of the OHS Act. Health and Safety Representatives (H&S Reps) are employees who are nominated by their colleagues to serve as an employee representative on a Health and safety committee. H&S reps are appointed to perform specific voluntary functions for a specified term and are selected from nominees who are full-time employees. Managers are appointed to serve as employer representatives on a Health and safety committee and therefore cannot be appointed as a health and safety representative. The appointed H&S Reps receive accredited training to fulfil their functions as prescribed by sections 17 and 18 of the OHS Act. Section 17 covers the legal requirements for the appointment of health and safety representatives and the number of health and safety representatives that must be appointed at a workplace. Section 18 of the OHS Act describes the functions of H&S Reps and is included in the accredited training provided to H&S Reps during working hours. The Health and safety committees at both institutions formed an ideal basis from which to recruit participants who have a basic knowledge of occupational health and safety. The researcher invited Health and safety representatives to participate in the study via the Health and safety committees based at each participating university.

b. Within Case 2

Within Case 2 consisted of staff who had not received accredited health and safety training; however they may have attended an introductory safety induction session upon employment

at the university. Responses from these cases were used to measure whether there are any differences in injury rates or interest and participation in injury prevention strategies among staff who have and have not received health and safety training. Participants were selected from the Human Resources (HR) department, Estates and Custodial Services department, Health and Safety department; Traffic services department as well as the Maintenance department of both participating Universities. The HR respondents consisted mainly of HR Practitioners who have a high level of education and training. The other respondents consisted of a mixture of specialists, professionals, skilled and semi-skilled artisans or labourers who had skill levels ranging from scarce skills and highly skilled to basic levels of education.

c. Within Case 3

Within Case 3 consisted of senior managers and executive directors who managed departments forming part of the Within Case 2 sample groups. These participants were professionals who have line management responsibilities. The participants were surveyed and interviewed to determine the injury prevention and management perceptions and experiences from the organizational decision-makers (management) perspective.

3.8.2 Sample Participants

3.8.2.1 University-A: Health and Safety Representatives within Case 1A to 1E

a. University-A: 1A Human Resources

At the time of this survey none of the Human Resources staff who were eligible to participate in the study (n=88) were appointed or had received training to fulfil the role and function of a Health and Safety Representative.

b. University-A: 1B Estates and Custodial Services

The Estates and Custodial Services (ECS) department had strong safety representation in specific areas and weak to non-existent representation in other areas. At the time that this study was conducted, the Educare and Gardening services were the only areas that had appointed H&S reps. Cleaning services, Waste collection and Postal services did not have adequate representation apart from the management representatives who were members of the respective health and safety committees.

c. University-A: 1C Maintenance Department

At the time of the survey the Maintenance Department did not have any appointed safety representatives on either of the campuses. The Management representatives were present at most of the health and safety committee meetings, however this presence was not to

report on health and safety concerns from the employees perspective. For this reason the minutes could not serve as evidence of employee representation in terms of the OHS Act.

d. University-A: 1D Safety, Health and Environment Department

The department overseeing health and safety and occupational health at University-A is known as the Safety Health and Environment Dept. (SHE) and consists of six staff members. These members are not Safety Representatives as defined by section 17 of the OHS Act. The SHE dept. is a service oriented division providing workplace safety which focuses on support to the employer and employees in upholding occupational health and safety laws, human rights and ethical practices of all activities conducted via this HEI. The service provided to the HEI focuses on fire, laboratory, office, contractor, food safety, emergency planning and training, fire safety training, first aid training, environmental risk management, hazardous substance management, incident management and investigations, injury on duty registration, ergonomic assessments, risk assessments, legal compliance and internal audits to uphold safety standards in the work environment. The health and safety and occupational health specialists are ex-officio members serving on 13 health and safety committees forming part of the safety structures at University-A.

e. University-A: 1E Traffic Services Department

The Traffic Services Department has one H&S Rep. and a management representative which is required to serve on all health and safety committees. Injury prevention and management is very pertinent to this cohort. The HEI uses its campuses as venues to host and participate in many events and operates at many off campus facilities. Venues are hired to the public, major events are hosted on campus and dignitaries and other visitors generate an influx of vehicles onto campus locations. This extensive involvement with commuters and transport services on and off campus requires the strict enforcement of road safety standards and regulations. Road safety is a national concern due to the reported rise in road injuries and fatalities. At University-A this concern is heightened, particularly since public roads intersect campus spaces and may present an increased risk to the campus community.

3.8.2.2 University-A: All staff working in within Case 2 department's case 2A to 2E

a. University-A: 2A Human Resources Department

The HR dept. develops and maintains effective and constructive employee relations to ensure organisational effectiveness. HR processes and management reporting enhancements aim to attract and retain the right people to fulfil the mission and goals of the institution. The department strives for wellbeing at an organisational, interpersonal and individual level by mitigating risk and ensuring legislative compliance and risk management. Leadership is built by the provision and evaluation of workplace staff learning programmes

which include the monitoring of development initiatives and competence. The Human Resources department had the largest staff complement qualifying to participate in the study (n = 88). This sample group had a very large female to male ratio (6:1) with 82.9% of those eligible to participate being female. The HR Client Services section (32.9%) and the Staff Recruitment Office (13.6%) had the most staff and Employee Relations (1%) had the least allocated staff. A very low participation rate (2.3%) was recorded amongst the Human Resources cohort.

b. University-A: 2B Estates and Custodial Services Staff

The Estates and Custodial Services department is divided into sections providing Educare, Gardening, Cleaning, Setting up training and examination venues, Food preparation, Waste collection, Pest control and Postal services to the campus community. Most of the personnel are contract service providers and 36 permanent staff where eligible to participate in the study. Of the 36 staff members 21 where female (58.3%) and the response rate remained weak with less than 1% of staff in this cohort participating in the study.

c. University-A: 2C Maintenance Department Staff

The Maintenance Department has several sections overseen by managers who supervise the maintenance operations on the various campuses. There is 38 staff members working in the Maintenance Dept. of whom 7 are female (18.4%). The greatest percentage of staff are administrative (16%) and management components (13%) followed by electrical (13%), plumbing (11%) and building artisans (11%). The response rate was somewhat better in the Maintenance cohort where 32% of the sample participated in the study.

d. University-A: 2D Health and Safety Staff

At the time of the survey the safety structure at University-A was unspecified; however available data indicated that a decentralized safety management system was in force. Annexure L provides an overview of the theoretic reporting structure (Appendix K) and the operationalization of the occupational health and safety system (Appendix K) at the time of the survey. Five of the full time staff is trained in occupational health and safety and one member performs administrative office support duties. The Health and Safety Dept. has four staff members (Safety manager, Safety officer, Environmental Risk officer, Administrative officer). The Occupational health clinic forms part of the Health and Safety Dept. and has two full time Occupational Health Nurse Practitioners who report to the Safety manager. The Occupational health clinic has two contracted Occupational Health Medical Practitioners who provide specialist services for four hours a week. One of the OH nurses could not participate in the survey due to a conflict of interest and the OH medical practitioners could not

participate in the study due to not meeting the inclusion criteria. Five of the six full time Health and Safety dept. staff was eligible to participate in the study.

e. University-A: 2E Traffic Services Department Staff

The Traffic Services Dept. at University-A has twenty fulltime staff members. All staff was eligible to participate, however a low percentage (24%) responded to the survey. Traffic services have five administrative staff members and fifteen traffic controllers.

3.8.2.3 University-A: Managers within Case 3A - 3E

a. University-A: 3A HR Manager

The Human Resources Executive Director declined to participate in the study and suggested that the researcher liaise with the Human Resources (HR) Practitioner overseeing the human resources function for the research sample departments. The researcher approached the Client Services division of the HR department to determine what the current injury prevention and management practices are within this division of HR. The potential benefits to the Client Services Dept. and the HEI staff serviced by this division could not be realized due to the general reluctance of staff to participate in the study. At the time of the survey the full-time HR Practitioner overseeing the sample population was on maternity leave and a temporary HR Practitioner was appointed in her position. The contract HR Practitioner agreed to be interviewed however this interview could not be included in the statistical analysis due to the contracted staff member not meeting the inclusion criteria for this study. The researcher however opted to discuss the points emerging from the interview due to the valuable insights that were unearthed. A very important area of injury prevention and management oversight emerged. This gap will be discussed in greater detail in the discussions chapter (Chapter 5).

b. University-A: 3B Estates and Custodial Services Manager

The Estates and Custodial services manager agreed to participate in the study and completed a questionnaire and was interviewed. His responses form part of the data that was triangulated to capture his perspectives and experiences of injury prevention and management of injuries within his portfolio.

c. University-A: 3C Maintenance Department Manager

The Executive Director, a Manager and a Supervisor agreed to be interviewed and each completed a questionnaire. Due to the extensive delegation of duties between senior managers and mid-level managers the researcher considered it beneficial to obtain a sample from senior as well as the mid-level (supervisory level) managers to obtain a broader perspective of the injury prevention and management experiences within this multi-tiered department.

d. University1: 3D Health and Safety Manager

The Health and Safety Manager and the Risk Services Director both agreed to be interviewed and each completed a questionnaire. These individuals have interconnected responsibilities, different focus areas and different approaches to health and safety.

e. University-A: 3E Traffic Services Department Manager

The Traffic Services Dept. manager agreed to be interviewed and completed a questionnaire. The experiences and perceptions of injury prevention and management will be unique to this setting as not many HEIs have an open campus which intersects with heritage sites, public roads, national parks, private residences, corporate and public spaces.

3.8.2.4 University-B: Safety Representatives within Case 2A to 2E

a. University-B: 1A HR Safety Representatives

The HR Department does not have any Health and Safety Representatives appointed in terms of Section 17 of the OHS Act.

b. University-B: 1B and 1C Estates and Maintenance Department Safety Reps

The Estates and Maintenance Department had 3 Health and Safety Representatives appointed in terms of Section 17 of the OHS Act. A representative was based at each of the three campuses and forms part of one main health and safety committee.

c. University-B: 1D Health and Safety Representatives

There are twenty five health and safety representatives (H&S Reps) having either engineering or built environment backgrounds. At the time of this study the designated areas of responsibility for these representatives had not yet been clearly defined. The H&S Reps formed part of one main Health and Safety Committee which was established in 2013. The H&S Reps assist the H&S Coordinator and Protection Services Department (PSD) in enforcing the OHS Act. All of the H&S Reps are fulltime employees and met the inclusion criteria to participate in the study.

d. University-B: 1E Protection Services Department Safety Representatives

At the time of the study the PSD did not have any Health and Safety Representatives appointed in terms of Section 17 of the OHS Act.

3.8.2.5 University-B: Staff working in sample departments Case 2A – 2E

a. University-B: 2A HR Staff

The Human Resources (HR) Department provides an accessible, high quality service to employees and aims to move the institution from good to great via excellent working relationships and high standards of work. At the time of the study ten female staff worked in the HR department with two working in Learning and Development, two in Recruitment and Selection and six in the Remuneration and Benefits section. All of the HR staff met the inclusion criteria and was eligible to participate in the study.

b. University-B: 2B and 2C Estates and Maintenance Department Staff

The Estates and Maintenance Department (EMD) is responsible for the design construction and maintenance of landscaping and sports fields on all campuses. The EMD has a compliment of sixty six workers, thirteen permanent employees and fifty three contract workers. This department ensures that all outdoor areas are clean, safe and aesthetically pleasing all year round. To achieve this objective the swimming pools, fountains and water features are maintained on all campuses. The EMD daily functions include the mowing of lawns and sports fields, water irrigation, cleaning of flower beds, spraying pesticides, trimming trees, picking up refuse, raking grass cuttings, planting trees and shrubs, distributing compost and fertilizer, vacuuming swimming pools, adding chemicals to pool water and minor repairs and servicing of equipment. Thirteen permanent employees met the inclusion criteria to participate in the study.

c. University-B: 2D Health and Safety Staff

The core health and safety functions are provided by a single individual working in the Health and Safety Office. The Health and Safety Coordinator (HSC) is mainly responsible for the provision of an advisory service. This service is aimed at maintaining adherence to the health and safety compliance criteria stipulated in the OHS Act and the COID Act. The HSC reports to the Chief Director of Infrastructure Development and Facilities Management who is a member of the executive management at the university. The HSC is assisted by twenty five H&S Reps and the Protection services dept. that monitor adherence to the OHS Act and the health and safety policy of the institution. An organogram to illustrate the health and safety reporting plan at University-B could not be compiled due to a lack of information.

d. University-B: 2E Protection Services Department Staff

The university has a Protection Services Department (PSD) which offers a twenty four hour service. Full-time and contracted security officers are employed to enforce rules and regulations, investigate incidences, arrest criminals, maintain order and protect the assets of the institution. The personnel are split into shifts covering all campuses and are available to

give assistance at all times. The PSD has a simple but comprehensive approach to safety and security aiming to provide an integrated and coordinated risk management and protection service to students, staff and visitors. The PSD has six permanent employees which met the inclusion criteria to participate in the study.

3.8.2.6 University-B: Managers within Case 3A – 3E

a. University-B: 3A HR Manager

The HR manager did not respond to telephonic, electronic or personal face to face invitations to participate in the study. At the Researchers fourth visit to the HR Dept. an HR Practitioner agreed to be interviewed and completed a questionnaire.

b. University-B: 3B – 3C Estates and Maintenance Department Manager

The EMD Manager completed a questionnaire and agreed to be interviewed. The Manager provided all the necessary data to the Researcher after receiving permission from the Chief Director of Infrastructure Development and Facilities Management.

c. University-B: 3D Health and Safety Manager

The Health and Safety Manager (HSM) did not respond to telephonic and electronic invitations to participate in the study. After 12 weeks the Researcher received feedback from his Secretary and was informed to contact the Health and Safety Coordinator (HSC). The HSC completed a questionnaire and agreed to be interviewed. Obtaining the necessary supporting documents for triangulation was extremely cumbersome even after receiving permission from the Executive Manager overseeing the health and safety portfolio.

d. University-B: 3E Protection Services Department Manager

The PSD Manager agreed to liaise via electronic mail, but did not respond to any queries whether emailed or telephonic. It was extremely difficult to arrange a meeting with the PSD Manager due to multiple incidences on campus which coincided with the arranged meeting schedules. After multiple attempts the Researcher obtained an interview and a completed questionnaire from the PSD Manager.

3.8.3 Selection of Cases

The initial intention was to include the five Western Cape HEIs in the study; however the lack of resources and stringent research participation requirements meant that the Researcher had to limit the study to two primary cases. The two primary cases where convenient cases. The researcher is employed at University-A which made daily access to participants easier.

University-B provided ethics approval for the research proposal therefore no additional ethics approval was required from University-B.

3.8.3.1 Selection of Sub-cases

The selection of sub-cases was based on the Researchers knowledge of occupational health and safety and the observation that the sample subsets consist of staff that are required to go to various departments and campuses during the provision of their services to the Universities. The risk of injury and the prevention and management of injuries becomes more complex when staff enters unfamiliar places and introduce increased exposure to risks across campus.

3.9 INCLUSION AND EXCLUSION CRITERIA

3.9.1 Inclusion criteria

Age, gender and length of service were not considered as part of the inclusion and exclusion criteria. The type of employment (permanent), the department that the respondent worked in and whether the employee was a health and safety representative was the main factors that determined whether the participant was eligible to participate in the study. South African legislation provides a very broad definition of employment which affords employers with carte blanche to define the type of employment via the contract entered into between the employer and the employee. The discussion by Fourie (2008) offers some insight of the definitions of part-time employees, temporary employees, employment agency employees, casual workers, home workers and workers engaged in different types of contracting relationships. Permanent employment is defined by Havenga, Havenga, Hurter, Kelbrick, Manamela, Schulze and Stoop (2012) as being an ongoing employment relationship where the intention of employing a person may be enacted on a full-time or part-time basis. The definition of part-time discussed by Havenga et al. (2008) refers to the number of hours worked by the employee for the duration of the ongoing employment relationship. University employees, who were listed on the ongoing payroll of departments identified to join the study, were invited to participate. The inclusion criteria was very specific and only respondents who were H&S reps and permanent employees working in the Maintenance, Estates, HR, Traffic and H&S Departments were included in the study.

3.9.2 Exclusion criteria

Employment relationships that are not ongoing differ from permanent employment and are commonly described as non-standard or atypical employees. Atypical workers were excluded from the sample population. Any employee that was not listed as a permanent employee on

the HR register of the participating university was not included in the study. Staff at the participating Universities who did not work in the within Case 2 departments, who were not appointed as H&S Reps at the participating university and were not senior Managers of within Case 2 departments - could not participate in the study.

3.10 SAMPLING TECHNIQUE

3.10.1 Participants

Purposive sampling allows a case to be chosen because it illustrates a feature or process that the researcher is interested in investigating (Silverman, 2000). Tongco (2007) states that purposive sampling can be an effective sampling tool when used properly, and may be as effective as random sampling. Injury prevention and management is overseen by occupational health and safety specialists therefore the selection of health and safety personnel (including H&S Reps) was essential to obtaining information that was pertinent. The other participating departments provided a rich perspective of injury prevention and management perceptions and experiences of support staff who did not receive formal health and safety training. Their feedback provided insight into their perceptions of the importance of health and safety and injury prevention in their workplace. The departments selected to participate in the study are engaged in activities throughout the University providing a snapshot of the gaps in current injury prevention and management practices at the participating HEIs. Replication, not sampling logic was applied in multiple-case studies and is similar to the logic applied in multiple experiments (Yin, 2008). To provide opportunities for replications multiple within cases were selected so that analysis of these cases would establish the repetition of differences or similarities. The technique sought replications between staff who received health and safety training, support staff that did not receive health and safety training and departmental managers having the responsibility of enforcing adherence to health and safety policies. Each case was carefully selected so that it either predicted similar results (a literal replication) or predicted contrasting results (a theoretical replication). The replication logic technique required careful consideration of the cases chosen. The researcher therefore carefully selected the cases by considering the interdepartmental working relationships that would be required to prevent and manage injuries.

Advantages	Disadvantages
More substantial analytic benefits from having two (or more) cases.	Failure to redesign will leave the study open to accusations of distorting or ignoring discoveries that contradicts the original design.
No sample size specified, case numbers depend on the power of the desired effect.	Subtle theories require 6 or more replications.
Flexibility to modify the design should not lessen the rigor (following case study procedures).	Can be complicated. At least two individual cases within each of the subgroups, so that the theoretical replications across subgroups are complemented by literal replications within each subgroup.
Likelihood of detection as part of a power analysis is not based on any formula but is a matter of discretionary, judgmental choice.	More expensive and time consuming to conduct.

3.11 KEY INFORMANTS

Informants may suggest other sources of evidence for the researcher to check and are study participants that provide critical information or interpretations about the case (Yin, 2014). According to Eyler, Mayer, Rafii, Housemann, Brownson and King (1999) key informant surveys are an approach to assess needs and attitudes and can provide distinct yet complementary information. Key informant surveys obtain data from professionals having knowledge about features specific to the population being studied (Eyler et al., 1999). Key informants are one or a few individuals petitioned due to their knowledge of the population of interest and observances about the culture (Tongco, 2007).

Table 3.11a: Advantages and disadvantages of key informants

Advantages	Disadvantages
Opportunity to establish trust and rapport to get an insider's views.	Other members not being used as key informants may resent being left out.
Provides in-depth information about the problem.	The researcher's relationship with the informant may influence the information obtained.
Allows the clarification of ideas and information on a continual basis.	Informants may provide their own impressions and biases.
Can easily be combined with other techniques.	Representativeness is difficult to achieve and may have to be combined with other methods.
Allows information to be obtained from many different people including minority viewpoints.	The information may be difficult to quantify or organize.
May avoid high cost of printing, mailing and data analysis.	May overlook the perspectives of those who are less visible.
Can be used with all age groups including the elderly and children.	Takes time to select good informants and build trust.

Table 3.11b: Interview questions for key informants

Objective	Interview Questions	Information required
Aim 1: To determine the types of work-related injuries that occur at HEI's in the Western Cape. **Objective:** • Assess injuries reported to the department of labour on COIDA form WCL2 Employers Report of an Accident.	What challenges do you experience in the management of injuries on duty?	Policy and practice discrepancies related to injury on duty.
Aim 2: To examine strategies put in place at HEI's to prevent injuries in the workplace. **Objective:** • Review policies and procedures related to injury on duty prevention.	What constraints do you have in implementing the occupational health and safety system that you envision?	Signs of reduced support for the implementation of the safety system policy document. .
Aim 3: To examine systems in-place to manage workplace injuries at HEI's. **Objective:** Examine the health and safety structures (safety committees) and their related injury on duty documents (Annexure 1 reports) in place at the HEI's.	What injury prevention strategies do you have in place? How is the effectiveness of this system monitored or assessed?	Evidence of injury prevention cost-savings explicitly correlated to specific injury prevention value statements.

3.12 RECRUITMENT OF PARTICIPANTS

The researcher adhered to the strict guidelines provided by the participating HEIs which restricted contact with staff working at the Universities until ethics approval was received and approval was granted via form HR194 (Annexure A). The researcher submitted an ethics approved proposal and letter of request to the Research Ethics Committee of University-A (Annexure B). After receiving an ethics approval letter from University-A and University-B an HR 190 form and letter of request was forwarded to the HR Director for permission to contact University staff to participate in the study. The HR Director at University-A instructed the IT department to forward an email containing the Information Sheet, Letter of Consent, and Questionnaire to the selected staff via email.

3.12.1 Emails

a. University-A within Case 1

After receiving permission to contact University personnel to participate in the study, the researcher emailed an electronic poster to the health and safety committees and appointed

Health and Safety representatives. Two weeks later a follow up email was sent to all Health and Safety Reps. Two weeks after the reminder email was sent, the researcher visited the health and safety reps to remind them of the survey. After the initial email was sent to participants the researcher approached the health and safety committees to encourage health and safety reps to participate in the study and remind them to complete the questionnaire.

b. University-A within Case 2

The researcher contacted the HR Directors office to ask for a second email to be sent to the selected participants because no staff responded to the first email. After the third email still received no responses the researcher formulated a brief electronic poster and distributed it to the mailing list provided by the HR Department. The response rate was improved after sending the short electronic poster (Annexure C) to the sample groups.

c. University-A within Case 3

The researcher emailed the manager of each participating department to explain the purpose of the research and to ask if they would agree to be interviewed. After receiving emailed confirmations that the managers would participate in the study, the researcher telephoned their offices to book a 15 to 30 minute interview via the managers' secretaries. Before conducting the interviews the researcher asked the managers to complete a letter of consent and a questionnaire (Annexure D).

3.12.2 University-B within Case 1, Case 2 and Case 3

After receiving ethics approval the researcher forwarded a letter of request to the HR Director for permission to access University staff to participate in the study (Annexure E). A letter of request was emailed to the HR department on a weekly basis and after the sixth week the researcher received an email confirmation that permission was granted to access university staff. The researcher was referred to the HR Staff Development Manager based at the campus in the northern suburbs. The researcher requested assistance in communicating with the managers at the university so that staff would be assured that senior managers provided permission for staff to participate, should they be interested. The HR Manager rejected this recommendation and suggested that the researcher submit an emailed request directly to each departmental manager of the areas identified to participate in the study. The names, contact numbers and email details were provided to the researcher who forwarded an email explaining the purpose of the research and requested permission to contact University personnel to participate in the study. Additional delays ensued when the wrong contact details for managers in some of the identified departments was provided to the Researcher. After two weeks a reminder email was forwarded to each manager as a follow

up of the initial request. A week after receiving no responses the researcher emailed an electronic poster to the departmental managers enlisting their assistance in forwarding the electronic poster to all permanent staff working in their departments. Two weeks later a follow up electronic poster was emailed. After several weeks of telephonic and emailed reminders resulted in no responses from participants, the researcher visited the campus to ask staff to participate in the study and handed fifty hardcopies of the questionnaire to each participating department manager. The researcher visited the campus thrice to meet with interviewees using these opportunities to check the survey box for completed questionnaires and to remind departmental managers to encourage staff to complete the questionnaire. The researcher received four questionnaires from the managers of participating departments, but received no completed questionnaires from other staff forming Within Case 2 samples.

3.13   METHODS OF DATA COLLECTION

Official documents, questionnaires and unstructured interviews were the three sources of data that was collected. Yin (2014) states the usefulness of these records yet cautions that these may not always be accurate and may be subject to biases. Documents must be used with caution and in this study was used to validate other evidence (Yin, 2014).

3.13.1   Official Documents

3.13.1.1 Types of documents used and summary of information contained
a. WCL 2 Employers report of an Accident
The WCL2 form is a Department of Labour prescribed COID Act document that must be used to record any injury or accident that occurred while the employee was busy with work activities. This document has to be signed, dated and fully completed by the employer so that the injured employee can access medical treatment (Annexure F).

b. Annexure 1 Incident Report
The incident report is an official Department of Labour document that is used to record all incidences on that occur at work. The Annexure 1 Report has to be completed for all incidences, even if the employee does not require medical treatment. All Annexure 1 reports must be tabled at the Health and Safety Committee meetings and must be signed by the Health and Safety Committee Chairperson. A template of an Annexure 1 Incident Report forms part of the COID Act (Annexure G).

c. Security injury or accident record

The security personnel may have a log book containing any information about injuries that may have occurred that are not reported at the staff clinic or to the health and safety representatives.

d. Health and Safety Committee Meeting Minutes

The Health and Safety Committee (HSC) meetings are prescribed by the OHS Act administrative regulations. The meetings have to be convened on a quarterly basis however; may be convened on a more regular basis if needed. Health and Safety committees are composed of voluntary trained health and safety representatives. The minutes of the meetings have to be retained in a Health and Safety folder as proof of health and safety issues that are being tabled with the Section 16.1 and 16.2 appointees.

e. Quarterly Inspection Reports

Quarterly Inspection Reports are the instruments used by health and safety reps to check on any health and safety issues in their area of responsibility. All Quarterly inspection reports (QIR) have to be signed by the Health and Safety Committee (HSC) Chairperson. The Chairperson forwards any QIR's providing information of threats to health and safety to the OHS Act appointed section 16.2 delegate who notifies the section 16.1 delegate of the urgent issues. The Section 16.1 and 16.2 appointees are legally liable for the health and safety of workers under their management and are ultimately accountable for any injuries and diseases arising as a result of non-response to notifications of health and safety noncompliance.

f. Public documents

Public documents are any employer publications such as work newsletters or work newspapers that are used to provide information about campus wide activities or information of interest to the campus community.

Table 3.13: Advantages and disadvantages of using documents (Creswell, 2009)

Advantages	Disadvantages
Enables the researcher to obtain the language and words of participants	Not all people are equally articulate and perceptive.
Can be accessed at a time convenient to the researcher.	The information may be protected and unavailable to private and public access.
It is an unobtrusive source of information.	Requires that the researcher search out information in hard to find places
Represents data that is thoughtful in that participants have given attention to compiling them	Requires transcribing or optically scanning for computer entry
As written evidence it saves the researcher the time and expense of transcribing.	Materials may be incomplete and the documents may not be authentic or accurate.

3.14   Questionnaire

Due to the lack of suitable available surveys on the topic of interest, the researcher had to develop a questionnaire. The questions are specifically relating to the local setting and were focused on addressing the areas under investigation. Mostly open-ended questions were posed, however some multiple-choice and closed-ended questions were included, where feasible.

Table 3.14: Advantages and disadvantages of using a questionnaire (Walsh, 2001)

Advantages	Disadvantages
Can be a cheap and effective way of collecting data.	Response rates are often low.
Can collect a large amount of data relatively quickly.	You don't know who actually completed the questionnaire.
Is a relatively reliable method of data collection.	Researcher cannot be sure that respondents understood the questions and can't use follow-up questions to explore unusual answers.
A comparison of respondents' answers is possible.	Responses can be limited by restricted ranges, scales and forced choices.
	Respondents tend to be people who have stronger views or attitudes on the subject being surveyed.

3.15 INTERVIEWS

A set of substantive questions reflected the line of inquiry and was distinct from the survey instrument. The general orientation of the questions was posed to the researcher and not the participants being interviewed (Appendix H). These queries served as a reminder to keep the interviewer on track and mindful of the information that needed to be collected (Yin, 2014). Yin (2014) advises that each question should have a list of accompanying sources from which to obtain the likely evidence (Table 3.11b). The questions were constructed after the researcher established the case to be investigated. A series of clear, narrow and researchable questions where formulated based on the researchers experiences and by reviewing the problems that the researcher encountered while working at a HEI.

Table 3.15: Advantages and disadvantages of interviews (Creswell, 2009, p.179)

Advantages	Disadvantages
Useful when participants cannot be directly observed.	Provides indirect information filtered through the views of the interviewees.
Participants can provide historical information.	Provides information in a designated place rather than the natural field setting.
Allows the researcher control over the line of questioning.	The researcher's presence may bias responses.
	Not all people are equally articulate and perceptive.

3.16 PROCESS OF DATA COLLECTION

The request for documents was submitted after the questionnaires were forwarded to participating departments. The interview with key informants was intended to follow after the researcher received completed questionnaires. This sequence of events had to be altered due to the poor response from participating departments. The researcher asked questions of specific interviewees of each department (Within Case 3 participants) after they completed a Letter of Consent and a Questionnaire. The researcher would interview cases again after identifying multiple case patterns after conducting the initial interviews.

3.16.1 Documents

The researcher contacted the executive managers in charge of health and safety and explained the purpose that the documents would be used for. The executive managers forwarded permission to the health and safety managers and coordinators to provide the researcher with the necessary information. The researcher provided the health and safety managers and coordinators with a letter stating that the institutions would remain anonymous and that the study findings would be shared with the participating institutions (Annexure I). The request for documents was submitted after the participating managers had the opportunity to read the Research Information Sheet to understand the purpose of the study.

3.16.2 Questionnaire

The questionnaires were initially intended to be distributed via electronic mail however due to the nonresponses the researcher had to hand out hardcopies at the participating universities. Participants had the choice of returning the completed questionnaire via facsimile, email, internal mail or by placing the questionnaire in the survey box at the Visitors Reception and Information Kiosk at both campuses.

3.16.3 Interviews

The researcher conducted face-to-face interviews with within case 3 participants in a location of their choice. Most informants chose to be interviewed in their offices at their place of work. The researcher rescheduled appointments with several of the key informants before securing a date and time that suited the participants. The interviews were semi-structured and had open-ended questions. The questions where few in number and was intended to elicit views and opinions from the participants. The interview schedule served as a framework which guided the discussions around the three main topics of interest to this study (Appendix I). The interviews lasted 15 to 20 minutes and were recorded after the researcher received permission from the participants to record the interviews. The recordings were done by using

the voicenote feature of the researcher's handheld cellular device. The voicenote recordings where transferred to the researchers laptop so that the volume of the recordings could be enhanced via the Windows Media Player software programme. The researcher transcribed the interview recordings and saved the recordings on the researchers password protected laptop (Appendix J).

3.17 SUMMARY OF CHAPTER

There are fundamental concepts detailing which research methods are applicable and what represents acceptable research. In order to conduct mixed-methods research it was important to know what the assumptions are about qualitative and quantitative research methods. A mixed-method approach was applied in this case study as this approach enabled the integration of both a qualitative and a quantitative approach. This study used pragmatism as an interpretive framework using inductive and deductive evidence to discuss values that reflect the researcher and participants' views. The researcher used a study design combining a survey and case study method and worked with two data banks (statistical and case analysis data). Descriptive surveys provided more definitive data to describe the existing distribution of variables and a multiple case study design was used as a strategy for in depth inquiry about the topic under investigation. Pragmatism was the philosophy underlying the approach and concerned the applications and solutions to problems. Two universities were the primary cases, wherein separate within case samples were formulated. Age, gender and length of service were not considered as part of the inclusion and exclusion criteria. Employees listed on the ongoing payroll of the departments selected to join in the study were invited to participate. Purposive sampling was used to obtain rich perspectives and replication logic was applied in the multiple-case studies. Key informants provided distinct yet complementary information specific to the population being studied. After receiving permission to contact University personnel the researcher forwarded an emailed invitation to the HR department at University-A and to each participating departmental manager at University-B. Official documents, questionnaires and unstructured interviews were the three sources of data that was collected and triangulated to validate the findings.

CHAPTER 4

Injury prevention and management facts and figures

"Do not put your faith in what statistics say until you have carefully considered what they do not say".

(William.W.Watt, 1871-1946)

4. RESULTS

4.1 INTRODUCTION

This chapter presents the facts that were uncovered during the fieldwork and reflects the actual findings which appear as straightforward descriptions of the data. Text, tables and histograms are the visual forms that have been used to present the data collected from the three data collection methods. The questionnaire has four sections which collected information about specific topics of interest to this study. The eight questions in section one provides information about the processes that are applied to help in the administration of injury prevention at the primary sites. The questions in section one are followed by nine questions in section two which examined the health and safety procedures that are in force at the participating universities. Section three has eight questions describing how the occupational health and safety management systems are operationalized by staff at local universities. Section four is the shortest section and consists of five questions providing a brief demographic overview of the personnel participating in the injury prevention landscape within the participating HEI settings.

4.2 DEMOGRAPHICS

The sample population consisted of two hundred and twenty-six employees working at two universities. Thirty eight (66.6%) respondents worked in the departments partaking in the study; the other nineteen (33.3%) respondents were health and safety representatives who were within case 1 participants. Fifty seven (n = 57) questionnaires were received from non-academic staff, i.e. twenty-three (40.4%) females and thirty-four (59.6%) males (Figure 2).
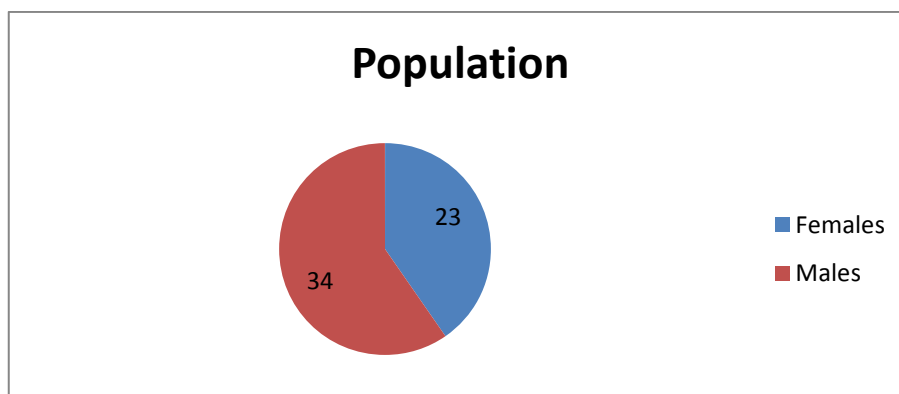
Figure 2: Research Sample

Fourteen (24.6%) respondents worked in the Maintenance department, twelve (21.1%) worked in the Traffic and Risk services department, six (10.5%) worked in the Health and Safety department, two (3.5%) worked in the Estates and Custodial services department and four (7%) worked in the Human Resources department.

Table 4.2a: Participating departments

Departments	Frequency	Percent
Estates	2	3.5
H&S	6	10.5
HR	4	7.0
Maintenance	14	24.6
Traffic & Risk	12	21.1

Fifty-three (92.9%) respondents were from University-A, and four (7%) respondents were from University-B. Twenty (35.1%) Health and safety representatives were within case 1 participants, twenty seven (47.4%) workers from participating departments were within case 2 respondents and ten (17.5%) managers were within case 3 participants (Figure 3).
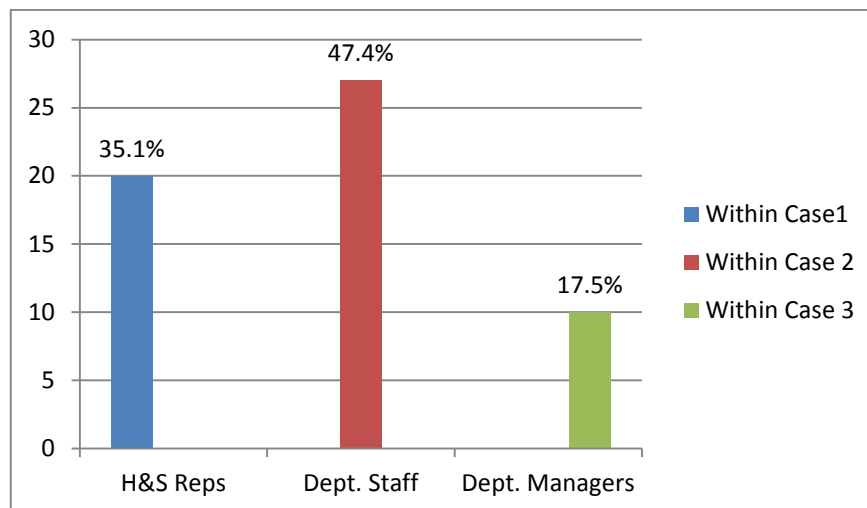
Figure 3: Respondent Categories

Twenty four (42.2%) respondents worked at the university for less than nine years. Nineteen (33.5%) respondents worked at the university for nine to eighteen years. Eight (14.3%) respondents worked at the university for nineteen to twenty eight years. Four (7.2%) respondents worked at the university for twenty nine to thirty eight years. Two (3.6%) respondents worked at the university for forty three to forty nine years.

Table 4.2b: Participant employment period at the HEI

Period Employed	Staff	Years of Service	Percent
1965 - 1975	2	43 - 49	3.6
1976 - 1985	4	29 - 38	7.2
1986 - 1995	8	19 - 28	14.3
1996 - 2005	19	9 -18	33.5
2006 - 2014	24	≤ 8	42.2

4.3   RESULTS OBTAINED FROM QUESTIONNAIRES

4.3.1   Section 1 – Injury prevention administration

Questions under Section 1 of the questionnaire focused on providing information about the processes that are applied to help in the administration of injury prevention at the primary sites.

Table 4.3a: Injury prevention procedures

Question 1.1: Reporting injuries	Frequency	Percent
Manager & SHE Rep	43	75.4
Don't know	12	21
Security	2	3.5
Question 1.2: Injury on duty procedure		
Yes	36	63.2
I don't know	21	36.8
Question 1.3: Reporting to security		
Yes	13	22.8
I don't know	44	77.2

Forty-three (75.4%) respondents reported injuries on duty to their Line manager and the Health and Safety representative and twelve (21%) respondents did not know who injuries on duty should be reported to. Twenty-one respondents (36.8%) did not know whether their employer had an injury on duty procedure and forty four (77.2%) respondents did not report injuries to security personnel.
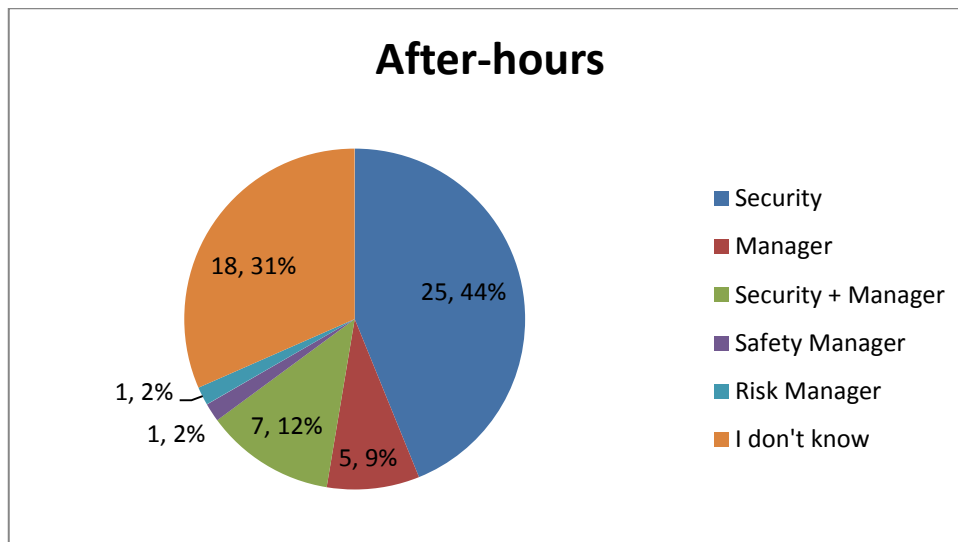
Figure 4: After-hours injury on duty management

Twenty-five (44%) respondents indicated that they would report injuries that occur after-hours to a security officer, whilst eighteen (31%) expressed that they did not know what to do if an injury occurred after-hours.
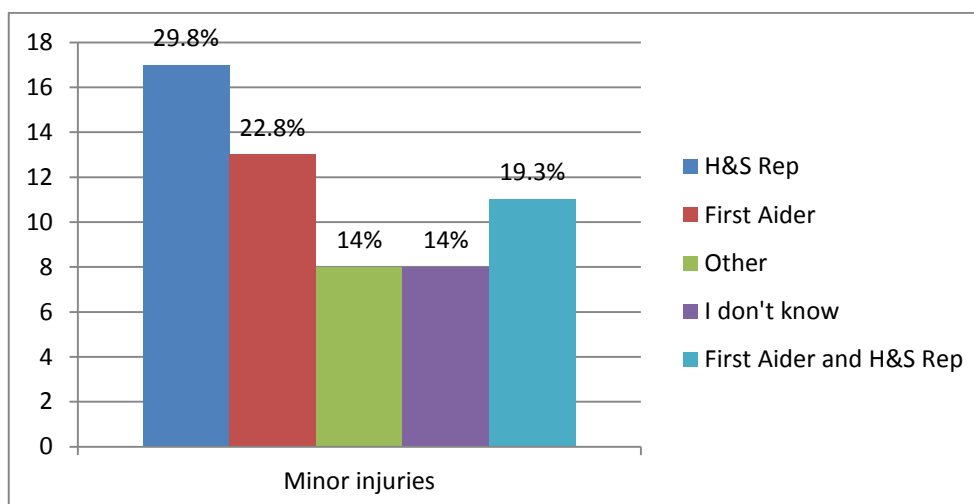
Figure 5: Staff most likely to deal with minor injuries

Seventeen (29.8%) participants expressed that they would report minor injuries to the Health and safety representative, thirteen (22.8%) would report a minor injury to a First aider. Eleven (19.3%) respondents stated that they would report a minor injury to both of these health and safety appointees. Eight (14%) respondents indicated that they did not know where staff could find assistance to deal with minor injuries.

Question 1.7: Injury on duty	Frequency	Percent
Yes	22	38.6
No	35	61.4
Question 1.8: Injury forms		
Yes	24	42.1
No	33	57.9

Thirty-five (61.4%) respondents have not sustained an injury on duty, while twenty-two (38.6%) respondents reported that they had sustained an injury on duty. Twenty-four (42.1%) respondents stated that they have completed injury on duty documents for an injured employee and thirty-three (57.9%) respondents have not assisted in the completion of injury on duty forms.

4.3.2 Section 2 – Occupational health and safety policies and procedures

Table 4.3c: Occupational health and safety policies

Question 2.1 Injury policy	Frequency	Percent
Yes	33	57.9
No	8	14.0
I don't know	16	28.1
Question 2.3 Safety policy		
Yes	39	68.4
No	6	10.5
I don't know	12	21.1

Thirty-three (57.9%) respondents confirmed that the employer had an injury on duty policy. Sixteen (28%) respondents expressed that they did not know if their employer had an injury on duty policy and eight (14%) respondents reported that their employer did not have an injury on duty policy. Thirty-nine (68.4%) respondents indicated that their workplace had a health and safety policy, however twelve (21.1%) respondents were unsure and six (10.5%) respondents did not know if a safety policy was prescribed at their workplace.
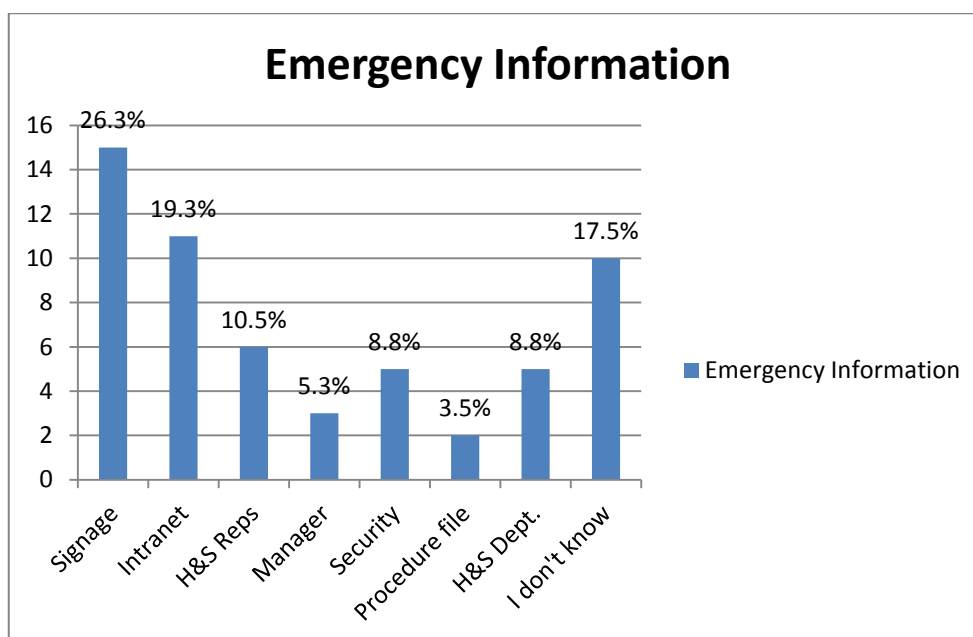
Figure 6: Where staff locates emergency information

The four highest responses indicated that fifteen (26.3%) of the respondents selected signage as their main method of obtaining emergency information. Eleven (19.3%) respondents reported that they used the university intranet to find emergency information and six (10.5%) respondents obtained emergency information from health and safety representatives. Ten (17.5%) respondents indicated that they did not know where to find emergency information.

Table 4.3d: Participation in information sessions

Question 2.4: Employee wellness days	Frequency	Percent
Yes	38	66.7
No	19	33.3
Question 2.6: Safety Induction		
Yes	14	24.6
No	43	75.0

Thirty-eight (66.7%) respondents participated in wellness days arranged at their workplace. Forty-three (75.5%) respondents reported that they did not receive health and safety induction before commencing work at the university.
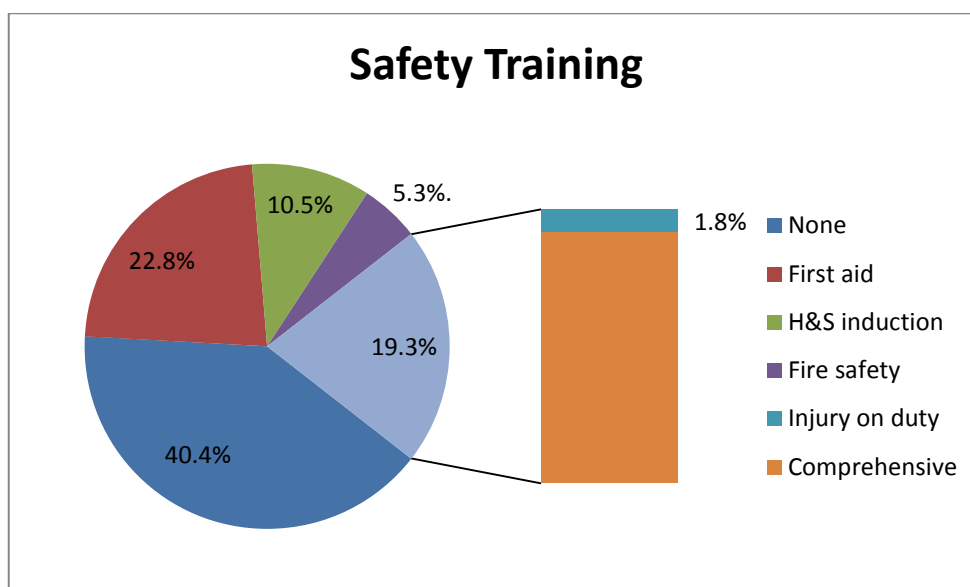
Figure 7: Provision of occupational health and safety training

Twenty-three (40.4%) respondents reported that they did not receive any health and safety training. Thirteen (22.8%) respondents reported that they received First aid training, eleven (19.3%) respondents received more than one type of health and safety training, six (10.5%) respondents received health and safety induction, three (5.3%) respondents received Fire safety training and one (2%) respondent received injury on duty training.

Table 4.3e: Occupational health and safety information

Question 2.7: H&S Information	Frequency	Percent
No	5	8.8
Weekly	2	3.5
Monthly	28	49.1
Quarterly	11	19.3
Every Semester	4	7.0
Once Yearly	7	12.3
Total	57	100.0

Twenty-eight (49.1%) respondents indicated that they would like to receive more health and safety information on a monthly basis. Eleven (19.3%) respondents would like to receive health and safety information on a quarterly basis, seven (12.3%) respondents would like to receive information annually, four (7%) respondents would like to receive health and safety information every semester and two (3.5%) respondents would like to receive health and safety information on a weekly basis. Five (8.8%) respondents indicated that they did not want to receive any health and safety information.

Question 2.8	Frequency	Percent
Safety signs	28	49.1
Email	21	36.8
Pamphlets	16	28.1
Safety Talks	14	24.6
Posters	14	24.6
Workshops	13	22.8
Training	12	21
Video clips	11	19.3
Newsletters	10	17.5
Online	9	15.8
Intranet	9	15.8
None	8	14
Seminars	8	14
Brochures	7	12.3
Demonstrations	7	12.3
Presentations	6	10.5

Twenty-eight (49%) respondents used safety signs, twenty-one (36.8%) respondents used emails, sixteen (28%) respondents used pamphlets, fourteen (24.6%) respondents used safety talks and posters, thirteen (22.8%) respondents used workshops (22.8%) as resources to obtain information about injury prevention. Twelve (21%) respondents reported using training as a type of injury prevention information. Eleven (19.3%) respondents reported using video clips as a source of injury prevention information. Ten (17.5%) respondents reported using newsletters, nine (15.8%) respondents used the internet and the company intranet, eight (14%) respondents used seminars, seven (12.3%) respondents used brochures and demonstrations and six (10.5%) respondents reported using presentations as sources of injury prevention information. Eight (14%) respondents did not use any resources to obtain injury prevention information.

4.3.3 Section 3 – Occupational health and safety structures and services

Table 4.3g: Occupational health and safety management system

Question 3.1: H&S Rep	Frequency	Percent
Yes	42	73.7
No	15	26.3
Question 3.2: Safety Committee		
Yes	34	59.6
No	12	20
I don't know	11	19.3

Forty-two (73.7%) respondents knew who the health and safety representative was for their work areas. Fifteen (26.3%) respondents did not know who the health and safety representative was in their workplace. Thirty-four (59.6%) respondents knew that a health

and safety committee was established at their workplace; however eleven (19.3%) participants reported that they did not know if a safety committee was established and twelve (20%) participants reported that a health and safety committee did not exist at their workplace.

Table 4.3h: Operating the OHS management system

Question 3.3: Coordinating H&S	Frequency	Percent
SHE Committees	12	21.1
Safety Manager	7	12.3
SHE Reps	4	7.0
Safety Structure	5	8.8
I don't know	29	50.9
Question 3.4: Overall responsibility		
Manager	12	21.1
SHE Dept.	14	24.6
Section 16.2	2	3.5
Vice-Chancellor	12	21.1
All staff	3	5.3
Don't know	14	24.6

Twenty-nine (50.9%) respondents did not know how health and safety was coordinated at the university. Twelve (21.1%) respondents considered the coordinating of health and safety to be the responsibility of the Health and Safety committee and seven (12.3%) thought that coordinating health and safety was the duty of the Safety manager. Fourteen (24.6%) respondents did not know who had overall responsibility for health and safety at their place of work. Fourteen (24.6%) respondents thought that the Health and Safety Department, twelve (21.1%) respondents thought the Safety Manager or the Vice-Chancellor (21.1%) has overall responsibility for health and safety at their workplace.

Table 4.3i: Emergency controllers

Question 3.5: Emergency decisions	Frequency	Percent
Risk Management Team	9	15.8
Safety Manager	11	19.3
Emergency Controller	5	8.8
Vice Chancellor	1	1.8
Senior Leadership Group	6	10.5
I don't know	17	29.8
Manager	8	14.0

Seventeen (29.8%) respondents (29.8%) did not know who the decision makers were in an emergency situation. Eleven (19.3%) respondents believe that the Safety manager makes emergency decisions; nine (15.8%) respondents thought that the Risk management team

were emergency controllers and eight (14%) respondents thought their Line manager to be the person responsible for making decisions in an emergency situation.

Table 4.3j: Occupational health and staff health services

Question 3.6: Staff health	Frequency	Percent
Yes	28	49.1
No	10	17.5
I don't know	19	32.6
Question 3.8: Counselling service		
Yes	41	71.9
I don't know	16	27.9

Twenty-eight (49.1%) respondents reported that a staff health service was available at their workplace. Nineteen (32.6%) were unsure whether a staff health service was available and ten (17.5%) stated that there was no staff health service on campus. Forty-one (71.9%) respondents reported that a staff counselling service was available at the university; however 16 (27.9%) respondents did not know if this service was offered at their place of work.

Table 4.3k: Prevention of injuries on duty

Question 3.7 What staff considered to be most effective	Percent
Question 3.7.4 Training to prevent and manage injuries.	36.8%
Question 3.7.1 Information about injuries on duty.	24.6%
Question 3.7.5 Organizational support to manage injury prevention.	19.3%
Question 3.7.2 Staff interaction when dealing with injury on duty management.	10.5%
Question 3.7.3 Occupational health and safety services	7%

Twenty-one (36.8%) respondents considered training to be the most effective means to prevent and manage injuries. Fourteen (24.6%) respondents considered information about injuries on duty to be the most effective way of preventing staff injuries. Eleven (19.3%) respondents considered organizational support as the most effective manner of managing and preventing injuries. Six (10.5%) respondents felt that staff interaction was most effective in injury prevention and four (7%) respondents considered that OHS services would be most effective in preventing and managing staff injuries.

4.4 RESULTS OBTAINED FROM KEY INFORMANT INTERVIEWS

4.4.1 Semi-structured Interviews

Table 4.4a: Question 1 - Challenges in the management of injuries on duty

Department	University-A Question 1	University-B Question 1	Main Issues
Health and Safety	Basically getting funding for materials. I think management, senior management support is poor, they interested in serious injuries they not interested in smaller injuries and the prevention thereof.	In certain faculties health and safety is included in the curriculum for students as an introductory level. For first years we do orientation and specific information on health and safety in their areas. Staff orientation makes a brief provision (10 minutes) for H&S to discuss matters with new staff.	1. Funding 2. Lack of support 3. Administration and paper work delays.
Maintenance manager	The challenges we have is completing the paperwork promptly and also because we want to get the person to the hospital as soon as possible...The information is there but not all staff know how to deal with injuries or what action to take. This can cause more damage.	"To be quite honest…very few challenges. Supervisors and foremen know the procedures. They inform H&S or Security and take the person to the offsite doctor and he will complete the necessary forms. Our process currently works smoothly"	4. Paperwork takes a lot of time. 5. Lack of knowledge and training.
HR Practitioner	"I haven't really managed any injuries while being here, but in my experience a challenge has been the delayed reaction or response in dealing with the incident. You have someone coming to you and you need to react quickly if you don't have the required knowledge… it makes you panic. Not knowing who to contact would just make things more complicated."	There isn't a comprehensive safety induction but I would imagine that the department has to do the induction with the incumbent. From HR there is only a basic induction twice a year in January and July…My suggestion is that as far as I know that the H&S Committee will provide H&S information to the incumbent. HR arranges a 10 – 15 minutes very basic intro to the university. It broadly introduces the person to the services on campus. I have no idea if someone is representing the university on the H&S Committee. I assume that there may be a link since the H&S officer has recently been moved out of HR to the infrastructure and facilities maintenance department. I think that in most cases injury prevention benefits to HR is overlooked because the benefits aren't immediately obvious.	6. Lack of support in managing injuries. 7. Lack of knowledge and training. 8. Injury prevention benefits overlooked.
Estates manager	I have lots of outsourced staff and its difficult to ensure that these employers are ensuring that their staff adhere to our safety policy. Our SLA places	"To be quite honest…very few challenges. Supervisors and foremen know the procedures. They inform H&S or Security and take the person to the	9. Lack of monitoring the systems. 10. Lack of

Department	University-A Question 1	University-B Question 1	Main Issues
	the responsibility on the contract company but we still have to ensure that they don't introduce problems and hazards in our areas.	offsite doctor and he will complete the necessary forms. Our process currently works smoothly"	compliance.
Traffic Services manager	For example report to the supervisor who reports to me but I think that should be the other way around. The supervisor and officers or workers should come to the manager, I must sign the forms. But I don't know half the story, whereas the supervisor is there her knows everything, but I'm supposed to sign and I don't know everything. That's a bit of a hick up, they should rather come report to me both that was there and we simultaneously can complete the form. They need to do this simultaneously and not half, half. That was one of the things then there is the halfcocked story, you doubt what they say, did it happen that way you know things like that. I believe that on the day not a couple of days afterwards are not on. On the day that the injury occurs you have a more true reflection, but they go home first and ponder how they gonna address this… My first initial response is did it really happen. Like Keith is injured at Hiding, he had a cut on his leg, he came to me directly and told me this happened, he showed it to me but he doesn't want to go the other route. But I made him put in the report that he refused to go that route.	My role is to assist with evacuation and to ensure that buildings are evacuated under 3 minutes, train Security in Level 3 First Aid and Fire safety… Unannounced fire drills in first semester and second semester orientation and announced safety fire drills. When we roll out fire drills everybody must take part in it. Safety pamphlets are distributed in the residences…We started going on the website in security in 2010 but health and safety is not on the website yet… Most health and safety is communicated via pamphlets…There is a health and safety policy but it is kept by the H&S department and deals with chemistry waste on campus… Ask the H&S coordinator for a copy of the policy."	11. Lack of enforcing procedures. 12. Lack of communication and feedback.

Table 4.4b: Question 2 – Constraints implementing an OHS system

Department	University-A Question 2	University-B Question 2	Main Issues
Health and Safety	Basically I think it's more a communication thing, management taking responsibility, I don't know how to put it - JA I would say accountability. For example, maybe I can explain, it's like we have information about an injury on duty, we give it the reps but the managers	Each department completes their own annexure 1 report. H&S only reports it to the DOL. Major problems in communicating and providing the necessary documents. People don't return the documents which prolongs the IOD process.	1. Poor communication 2. Lack of accountability. 3. Lack of support. 4. Communication problems. 5. Staff denied treatment.

Department	University-A Question 2	University-B Question 2	Main Issues
	are not interested because there is somebody else that looks after that, you understand? So you find that the forms need to be filled in management start asking questions, they weren't interested when you made the information available.	Staff pays out of pocket and the reimbursements take very long which makes staff very unhappy. The whole IOD problem is that treatment is denied by Drs, this is a big problem for us. Each department must document the near-misses, but that is not happening. We don't have an electronic system to document incidences. Most of our injuries are ergonomic factors and muscular injuries.	6. Incidence under reporting 7. Outdated manual system of reporting.
Maintenance manager	I won't say I've had any constraints but I haven't put in place any departmental manifesto. So we didn't do anything specific.	Works well to treat minor injuries. We have had 2 incidences where orthopaedic injuries where people want to go to private hospitals and Drs. refuse to treat COIDA cases. Everything else works well. We have had cases years ago where COIDA paid someone back for an injury on duty. We have had some cases where people try to use IOD to get some days off from work. As far as I know nobody has self-harmed for monetary benefits. We don't have many injuries on duty, as you will see from the reports. All staff know to report anything that happens. We have a problem implementing and enforcing safe operating procedures e.g. PPE.	8. Lack of strategy. 9. Lack of implementation. 10. Drs refuse to treat staff.
HR Practitioner	I'm the type of person who needs to sit and read through a policy in order to understand it. If it's not completely clear to me I will check with someone who has dealt with a similar case. I wouldn't go all maverick. I would need to know where to find the policy and need to understand it. I would look for an HR colleague who is able to guide me.	I think the HR manager would be better able to answer these type of questions.	11. Policy not communicated 12. Lack of guidance.
Estates manager	I don't really have any challenges. I am in apposition where I can dictate what is required and the contractor has to adhere or leave our campus. I have a good partnership with	Works well to treat minor injuries. We have had 2 incidences where orthopaedic injuries where ppl want to go to private hospitals and Drs. refuse to treat COIDA cases.	13. Misuse IOD 14. Incidences not reported 15. Outdated system

Department	University-A Question 2	University-B Question 2	Main Issues
	health and safety and depend on them to see that things in our safety plan are in order.	Everything else works well. We have had cases years ago where COIDA paid someone back for an injury on duty. We have had some cases where ppl try to use IOD to get some days off from work. As far as I know nobody has self-harmed for monetary benefits. We don't have many injuries on duty, as you will see from the reports.All staff know to report anything that happens.We have a problem implementing and enforcing safe operating procedures eg. PPE.	
Traffic Services manager	Obviously. Because I started in 2004 this has been established already I also had to like just fall inline stuff was here already. I think we need to reviews more often about our system so that most of us are in comfort with managing employees and those that are injured. To get a better understanding or… Understanding. But also debate how you feel, how you see things and then the SHE manager can facilitate the process and give us better input and say this is this and that is that, this why you do things like this. Because we don't have the authority, but if we sitting in a workshop explaining these things to us and debating on it can help me as a manager but we don't have that. Exactly that is what we lacking, I'm year 10 years in April, but ask me if I have ever been in a workshop where SHE things were spoken about. You must just step and go to this committee and most of our things are not H&S relate more risk, I sit more on the risk capacity than on the health, but I'm a manager there should be a balance between risk and health and safety.	I think h&s is the unit coordinators responsibility on the site. Our policy should be visible to all in the workplace. People should be aware that they are also responsible for their safety. We deal with staff and students in labs and people must be trained. Certain policies must be in place and the policies guide us. As far as traffic is concerned do we have the necessary protective equipment…The fact is that speed limits is a problem. People are speeding on campus. We are starting a campaign to raise awareness that road safety applies on campus as well. People should know who the fire marshal and first aiders are in the departments. We are starting now to have the names in the H&S Forum… the Committee sits once a quarter. H&S reps have regular departmental meetings with the Safety coordinators…SHE Reps forward reports to the person sitting on the Safety Forum. H&S issues are raised on this forum – five campuses in CT all sit on this main H&S forum which started last year…We are making use of service providers our SLAs state that they must provide their	16. Old system. 17. Staff not involved in process – input to system. 18. Lack of communication. 19. Training issues. 20. Lack of policy guides. 21. Speeding on campus. 22. No safety appointees. 23. Lack of awareness 24. Fledgling H&S committee. 25. Appointees not finalized. 26. No structure. 27. Smoking and drinking in residences. 28. No EMS service. 29. No afterhours student health service. 30. No staff health service. 31. Lack of policies.

Department	University-A Question 2	University-B Question 2	Main Issues
		staffs PPE, if we have a minor maintenance issue and safety signs which comes from the maintenance committee budget… They start now with the training of H&S Reps for departments after being nominated in the department. After training they will be appointed… Operations work very well… No constraints in the way that PSD and H&S operate in the Risk management dept. Security and H&S work closely… Certain things only come up in the forum. People going to security instead of the H&S officer. PSD only hearing after the incident happened. We have a electronic system to record all incidences on campus. Student awareness needs to be raised about smoking and the use of hookah pipes on campus. The incident protocol is that security must be informed and the student is taken to the clinic then they decide to contact EMS…I think we want to start the ER24 programme on campus. On Bellville we make use of the learner EMS trainees. We are negotiating a partnership with Paramedic students to assisting with incidences. Major concern on weekends when students fight and drink. Student health clinic is closed on weekends and security has to take the risk of taking students to Tygerberg. Risk is placed on the security and the policy does not provide guidance in these grey areas.	

Department	University-A Question 3a	University-B Question 3a	Main Issues
Health and Safety	I would say it's very informal at the moment because you don't have the necessary buy in from management, I would like us to have more training commitment from management. We could organize training for management because you can disseminate with people on the ground but It's difficult to disseminate with people in leadership.	We are busy now to get processes in place and to train health and safety reps. We are still in the process of implementing a system.	1. Lack of support 2. Management not interested 3. Managers not interested in training. 4. Negative attitudes towards H&S. 5. Training not done. 6. Old systems 7. OHS not implemented.
Maintenance manager	"Standard operating procedures are in place. Like in terms of specific jobs we use specific PPE and demarcate areas to protect others and the property. We have job specific procedures".	Safe work procedures and enforcing the use of safety equipment.	8. Standard operating procedures. 9. Job specific protective gear.
HR Practitioner	None, it's not even until you came to me with these questions that it has crossed my mind.	I think the HR manager would be better able to answer these type of questions.	10. None
Estates manager	I have service level agreements which bind contractors to the requirements of the law and I rely heavily on the Safety department to ensure that the contractors are audited. I communicate to the contractors to ensure that they cooperate with the safety department and to ensure that we address any issues and concerns that are raised in safety meetings and through the safety reports.	Safe work procedures and enforcing the use of safety equipment.	11. None
Traffic Services manager	Look we don't have a policy have never seen anything yet and highlighting something to me that could have been done. I have the liberty to go to the manager and I'm talking about the health and safety manager and I could have highlighted this because of the nature of our work, we at risk more than anything else we standing in road regulating traffic. The only thing that we put in place is wear your reflective, it's not a policy it's a talkable situation, it's a practice. It is a work practice and it has a history. When you do a point duty or if you stand out in the street you	It is currently not being monitored.	12. Nothing

Department	University-A Question 3a	University-B Question 3a	Main Issues
	need to be clothed properly with the proper attire at night you need have a torch you need to be out there. "lyk soes die maan" I can't recall having a policy,which says... And then we need help, then we really need help. I have noticed… There is no dead thing that I can take off the shelf and say here is a policy.		

Table 4.4d: Question 3b – Monitoring effectiveness of the OHS system

Department	University-A Question 3b	University-B Question 3b	Main Issues
Health and Safety	I won't say it's monitored, reports are written, graphs are forwarded but there is no analysis or somebody that comes back or action. If you use that statistics to ask for funding you get told about caps. I think my questions will be more different to other people's as I have a responsibility for those functions	Currently we are busy implementing a safety system and thus far we have not monitored or assessed what we are putting in place. We intend having an internal audit on our campuses as an action plan for this year.	1. Not monitored
Maintenance manager	Monitored by the Supervisor or the Line manager by ensuring that the SOPs are in place…I would say it is a high risk place because H&S is not practiced in all areas. In the field it is not practiced and falls short and people who have to monitor the policies turn and look the other way.	The employer, Manager and Supervisors, have to ensure that staff under their authority are adhering to the safe working practices.	2. Not monitored
HR Practitioner	The effectiveness is not being monitored. Let me give you an example - I went to P&S and I tripped and fell in the building and a man and a lady saw me fall and they didn't offer to help me, they just looked at me.	I think the HR manager would be better able to answer these types of questions.	3. Not monitored
Estates manager	I depend on our safety systems that are overseen by the health and safety department and trust that any items of concern will be flagged by the system. In my opinion it is working well to help me in my portfolio.	The employer, Manager and Supervisors, have to ensure that staff under their authority are adhering to the safe working practices.	4. System dependent
Traffic Services manager	It's not recorded anywhere, but because it being a common practice, before any person go out and do a job we inspect them so for example there's a … in the evening they must report to the supervisor, the supervisor will then inspect	It is currently not being monitored.	5. Not monitored

	them to a see that they have the necessary paraphernalia on which will suite the situation when it turns dark. It's written down its common practice.		

4.5 INTERVIEW THEMES

Seven main themes emerged from the twelve interviews that were conducted at the participating universities. The themes from the transcribed interview responses were counted The themes that emerged were a lack of funding of health and safety, lack of support from executive management to implement and enforce injury prevention mechanisms, a lack of accountability to hold perpetrators responsible for safety noncompliance's, misuse and abuse of injury on duty provisions, administrative delays and overloading of paperwork, a lack of knowledge about health and safety and injury prevention, a lack of training to increase safety awareness and safe practices, a lack of communication and feedback amongst staff and managers which creates a barrier to promoting prevention initiatives and a lack of monitoring, evaluation and feedback of unresolved problems to facilitate the implementation of safe practices.
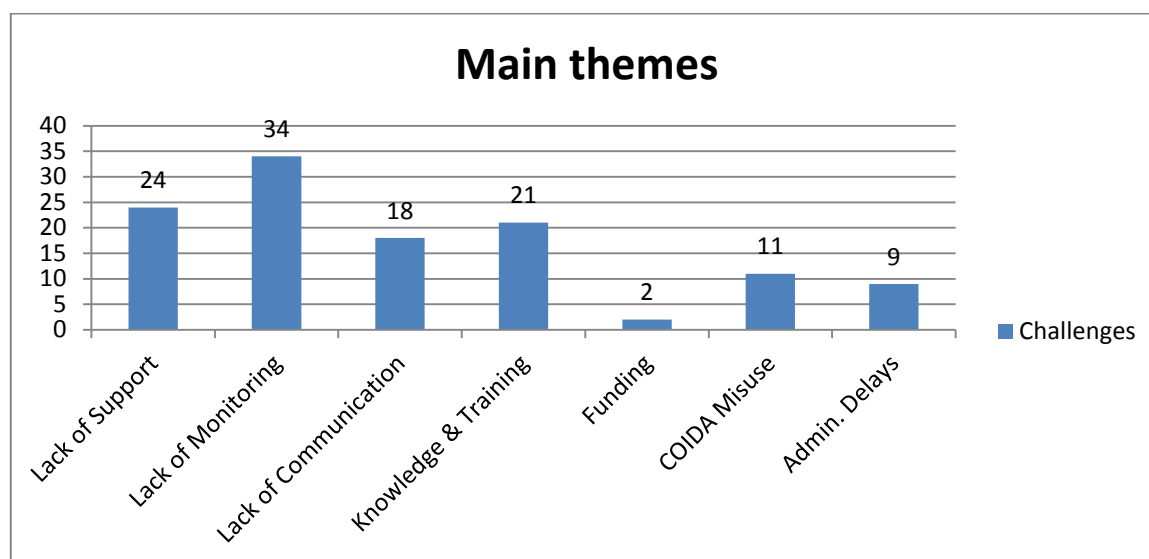
Figure 8: Leading challenges experienced by Dept. Managers

The key informants mentioned the lack of monitoring of health and safety thirty-four times (28%) during the interviews. Twenty-four times (19.8%) interviewees expressed that a lack of support and accountability was a challenge. The lack of health and safety knowledge and training was expressed by key informants on twenty-one (17.4%) occasions. Eighteen (14.8%) interviewees reported that a lack of communication and feedback contributed to the

challenges that they experienced. COIDA misuse was reported by eleven (9%) informants and administrative delays with injury on duty paperwork were reported as a challenge by nine (7.4%) key informants. Two (1.6%) respondents expressed that a lack of funding contributed to the challenges that they experienced.

Table 4.5: Leading challenges to injury prevention and management

Reported Challenges	Total	Percent
Lack of Monitoring	34	25.40%
Lack of Support	24	21%
Knowledge & Training	21	18.40%
Lack of Communication	18	15.70%
COIDA misuse	11	9.64%
Admin. Delays	9	7.89%
Funding	2	1.75%

The interview responses indicate that Line managers experienced the most challenges in the management and prevention of injuries. Figure 9 illustrates the challenges expressed by each department. The Maintenance department respondents expressed the seven challenge themes nineteen times. Supervisors expressed the challenge themes sixteen times. Executives expressed the challenge themes fifteen times. The Health and Safety department expressed the challenge themes fourteen times. The Human Resources respondent expressed the challenge themes eleven times. The Traffic Services department respondent expressed the challenge themes ten times. The Estates and Custodial Services department interviewee expressed the challenge themes eight times.
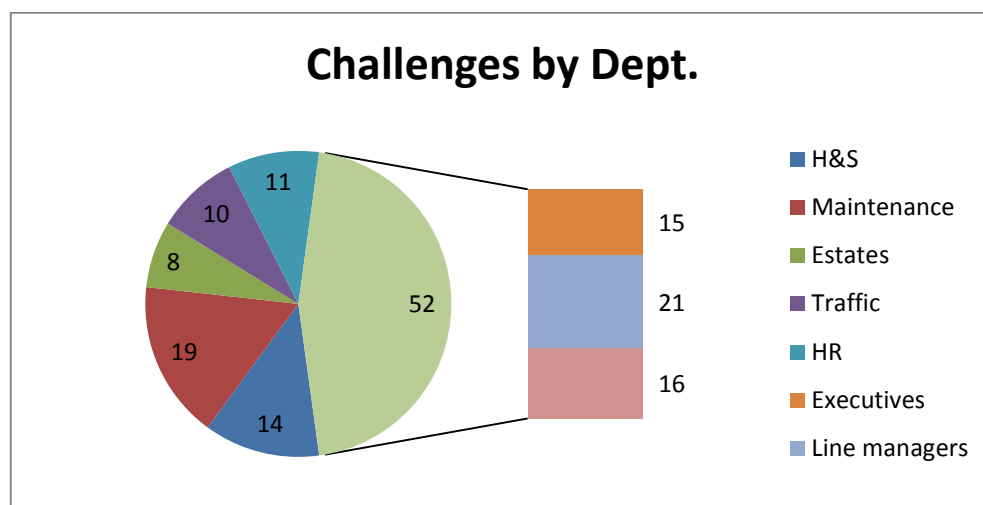
Figure 9: Rate of injury prevention and management challenges

The responses and themes were calculated to quantify the challenges experienced by the participating departments. The experiences reported by each key informant are depicted in Figure 9. The pie chart illustrates the challenges expressed by within case 3 participants as a bar and represents the responses from Executive directors (13.2%), Line managers (18.4%) and Supervisors (14%).

4.6 RESULTS OBTAINED FROM A REVIEW OF OFFICIAL DOCUMENTS

4.6.1 Occupational Health and Safety documents used to prevent and manage injuries in the workplace.

4.6.1.1 WCL 2 Employers report of an Accident

The WCL2 form is a Department of Labour prescribed COID Act document that must be used to record any injury or accident that occurred while the employee was busy with work activities. This document has to be signed, dated and fully completed by the employer so that the injured employee can access medical treatment. At University-A comprehensive electronic and hard-copy injuries on duty documents for the time that this study was conducted (2012-2013) was available for review. University-A registered thirty nine claims with the Compensation Fund in 2013 which was a slight increase of cases reported in 2012. The employees that were affected worked in five of the eight university faculties and seven of the fourteen support departments.

Table 4.6a: Injuries on duty reported to the Department of Labour

Year	Total Injury Claims	Faculty Areas	Total	Support Depts.	Total
2013	39	Health Science Commerce Humanities Science Engineering	10 1 1 2 3	Theatre Student affairs HR P&S Sports & Rec. Transformation Libraries	2 7 2 5 4 1 1
2012	33	Health Science Science Engineering Commerce Humanities	7 6 3 2 1	Student affairs P&S Student Admissions Transformation	6 5 2 1

4.6.1.2 Annexure 1 Incident Report

The incident report is an official Department of Labour document that is used to record all incidences that occur at work. The Annexure 1 Report has to be completed for all incidences, even if the employee does not require medical treatment. All Annexure 1 reports must be tabled at the Health and Safety Committee meetings and must be signed by the Health and

Safety Committee Chairperson. University-A had an electronic system that Security, Risk services and Health and Safety personnel used to upload information of any incidences that occur at the university. The electronic system also has a paper trail in the form of the Annexure 1 Incident reports which are filed in the Health and Safety office.

4.6.1.3 Security injury or accident record

The security personnel may have a log book containing any information about injuries that may have occurred that are not reported at the staff clinic or to the health and safety representatives. The Security logbook at University-A is an electronic system known as CHASE. All incidences that occur on campus are logged onto the system by the Security staff and the relevant Department representative is notified via SMS (short message service) of any incident which they have to investigate or follow-up. University-B reported that it has a manual system to record any incidences. No records from University-B were made available for review.

4.6.1.4 Health and Safety Committee Meeting Minutes

The Health and Safety Committee (HSC) meetings are prescribed by the OHS Act administrative regulations. The meetings have to be convened on a quarterly basis however; may be convened on a more regular basis if needed. Health and Safety committees are composed of voluntary trained health and safety representatives. The minutes of the meetings have to be retained in a Health and Safety folder as proof of health and safety issues that are being tabled with the Section 16.1 and 16.2 appointees. University-A has an extensive electronic database of Health and Safety Committee meeting minutes which document the activities of the thirty four Health and Safety Committees at the institution. University-B has one Health and Safety Committee that was established in 2012. The Researcher was only provided with a copy of the minutes of the first meeting of the Health and Safety Committee. The Health and Safety Coordinator stated that the Committee meets on a quarterly basis, however no supporting documents were provided for review.

4.6.1.5 Quarterly Inspection Reports

Quarterly Inspection Reports are the instruments used by health and safety reps to check on any health and safety issues in their area of responsibility. All Quarterly inspection reports (QIR) are signed by the HSC Chairperson and the Chairperson hands the QIR's to the OHS Act appointed section 16.1 and section 16.2 delegates. The Section 16.1 and 16.2

appointees are legally liable for the health and safety of workers under their management. At University-A quarterly inspection reports (QIR) are completed and submitted at each Health and safety committee meeting. The hardcopy documents are kept by the HSC Chairperson and copies of the signed QIR are archived by the Health and Safety Dept. These electronic records were stored on an allocated drive and the Researcher was allowed to view a selection of documents from each quarter in 2012-2013 to assess and report on any discrepancies in the records when compared with the requirements put forward by the OHS Act. University-B did not provide any quarterly inspection reports for review.

4.6.1.6 Public documents

Public documents are any employer publications such as work newsletters or work newspapers that are used to provide information about campus wide activities or information of interest to the campus community. University-A had an extensive selection of public documents that was used to communicate with employees. The monthly newspaper, electronic weekly newsletter, electronic pop-up notices, emails, inter-departmental newsletters, electronic noticeboard, University website, VULA electronic communications forum, Facebook pages, blogs, twitter, pamphlets, magazines, brochures, instagram and Youtube videos have been used by University-A to communicate events and information to the campus community. The researcher was able to view examples of the various types of communication that was distributed over the 2012-2013 period. University-B informants reported that a newsletter, pamphlet, campus newspaper and web-based notifications were used to provide information to employees. University-B did not provide any examples of the types of public documents used to provide information to staff and the researcher could not assess these records as part of this assessment.

Table 4.6b: Documented support of the OHS Management system

Official Documents	University-A		University-B	
	Applied	Awareness	Applied	Awareness
Established H&S Committee meeting Minutes	x	x		
Health and Safety Training records	x			
Health & Safety Appointments - Safety Reps	x	x		
Health & Safety Appointments - First Aiders	x	x		
Health & Safety Appointments - Evacuation Marshals	x	x		
Injury on Duty Procedures	x		x	
Injury on Duty Policy				
Health and Safety Policy	x	x		
Health & Safety surveillance system – automated	x			
Health & Safety surveillance system - manual	x	x		
Health and Safety Audit documents - external				
Health and Safety Audit documents - internal	x			
Annexure 1 Incident Reports	x		x	
Employers Report of an Accident	x		x	x
Emergency Procedures	x	x	x	
Emergency Plan	x			
Evacuation Plans	x		x	
General Safety Signage	x	x		
Emergency Contact Lists	x	x	x	x
Risk assessments				
Public access Health & Safety Awareness info.	x			
Health & Safety awareness campaigns				
Health & Safety Inductions		x	x	
Food Hygiene and Food Safety programme	x			
Health & Safety in Staff Development programs	x	x		
Total (25)	**20**	**11**	**7**	**2**

4.7 CONSTRAINTS AND LIMITATIONS

4.7.1 Constraints

The study may have yielded more meaningful results if all the selected departments participated. Employees at the primary case sites displayed either apathy or anxiety when approached to be respondents in the study. Obtaining documents and contacting personnel was laborious due to the lack of feedback from the main referral contacts at the primary case sites. The data collection process was excessively protracted when staff evaded the researcher rather than admitting to not having the requested information available. Data could have been collected and analysed at a faster pace if personnel at the primary case sites were more cooperative.

4.7.2 Limitations

The mixed-method multiple case studies required a considerable amount of resources and time to adequately study the phenomenon. The participant responses were low and restricted the researcher from providing adequate comparisons between the two primary

cases. The findings are not generalizable and are specific to the conditions at the participating sites at the time that the investigation was conducted.

4.8 SUMMARY

This chapter reflects the actual findings uncovered during the fieldwork and appears as straightforward descriptions of the data. Text, tables and graphs are the visual forms that have been used to present the data collected from three data collection methods. The sample population consisted of two hundred and twenty-six employees working at two universities. Fifty-three (92.9%) respondents were from University-A, and four (7%) respondents were from University-B. Forty three (75.4%) respondents reported injuries on duty to their Line manager and twelve (21%) respondents did not know who injuries on duty should be reported to. Twenty-one respondents (36.8%) did not know whether their employer had an injury on duty procedure. Eighteen (31%) respondents expressed that they did not know what to do if an injury occurred after-hours. Sixteen (28%) respondents expressed that they did not know if their employer had an injury on duty policy. Six (10.5%) respondents did not know if a safety policy was prescribed at their workplace. The responses indicated that fifteen (26.3%) of the respondents selected signage as their main method of obtaining emergency information. Forty-three (75.5%) respondents reported that they did not receive health and safety induction before commencing work at the university. Twenty-three (40.4%) respondents reported that they did not receive any health and safety training. Twenty-eight (49.1%) respondents indicated that they would like to receive more monthly health and safety information. Twelve (21%) respondents reported using training as a type of injury prevention information. Forty two (73.7%) respondents knew who the health and safety representative was for their work areas. Eleven (19.3%) participants did not know if a safety committee was established and twelve (20%) participants reported that a health and safety committee did not exist at their workplace. Twenty-nine (50.9%) respondents did not know how health and safety was coordinated at the university. Seventeen (29.8%) respondents (29.8%) did not know who the decision makers were in an emergency situation. Nineteen (32.6%) respondents were unsure whether a staff health service was available on campus. Twenty-one (36.8%) respondents considered training to be the most effective means to prevent and manage injuries. Seven main themes emerged from the twelve interviews that were conducted at the participating universities. The key informants mentioned the lack of monitoring of health and safety and expressed that a lack of support and accountability was a challenge. The lack of health and safety knowledge and training was expressed by key informants and interviewees reported that a lack of communication and feedback contributed to the challenges that they experienced. COIDA misuse was reported and administrative

delays with injury on duty paperwork were reported as a challenge by informants. Respondents in the health and safety departments expressed that a lack of funding contributed to the challenges that they experienced. The interview responses indicate that Line managers experienced the most challenges in the management and prevention of injuries. Figure 9 illustrated the challenges experienced by departments as expressed by within case 3 participants. The study may have yielded more meaningful results if all the selected departments participated. Obtaining documents and contacting personnel was laborious due to the lack of feedback from the main referral contacts at the primary case sites. Data could have been collected and analysed at a faster pace if personnel at the primary case sites were more cooperative. The mixed-method multiple case studies required a considerable amount of resources and time to adequately study the phenomenon. The participant responses were low and restricted the researcher from providing adequate comparisons between the two primary cases. The findings are specific to the conditions at the participating sites at the time that the investigation was conducted and are not generalizable.

CHAPTER FIVE

A Discussion of the Results

"The Twelve Tasks of Asterix - The place that drives you mad."
(Dargaud Film Productions, 1976)

5.1 INTRODUCTION

The nonresponse rate at University-B prevented the researcher from making meaningful comparisons between the participating universities. The results discussed in this chapter are therefore indicative of the setting at University-A. The demographics elucidate the profile of the participating departments and indicate the gender, the length of employment and the participants' familiarity with health and safety and injury prevention procedures at the university. This chapter discusses the findings of a questionnaire which investigated the injury prevention administration, knowledge of occupational health and safety policies and procedures, implementation of occupational health and safety structures and the provision of health and safety training. The discussion of the interviews with management provides insight into the perceptions and experiences of support department managers. The documents that were reviewed serve to complement the findings of the questionnaires and the themes uncovered in the interviews.

5.2 DEMOGRAPHICS

At University-A one hundred and ten females (57.9%) and eighty males (42.1%) worked in the departments participating in the study. The responses indicated that all the participants were non-academic staff. This is supported by the report from the CHE (2009) which found that 38% of the staff at universities are academic. The respondents were mostly South African citizens (96.5%), which was slightly higher than the 90% national average reported by the CHE (2009). The overall demographic profile is consistent with the findings of the HEMIS South Africa Data profile (2012) stating that 62% of HEIs administrative and management permanent staff are female and 37.9% are male. Figure 2 displays the study responses and shows that the response rate among males (59.6%) was higher than that of female participants (40.4%). The response rate among males was higher despite more females working in the support service departments that participated in the study. More responses were received from within case 2 (47.4%) respondents than from within case 1 (35.1%) respondents (Figure 3). This was an unexpected finding as the researcher assumed that more health and safety representatives (within case 1) would be interested in the study because it investigated issues relevant to their duties. The response rate from the work population who are not involved in health and safety was better than expected. The largest number of participants worked at the university for less than eight years and the remainder

worked at the university between ten to fifty years (Table 4.2b). The cohort which more recently started employment at the university was expected to have received safety induction as part of the orientation programme. The findings were contrary to what was expected and indicated that a higher percentage of the participants (75.5%) reported not receiving health and safety induction (Table 4.2c). Nearly 80% of the most recent recruits (those employed after 2007) reported not receiving health and safety induction before commencing work at the university.

5.3 RESULTS OBTAINED FROM QUESTIONNAIRES AND INTERVIEWS

5.3.1 Injury prevention administration

The documents that were reviewed reflect that the university has a comprehensive orientation programme. The researcher reviewed the health and safety section of the orientation programme and found it to be an innovative strategy that utilized a communication method that respondents reported using most (Table 4.3f). While this is one encouraging finding, as stated by Smith (2001) the effective communication of knowledge and transfer of skill to those who can use it has little impact in this setting where a number of other barriers still exists. The lesson plan of the health and safety induction sitting clearly outlined the objectives of the session and made appropriate provisions for the mixed target audience. In view of these positive findings, the researcher was intrigued that respondents reported experiencing a lack of training in spite of documented evidence that training was available. The health and safety designee reports of a lack of training, communication and support makes their preparedness to deal with an incident questionable. The study supports Burton's (2010) conclusions that information cannot be considered knowledge until it is applied.

Training records revealed that besides the initial training provided after appointment as a health and safety designee (safety rep, fire marshal or first aider) employees received no regular updates to equip them in fulfilling their duties. These findings coincide with the psychosocial work environment discussed by Burton (2010) with particular reference to poor work organization. Most of the respondents indicated that they would report a minor injury to the Health and safety rep or the First aider (Table 4.3a). Figure 5 shows that the health and safety reps and first aiders are most likely to be the personnel approached to deal with minor injuries. These responses were found to be procedurally accurate and corresponded with the university policies and procedures. Due to their extended period at the university and familiarity with the way that things are done in this environment, the longer-serving cohorts (those employed before 2004) were expected to be more knowledgeable about injury on duty procedures in this setting. The survey data confirmed this assumption (Table 4.3a) indicating

that the awareness of health and safety procedures increased with the length of service. Most of the long-serving employees indicated that they were injured on duty and did not receive induction or training on injury prevention and the management thereof. The awareness and information they obtained is most likely to have resulted after sustaining an injury on duty or by completing injury on duty documents for an injured colleague (Table 4.3b). Moraru (2012) cautions that behaviour modification should not be viewed as an alternative to sound safety management policies, systems and procedures. This cautionary advice is relevant to this setting. The basic guideline document containing after-hours injury on duty procedures are provided to staff attending safety induction and orientation and is available on the OLF and the OHS website. The researcher earlier established that safety induction sessions are not well attended and prior to 2007 was not part of the staff induction programme. The researcher believes that the large proportion of participants did not know how to manage or report injuries that occur after hour's (Figure 4) because the information was not communicated appropriately. The longer-serving employees appeared to know how to report injuries on duty; however this knowledge was not gained in a proactive manner (via training and information sessions) but rather as a reactive measure after the employee sustained an injury (Table 4.3b). Burton (2010) stated the importance of learning from others which is regarded as an essential principle in developing nations. The fact that participants did not consider interactions between staff to be important in the prevention of injuries is concerning (Table 4.3k). From the data that was analysed longer-serving staff, who knew more about institutional procedures and policies, expressed this opinion more often than newer employees. This finding pointed out that personnel are not likely to share institutional knowledge with colleagues. The university is therefore urged to implement more formal methods to ensure that institutional policies and procedures are communicated to all staff. Moraru (2012) asserts that knowledge about the work situation and about well-being are complementary and encourages interdisciplinary cooperation to maximize the benefits of this knowledge in the context of risk management.

During the interviews two respondents expressed their challenges in managing injury prevention by stating that "the challenges we have is completing the paperwork promptly and also because we want to get the person to the hospital as soon as possible" and "in my experience a challenge has been the delayed reaction or response in dealing with the incident. You have someone coming to you and you need to react quickly. If you don't have the required knowledge, it makes you panic" (Table 4.4a). The statements from participants are consistent with Burton's assertion that often the people in charge of making the workplace healthier and safer are lacking the information or knowledge to do so (Burton, 2010).

5.3.2 Occupational health and safety policies and procedures

The researcher expected all respondents to know about the health and safety and injury on duty policies at the institution. Frank and Cullen (2006) asserts that policies are institutional guidelines assisting employees in understanding the employer's position regarding the legislation on which these policies are based. The non-adherence with health and safety regulations in this setting is therefore not surprising. The research findings indicate that Frank and Cullen's (2006) assertions has relevance to this setting. The widespread lack of knowledge about institutional policies and procedures shapes the non-adherence to injury prevention and health and safety practices. In this setting occupational health and safety was provided in a disconnected manner which is similar to the fragmented provisions of health and safety as noted by Hermanus (1999) in the broader South African context. The shortcomings in efforts to implement occupational health and safety corresponds with studies by Hermanus (1999), DeJoy et al. (2004) and Wachter (2011) who found that the lack of measurable for quality in safety potentially obstructs the organizations overall value statement. The findings that staff was not familiar with the institutional policies was consistent with statements by key informants who mentioned that health and safety is not taken seriously.

The researcher reviewed the data to determine which of the participating departments had interconnecting functions when dealing with new employees. The training records revealed that during induction and orientation most of the departments participating in this study were involved in providing an overview of the functions and services offered to support new employees. The 2013 Staff development Induction and Orientation programme register showed that the attendance was surprisingly low. A meagre percentage (26%) of the new recruits attended the induction and orientation programme. The induction records validated the responses to the questionnaire that indicated that a high percentage of staff did not receive health and safety induction. In the researcher's opinion the low induction and orientation programme attendance rates are a major factor contributing to the current lack of safety awareness on campus. Burton (2010) supports the use of employee recruitment processes as a means to successfully integrate health and safety into the culture of the organization. Key informants provided their perceptions of the reasons for the problem of enforcing company safety policies when stating that "health and safety is not taken seriously" and "health and safety adherence should be made mandatory and not voluntary" (Table 4.4a).

The attendance of the orientation and induction programme is not a mandatory requirement and therefore many new employees selected not to attend these sessions. Missed opportunities to work together were noted as an oversight at the university. The researcher

observed that departments with interrelated activities did not adequately maximize efforts to benefit university stakeholders. These observations are supported by Burton (2010) who found strong links between the integration of workplace health and safety and the simultaneous health of workers and the organization. The decentralized OHS system stems from the underlying ethos of associated independence where departments, divisions, units and institutes are associated with the university yet operate independently. This phenomenon is discussed by Burton (2010) who advises organizations against working in separate silos.

The induction and orientation programme is one example where multiple departments have the opportunity to pool resources to achieve a common goal. The researcher considers that these relationships rarely happen and in this setting is seldom encouraged. As noted by Burton (2010) the lack of knowledge about the benefits of occupational health and safety to other areas may result in the underestimation of risks, implications and consequences for all stakeholders. This opinion is authenticated by the statements from two human resources key informants who reported that "health and safety benefits to HR are not immediately obvious" and "I did not think of these things until you mentioned it" (Table 4.4a and Table 4.4b). Burtons (2010) findings of collaboration and integration being pertinent to all enterprises was confirmed in this setting.

The low rate of participants that reported receiving injury on duty training (2%) points out that information on injury prevention has not achieved priority status in this setting (Figure 7). The respondents conveyed that signage and the intranet are their primary sources of obtaining health and safety information (Table 4.3d). A walkabout in the participating departments revealed that no injury prevention signage was displayed therefore the survey findings, of low levels of injury prevention awareness, are not surprising (Figure 6). The application of legally prescribed safety signage was somewhat better; however the safety signs were not consistently applied throughout university buildings and premises. The interviews suggest possible clues to the low commitment for raising awareness of injury prevention on campus. Interviewees shared that "management are not interested in minor injuries" and a senior manager expressed that "injuries here are not serious" (Table 4.4a). The records on training topics, training requests and staff attendance at information sessions may provide the mistaken perception that staff interest is low therefore staff participation is low. The attendance registers of awareness campaigns indicates a low participation rate which contrasts with the responses from participants indicating that participants would like to receive more health and safety information (Table 4.3c). This incongruence may occur for any number of reasons however the researcher considers a lack of support from managers for staff to attend the information sessions and the inadequate communication about the

training sessions to be possible contributing factors. During interviews with key informants the lack of organizational support and inadequate communication emerged as leading issues among the main themes. Vredenburgh (2002) cites similar issues and advocates an approach that focuses on hiring and training of new personnel. Vredenburgh (2002) wisely cautions that training alone cannot adequately address health and safety issues and should be coupled with proof that safe practice teachings are being implemented in work areas. The data indicated that respondents more readily participated in staff wellness days (Table 4.3b). The researcher believes this effect to result from the more forceful marketing, communication and support strategies devoted to drive staff wellness campaigns. The human resources department has the largest complement of staff and may have a larger share of resources to facilitate the endorsement of HR initiated programmes (Table 4.3b).

Safety appointment letters showed that most of the staff fulfilling the duties of safety designees was non-academic. The data displayed that this category of staff is less likely to use the internet or intranet as a source of obtaining information (Table 4.3d). Most of the university information was in an electronic format that is communicated by the methods least likely to be used by health and safety appointees (Table 4.3d). The implications of this contrast between the findings and the practice at the institution may have far reaching consequences. The aforementioned finding indicates that the strategy to communicate information was designed to interact at the academic level; however academics seldom participate in health and safety structures (Manuele, 2011). This lack of participation inclines the needs of educators, researchers and students to be overlooked when decisions about health and safety are being made. An example of such an oversight was observed in a review of a venue audit document that indicated that teaching venues are not sufficient for the number of students that are attending lectures. The inaccuracy occurring between student intakes and the venue capacities resulted in overcrowding which allowed health and safety concessions to occur in venues across campus. The researcher believes this example to be one of several non-conformances which cannot be monitored and controlled due to the absence of a functional and effective occupational health and safety management system (Manuele, 2011). University policies favour a centralized system, yet divergent actions reported in meeting minutes indicates that faculties, departments, divisions and units are permitted to operate in a decentralized and unregulated manner as noted by Burton (2010). During an interview a senior leader shared his preconceptions which implied that "health and safety restricts research" and that "in order to be innovative researchers have to be mavericks and must take risks in order to make new discoveries" (Table 4.4a).

5.3.3 Occupational health and safety structures and services

Regardless of the poor communication of health and safety information most respondents knew who the health and safety representatives were in their work areas. An analysis of the data indicated that respondents gained the necessary information over time and the awareness arose out of experiences where staff either assisted colleagues with injuries on duty or received assistance when they were injured (Table 4.3a). The activities of health and safety committees were not well known among within case 2 participants. Understanding about the functioning of health and safety committees may be low due to unheard of operations of committees, health and safety reps performing their duties in isolation and the tendency of staff to not share knowledge and information (Zoller, 2003). The work environment and workloads of the health and safety representatives may deter them from organizing opportunities to share information that they have gained with their colleagues.

The majority of the respondents did not know how health and safety was coordinated at the University and were unsure of who had overall responsibility for health and safety at their place of work (Table 4.3b). The researcher found little evidence of information about the reporting structures or the authority figures that have responsibility for health and safety at the institution. This information was known by senior management however staff and health and safety representatives where equally ill-informed regarding the operationalization of the occupational health and safety system at their place of work (Zoller, 2003). Respondents in the questionnaire reported a low knowledge about health and safety structures (Table 4.3b). These findings were paralleled by the statements that were made by key informants who experienced difficulty in understanding what the safety structures were at the university. The interviews with a manager and a supervisor elucidated that "the people responsible for monitoring these things see what is going on but they choose to look the other way" (Table 4.4a). These statements by senior managers, line managers and supervisors indicate that the university manifesto on health and safety is not part of the university culture. As noted by Manuele (2011) the lack of awareness may tacitly encourage risk taking and facilitate the continuation of unsafe actions with impunity. The researcher found flipcharts indicating that emergency information was available at reception desks and on the university website; however respondents were unclear as to who was responsible for making emergency decisions (Table 4.3c). The knowledge about emergency information and emergency procedures was expected to be low due to the problems in communicating information and infrequency of training. The data further indicated that the provision of occupational health and staff health services was not well known and staff may not understand the difference between occupational health and staff health (Table 4.3d). The researcher believed the gaps in communicating information and raising awareness of the value of occupational health and safety services predisposed the university community to the under reporting of incidences

and injuries on duty (Manuele, 2011). Injury on duty records indicated that a substantial number of claims have been reported to the Department of Labour in 2013. These incidences are believed to have a considerable impact on the productivity and cost implications to the university; however a lack of costing records prevented an analysis of the cost implications to the university (Burton, 2010). There was no evidence to indicate that the university conducted any cost analyses to determine the consequences of injuries on duty and related damages to property. This knowledge gap may contribute to the failure of the university to appreciate the value of injury prevention programmes to this setting. The 2012 and 2013 records indicate that the injury patterns are consistently occurring within the same faculties and departments (Table 4.5a); however there was very little evidence to indicate that remedial actions have been monitored and evaluated. Lessons learnt from the reported incidences are absent and corrective actions are not well documented. Injury on duty records (WCL2 and Annexure 1 forms) reflect that the injury reporting procedures are being implemented as required by the Department of Labour. This is consistent with earlier findings that the university is making an attempt to adhere with lawful requirements. The researcher believes that the main themes identified during the interviews serve as a summation of the problems to be addressed in this setting. The 2013 injury on duty reporting documents revealed that the university environment experienced various incidences ranging from falls, back injuries, motor vehicle accidents, eye injuries, cuts, needle stick injuries, work related-upper limb disorders, crushing and inhalation of fumes that are consistent with injury statistics confirmed by other studies and reports for the general labour market (Breslin, Koehoorn, Smith & Manno, 2003). The fact that fatalities and permanent disabilities are seldom reported in this setting does not exclude this environment from severe risks; it rather denotes the efficacy of the restricted health and safety applications that are in place. A leadership led renewed commitment to health and safety and full cooperation from all stakeholders can control and mitigate major forms of loss in this setting (Yang, 2012). The researcher is confident that the OHS management system advocated by the ILO can be implemented and applied in this setting in a manner that encourages research and innovative discoveries without cutting corners or taking risks. No analysis is available to determine the true costs of remedial actions that have to be taken to rectify situations when projects go awry. The university has a large archive of records where incident investigations and reports document situations where health and safety implications were not taken into account during the planning phase of projects and later required extensive repeated interventions by occupational health and safety personnel at additional costs to the university. The current approach to operations at the university has a mainly reactionary function with a focus on damage control. This is in stark contrast to the ILO recommendations which advocate and recommend proactive preventive approaches when implementing occupational health services. The participant responses indicate that staff considered training, information and

organizational support to be the most effective means of preventing and managing injuries in their workplace (Table 4.3e). These findings are a near replication of the issues that emerged during discussions with managers who expressed challenges that they experienced in implementing and organizing occupational health and safety within their departments. The incongruity in the OHS management structure became evident when the verbal and documented processes were plotted in flowcharts (Appendix K). A key informant stated that in his opinion to implement an OHS management system "we need to review our system more often so that most of us are in comfort with managing employees and those that are injured".

5.4 RESULTS OBTAINED FROM KEY INFORMANT INTERVIEWS

5.4.1 CHALLENGES EXPERIENCED BY MANAGERS

a. Lack of monitoring

In all the responses to the interview questions key informants at both universities reported experiencing a lack of monitoring as a challenge. Legal reforms require a more stringent demand for effective surveillance of compliance with the provisions of the OHS Act and the policies of the institution (Moraru, 2012). The lack of monitoring was most noticeable by the absence of risk assessments, incident investigations and surveillance records of departments that reported injury on duty claims in 2013 (Table 4.5a). At both universities the health and safety policies did not specify that the fore mentioned monitoring records should be applied. Some faculties, departments, divisions and units applied health and safety procedures while other areas did not adhere with these safety practices. These discrepancies were present at both universities. The lack of supervision was found to be a leading cause of injuries in the workplace (Zohar, 2002). The reported problems in monitoring injury prevention and occupational health and safety may have huge consequences for the support departments at universities who reported using a large complement of subcontracted workers. The use of subcontractors does not remove the responsibility for health and safety from the university. As the Department of Labour inspectors become more active in monitoring all employers the universities will be required to step up control measures to ensure adherence with national and international standards. By tightening its controls the universities may transfer increased standards for health and safety to subcontracting companies thereby serving as a catalyst for improved workplace practices in SMEs. Monitoring and evaluation should be planned proactively, before the intervention is implemented however in the practical setting the inverse occurs. Monitoring and evaluations usually occur after a major incident or as a once-off knee jerk reactive response which usually takes the form of an audit. Frank and Cullen (2006) concludes that the effectiveness of an OHS system cannot be evaluated if it is not being monitored.

b. Lack of support

The lack of support was similarly expressed as a challenge by all key informants. This finding was not surprising. The implementation of an OHS system, and the monitoring and evaluation thereof, can only take place if the organization adequately supports the implementation of such a management system. In the interviews the lack of support was mostly expressed by mid-level managers who felt restricted in their ability to implement health and safety and injury prevention initiatives within their departments. The restrictions were expressed as having insufficient funds to obtain the necessary resources to implement an effective OHS system. The attitudes of senior manager's openly conveyed a disregard for health and safety and beliefs that health and safety was not necessary in this environment quickly surfaced.

Managers at the executive level believed that health and safety was manipulated to motivate for aesthetic alterations rather than genuine health and safety risk reductions. There may be substance to these beliefs however the researcher was not able to verify this statement. The measure of valid health and safety claims compared to frivolous unsupported claims of health and safety infringements is beyond the scope of this study. The lack of support is regarded as an upstream problem which requires investigation and intervention at the executive level of the institution. Burton (2010) concurs that leadership style, high-quality jobs, variety and training has a direct and indirect effect on occupational injuries. At University-A the current positioning of the health and safety department (Annexure K) is presented as a distal add-on. The placement of the health and safety department is in contrast with the expectations expressed by mid-level and senior level managers. Management expects the health and safety department to operationalize the OHS system while being far removed from university departments, divisions, units and their related operations. The ILO recommendations suggest collaborative partnerships as the preferred method for the implementation of OHS systems. The inability to develop such a system points towards multiple issues, one of which may be the problems that personnel experience in their ability to interact with each other as noted by Frank and Cullen (2006).

c. Lack of knowledge and training

All the key informants reported that they had a lack of knowledge about injury prevention and health and safety. Most of their concerns were about the absence of health and safety induction to subcontractors. Some managers expressed that they expected staff to know what to do, yet they reported that training was not provided to staff. Mid-level managers interpreted the lack of training to represent a lack of support and a lack of compliance monitoring at the institution. According to Hancock (2011) the lack of support may be related

to the managers' reports of low health and safety knowledge and training. The researcher believes that managers may offer more support to injury prevention and health and safety initiatives if they understand how it pertains to their work settings, the importance of adherence and the consequences of noncompliance.

d. Lack of communication or barriers in communication

Communication is closely related to the aforementioned issues that were identified as challenges to managers. Several studies confirm that problems in communication and relationships in the workplace have a negative effect on most if not all of the factors that the managers found problematic in this study (Rasmussen, 1997; Frank & Cullen, 2006; Hancock, 2011). The questionnaires and documents confirm that a lack of; or barrier in communications exists in this setting. The breaks in communication may occur anywhere along the multiple communication pathways occurring in this setting i.e. between manager-to-manager, staff-to-manager, staff-to-staff, executive-to-manager, and department-to-department. These communication pathways are discussed by Rasmussen (1997) as up-down and horizontal communications of information in the system. The intricacies of these communication pathways was not the focus of this study, however the data collection methods confirm that communication problems exist and extend to the type of communication methods that are used at the university. The researcher speculates that the culture at the university may not encourage staff to share information about health and safety; however this should be confirmed after further investigation. Studies by Frank and Cullen (2006) have linked communication to reduced injury rates and the duration of disabilities.

e. COIDA misuse

The researcher expected the abuse or misuse of injury on duty provisions to be rife in this setting where lax monitoring and a lack of collaboration between departments were evident. Both universities reported that injury on duty misuse occurred, however University-B reported that it was not a problem as it did not occur often and at University-A an executive manager reported that in his opinion it was a problem. The 2013 injury on duty reports indicated that three of the claims at University-A were cases where the legitimacy of the cases was questionable. The researcher notes that the lack of knowledge and training, lack of support, lack of monitoring and lack of communication are factors that may collectively impact on injury on duty misuse. The study by Zoller (2003) highlighted that managers tended to dismiss injuries as being fake without investigating processes, which is similar to the practices in this setting. A coordinated and collaborative response to this potential area of misconduct can be addressed if the institution declares that it is mandatory for managers,

supervisors and HR practitioners to attend injury on duty training. The increased knowledge and understanding of injury on duty reporting and provisions by the Department of Labour will make it less likely for staff to misuse or abuse the injury on duty provisions. This decision to actively enforce the COID Act may facilitate monitoring and curtail the misuse of injury on duty provisions. Communicating the attempted acts of misuse to the Human Resources department may expedite appropriate corrective actions to investigate, document and control counterproductive behaviours.

f. Administrative delays

The administrative delays that were reported by the key informants can be traced to their lack of knowledge about injury on duty, not knowing what the procedures are and the lack of communication as discussed earlier in the chapter. The delayed responses may result due to not knowing who to contact for assistance and not knowing which documents need to be completed when staff are injured on duty. The lack of knowledge about the management of injuries on duty may have potentially life threatening consequences if an employee is fatally wounded. The attitudes of executive managers reflect that they are not aware of the full risks in this work setting and do not completely appreciate the brevity of the consequences that may occur if any of the limited control systems should fail. Universities have an overreliance on fallible safety systems which can be deactivated by any number of human errors. The lax monitoring system could present the scenario where a subcontractor who was not properly inducted to the environment, or an unsupervised student, or a new employee who is not familiar with the equipment and procedures in their new work setting, or a piece of equipment that was not regularly checked or maintained, any of these could cause harm to self and others. Universities are educational settings where people work in laboratories, conduct experiments, work as engineers, scientists, work in workshops, are exposed to health hazards, food technologists, chemicals, gas installations, fast moving vehicles, animals, fires, building construction, electrical installations, heavy machinery, crime, violence, trauma, drowning, explosions, equipment failures, food poisoning, theft, assault, illness, diseases, suicide, mental illnesses, depression. Being at a university does not shield you from life – it is the setting that years of curriculum redesign has transformed into a replica of the work setting to prepare graduates to enter the labour market well prepared. This preparation includes exposure to labour market risks and hazards. Where is the evidence that has led institutional leadership to regard this diverse setting as a risk-free environment? The findings in this setting are similar to Smith's (2001) findings that non-fatal injuries are more pervasive problems than fatal injuries. The overemphasis on the absence of fatalities detracts from the multiple cost implications that numerous non-fatal injuries pose to the university.

5.5 RESULTS OBTAINED FROM A REVIEW OF OFFICIAL DOCUMENTS

5.5.1 Occupational Health and Safety documents used to prevent and manage injuries in the workplace.

The documents at University-A were reviewed for an overall assessment of the application and awareness that these documents indicated to support the implementation of an OHS system at University-A. The assessment could not include comments of the documents used at University-B as the requested documents were not available for review. The public documents tabled for review were available via the university websites and was assessed via a walkabout conducted on the main campuses. Table 4.5a indicated that University-A made better attempts to apply documented support for the implementation of an OHS system however the efforts to raise awareness at University-A was lower than expected. Table 4.5b shows that very little attempts have been made to apply documents and raise awareness to support the implementation of an OHS system at University-B.

a. WCL 2 Employers report of an Accident

The records reflect that if a staff member submitted an injury on duty claim once, they were likely to sustain an injury on duty again sometime in the future. There were several 2013 claimants who had injury on duty folders for injuries on duty that they sustained in the past. None of the claims submitted in 2013 resulted in permanent disablement. The type of injuries that were reported were consistent with the WHO and Department of Labour statistics for injuries in the general labour market and supported the earlier findings of mostly non-fatal injuries in this setting (Smith, 2001).

b. Annexure 1 Incident Report

The incident reports and WCL 2 Employers Report of an Accident do not match up. Most staff that completed a claim to the Department of Labour does not complete an Incident Report. These injuries on duty are therefore not submitted to the Health and Safety Committees to be Minuted and signed off by the HSC Chair. These incidences are not presented to the OHS Act section 16.2 designee and may be a contributing factor for the lack of awareness of the risks and hazards. Incidences which are classified as near-misses are recorded on the electronic system and some departments submit hardcopy incident reports as requested. The available incident records reflect that two hundred and seventy near-misses were reported in 2013. The inconsistencies in the records confirms the under reporting of incidences that was reported during the interviews. Zoller (2003,) found similar inconsistencies in a health and safety study conducted in the automotive manufacturing industry. The researcher expected similar findings to those reported for the South African

labour market and other HE institutions where the under reporting of injuries was documented. The Annexure 1 Incident reports were seldom completed with usable recommendations to improve on any causative factors following an investigation of an incident. The document itself may therefore serve as an indicator that the user completing the form may not have sufficient knowledge of incident investigations to complete the document as required. This benefit of the document can only be realized if the forms are evaluated and monitored for discrepancies.

c. Security injury or accident record

The security personnel have an electronic incident reporting system that is used for all incidences to be recorded. This was not the case, as some incident records were not reflected on the electronic incident reporting system and the questionnaire confirmed that staff did not report all incidences to security personnel. The lack of communication and lack of knowledge about procedures is also believed to contribute to the under reporting of incidences via the electronic incidence reporting system. The electronic system indicates that investigation follow-ups are rarely documented on the system. Documents in the form of reports following investigations are generated, however the confidential nature of these records results in restrictions on these reports being linked to the electronic system which is accessed via subcontractors as well as other university departments. The lack of resources (under staffed and lack of funding) reported by the health and safety department may also contribute to the restrictions on uploading investigation reports to the electronic system.

d. Health and Safety Committee Meeting Minutes

The inconsistencies are noticeable in the minutes of the Health and Safety Committee (HSC) meetings. Some of the committees have structures that are well developed and operate as prescribed by the guidelines of the OHS Act. The minutes reflect that the items that are raised correlate to the lack of monitoring and the lack of knowledge and training as indicated in the questionnaires and interviews. The issues tabled at the HSC level takes a long time before they are resolved. The major problem experienced in resolving issues is the lack of authority (staff not having clout to initiate the changes required) and a lack of support to enforce OHS Act requirements. Wadsworth and Smith, (2009) found that the importance of occupational health to any organization is observed by its safety culture and organizational support systems. The university is in the process of restructuring HSCs and intends appointing OHS section 16.2 designees in the position of HSC Chairs with health and safety accountability. This is a positive step in the right direction; however this process was initiated more than twelve months ago and has not been implemented. The protraction in implementing health and safety corrective actions was noted by key informant disclosures

and the protractions were evident in the HSC minutes and incident reporting documents that reflected lengthy delays in dealing with identified health and safety oversights.

e. Quarterly Inspection Reports

Quarterly Inspection Reports are not regularly completed by Safety representatives and were not submitted in time for the HSC to review the documents to discuss any pressing issues with the HSC. The Quarterly inspection reports (QIR) are not utilized to check on the completion of issues that have been addressed via the HSC and are rarely referred to or followed up on in follow up HSC meetings.

f. Public documents

The health and safety department (HSD) made a considerable effort to use available resources to maximize awareness of health and safety on campus in 2013. Social media sources (Facebook, Twitter and Blogs) were used to advertise health and safety related information blurbs and to notify followers of any events on campus. The campus newsletter and electronic online open learning forum was used to publicize the 2013 safety awareness campaign. The health and safety department collaborated with the Department of Labour to host an information session on its five campuses. The health and safety department hosted a safety awareness competition via the campus website and participated in all the staff wellness events arranged by the HR department. The HSD participated in orientation days and workshops arranged by other departments and distributed copies of the OHS Act to all section 16.2 designees. The university departments had a noticeable lack of information (pamphlets and posters) on injury prevention, COID Act guidelines, OHS Act guidelines or any other health and safety related posters on display. Burton's study (2008, p.5) makes a strong case for the business benefits of injury prevention initiatives, however in this setting the benefits of increased employee performance and productivity remains unrealised. The OHS Act places responsibility on the employer to inform employees of the risks that they will or are likely to encounter in their work place (OHS Act, 1993). This directive can only be achieved if faculties, departments, divisions, units and institutes work collaboratively to implement policies and practices that are designed to enforce these requirements (Burton, 2010).

CHAPTER SIX

Conclusions and Recommendations

"You say there's a lesson that you want to teach…Practice what you preach."
(Warner/Chappell Music Inc., 1994)

6.1 INTRODUCTION

The universities managed their incidences differently however the types of injuries was not dissimilar. The absence of injury prevention promotion programmes was noticeable at both universities however the structures in place at University-A was more formalised than at University-B. Both case study sites had a poor support for the implementation of health and safety which overlooked the benefits of a proper safety induction programme. University-B moved its health and safety department out of the Human Resources department which was contrary to the recommendations for improved collaboration between these departments. The researcher hopes that these findings and recommendations can assist in the improvement of workplace health and safety practices and encourages more studies to be undertaken about workplace practices in the higher education setting.

6.2 FIRST AIM OF THE STUDY

The first aim of the study was to determine the type of work-related injuries that occur at Higher Education Institutions in the Western Cape.

6.2.1 Objective 1: to assess injuries reported to the department of labour on COIDA form WCL2 Employers Report of an Accident.

- **Conclusions**

  The injuries occurring at the two universities forming part of this study were similar with most of the injury claims being related to slips, trips and falls. The second most frequently reported type of injury was musculoskeletal injuries. The injury types are consistent with those reported in the UK study of occupational health needs of universities that was conducted by Venables and Allender (2006). The musculoskeletal injuries reported in this study involved mostly back, knee and upper arm injuries. The findings in this study are based on the claims submitted during the period of this study and does not necessarily reflect all the incidences that may have occurred in this setting. The university setting was found to be subject to similar problems of under reporting of injuries as noted in studies conducted by Lund and Marriott (2011) and Loewenson, (2001) in other employment sectors. The injury on duty rates during the study period (2012 – 2013) remained unchanged with the frequency of injuries remaining highest in the health sciences

faculties and the departments dealing with student affairs. The type of injuries varied according to the work activities undertaken at the time of the incident. This corresponded with the guidance provided by the ILO which cautioned that health and safety is not a one size fits all undertaking and should be adjusted to the needs of the organization (ILO, 2013). The injuries that occurred at University-A and B during the period of this study may not be similar at other institutions. Activities at other institutions may be different which may change their exposure to specific risks or hazards. Certain staff members appeared to be more prone to injuries on duty and repeatedly submitted injury on duty claims. The repetition of injuries to certain personnel may signify that in some settings, particularly those involving musculoskeletal injuries, work adjustments may be required. In these instances further investigation of the tasks being performed is warranted.

Based on the above conclusions, objective 1 has been achieved.

6.2.2 Objective 2: to view security records for any injuries or incidences that has been reported to security personnel.

- **Conclusions**

Security records at University-A indicated that the majority of incidences are related to after-hours medical assistance provided to students. The study data indicated that security records are not an accurate indicator of staff incidences occurring at the university due to the under reporting of incidences to security personnel.

Based on the above conclusions, objective 2 has been achieved.

6.2.3 Objective 3: to view First aider reports of treatments provided for minor injuries.

- **Conclusions**

First aider reports for minor injuries were non-existent and will therefore not serve as a reliable indicator of minor injuries or the type of treatments that have been provided to staff and students. The Annexure 1 Incident Reports were used more often when staff required medical treatment and served as an alternative record of first aid that was provided. In this setting injury prevention practices are not developed on an individual level and minor injuries and incidences are under reported.

Based on the above conclusions, objective 3 has been achieved

6.2.4   Recommendations based on first aim of the study:

➢ Staff Induction should supplement institutional health and safety policies and should be viewed as evidence of the employer fulfilling mandatory obligations via the duty to inform as stated under section 8 of the OHS Act 85 of 1993.

➢ Accurate trending of the type of injuries sustained at universities requires in-depth analysis of all the claims submitted since the universities registered with the Compensation Fund.

➢ The researcher suggests that employers use Incident Reports to determine whether injuries are related to accidents or if work practices (set up and organization) contributes to the repeated injuries.

➢ Assessments of the records can indicate where basic workplace adjustments can be made to mitigate further injuries and lost work days.

➢ Incident reports can be used to identify faculties or departments that may benefit from specific targeted interventions or training programmes.

➢ The use of first aid equipment should be closely monitored. Motivation for reordering first aid supplies should be linked to treatment provision records. This process should encourage improved recordkeeping and serve as a method to regulate expenditures related to the purchase of first aid stock.

6.2.5 Confirmation of conceptual model

Most individuals are not aware of the risks in their environment and therefore it is unwise for employers to assume that employees have acquired knowledge about health and safety or injury prevention on an individual level. Alli (2008) asserts that training is one of the most important tasks to be carried out by the employer. Without basic information the individual is likely to establish their own understanding of the safety climate which may be based on misperceptions. The safety culture at the assessed HEIs was not inclined to sharing knowledge about the practices and procedures in this setting. The individual is therefore vulnerable and does not receive adequate knowledge about the health and safety practices at the institutions. Holloway (2012) states that the organizational climate is mainly learned through distinctive interactions among staff members. The HEIs should therefore design work structures to support activities to raise awareness of injury prevention practices. Wu (2008) further asserts that the commitment that the organization makes to its employees is followed by the employees' commitments to the organization. The health and safety value statement of the universities should therefore be made explicit and should be enforced via measures that employees can identify as observable quality statements.

6.2.6 Implications for the prevention and management of injuries

The documents are a valuable source of information that is seldom fully utilized. The injury reports contained data that could be used to trend specific high risk areas or jobs with an increased risk of exposure. Incident Reports could be used as a departmental tool to approach injury prevention management in a collaborative manner. The document may serve as a measure to observe changes in injury on duty rates over time in response to education and training programmes. The training programmes can be developed to address specific problem behaviours and workplace practices which identified workers who are predisposed to increased injuries. The Incident Reports also serve as a monitoring tool to assess areas of health and safety oversight where subcontractors may be contributing to injury rates by not adhering with the standard operating procedures for the specified service level agreements. To elucidate this point consider the unsafe practice that was observed in HSC meeting minutes were the standard operating procedure of a cleaning subcontractor was not adhered with. The seemingly minor oversight resulted in an injury on duty due to staff slipping and falling on wet floors. The investigation revealed that the cleaning staff did not use signage and a similar case revealed that where signage was used; it was placed in an obscure place where building occupants did not benefit from the use of warning signs. The importance of enforcing health and safety compliance, training staff to understand the importance and implications of following safe operating procedures and monitoring the effectiveness of health and safety systems is evident from this example.

6.3 SECOND AIM OF THE STUDY

The second aim of the study was to examine the strategies put in place at Higher Education Institutions to prevent injuries in the workplace.

6.3.1 Objective 1: to review policies and procedures related to injury on duty prevention.

- **Conclusions**

    University-A had policies and procedures related to health and safety and the management of injuries on duty. The policies and procedures did not incorporate preventive strategies and was not disseminated to all staff. The managers denoted that executives expected staff to know what they are supposed to do. The study highlights that in practice employees do not know what to do when it comes to health and safety. The awareness of injury prevention and injury prevention strategies was absent from the universities information campaigns that formed part of the public documents reviewed as part of the study.

Based on the above conclusions, objective 1 has been achieved

6.3.2 Objective 2: to assess injury prevention awareness campaigns and employee education drives.

- **Conclusions**

   The universities did not actively promote injury prevention awareness and employee education drives focusing on the prevention and management of injuries.

Based on the above conclusions, objective 2 has been achieved

6.3.3 Objective 3: to view staff induction programmes for inclusion of injury prevention information.

- **Conclusions**

   Staff induction programmes included a very brief health and safety and injury prevention information slot. The short health and safety induction sessions served only to verify that a session was being conducted but offered little evidence to support that the employer has fulfilled its duty to inform. A ten minute induction session cannot provide the employee with all the information needed to make informed decisions to prevent injuries and manage workplace safety in a proactive manner. Safety induction is mandatory yet employees can decide whether they want to attend these lawfully prescribed training sessions. Contractor workers, locum workers and casual staff are not included in a routine safety induction programme despite the interaction in the work setting and potential for introducing hazards to the work environment.

Based on the above conclusions, objective 3 has been achieved

6.3.4 Objective 4: to look at the methods used to communicate injury on duty prevention information to staff.

- **Conclusions**

   The study highlighted that communication methods used to convey injury on duty prevention information appealed to academic staff but did not reach non-academics. The concern in this finding is that non-academic staff forms the majority of the personnel at the university. The study also pointed out that non-academics are more likely to fulfil the role of a health and safety designee. This suggests that the majority of the personnel at the universities do not receive the necessary information and that the academics who receive the information do not routinely get involved in health and safety tasks. The gaps where policies were not clearly understood or managers did not know how to implement or apply the policy in their work setting emerged as

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expressions of lack of training and lack of knowledge. The perceptions of injury on duty misuse and abuse may be justified in these settings where a lack of monitoring and lack of interdepartmental communication reinforced opportunities for misuse to occur. The responses and records indicated that misperceptions about health and safety and the misuse of health and safety could be addressed and dealt with in a professional manner by approaching the leading challenges that managers experienced.

Based on the above conclusions, objective 4 has been achieved

6.3.5   Recommendations based on the second aim of the study:

➢ The communication strategies should be revised and injury prevention benefits should be communicated to executive level management, then to middle managers and thereafter to other categories of staff.

➢ The appropriate endorsement from departmental leadership may ensure that training and development sessions are more easily facilitated and may result in mid-level managers being more accommodating for staff to attend training sessions that are arranged in each faculty or department.

➢ In this setting in-house training by each department or faculty may be more beneficial to staff than training provided at other locations at the universities. In-house training requires no travel away from the work setting and encourages the department or faculty to take ownership of the training intervention.

➢ To assure that longer-serving staff acquires the necessary information a compulsory injury prevention training session should be incorporated into the overall on-going staff development training programme.

➢ Human Resources strategies should be used to encourage broader participation in health and safety activities by exploring the potential for including health and safety participation as a measure of overall staff performance for all categories of staff.

➢ The implementation of an effective OHS management system requires the application of and integration of the OHS policy as highlighted by the phases of the ISO 18001 standard.

➢ Enforcing compliance with the universities policies and procedures should be emphasized as a priority at all levels of the organization and not only at the lower levels of the institutions. The study indicated that most of the challenges experienced by managers in the implementation of health and safety systems originated from the executive levels of the organization.

➢ The Universities stakeholders who have interlinking functions and activities which impacts on the provision of training, knowledge sharing and institutional policy should

collaborate to devise a coordinated approach to deal with the issues that emerged as leading challenges to managers as outlined in this study.

➢ The Universities would benefit from facilitating closer relationships between departments. In this study the potential to address the emerging challenges could be approached by a coordinated effort by the Health and Safety (Occupational health) and the Human Resources (Staff development, Organisational health and Recruitment and Selection) departments.

➢ The items identified as main concerns by managers should be addressed first which the researcher believes will have a positive effect on the other factors influenced by those main problems (Figure 8).

6.3.6. Confirmation of conceptual model

The non-adherence of employees to safe work practices in these settings was not surprising in light of the confirmations that perceptions of health and safety are low among executive managers. The findings of the study endorse the conceptual model which posits that employees are more likely to adhere to safe work practices if they perceive that the organization is serious about adherence to the safety culture (Hahn & Murphy, 2008). Statements from the study respondents established that they perceived that the organization did not take health and safety seriously and that managers had a lack of knowledge about health and safety, injury prevention and the risks in this environment (Mearns & Reader, 2008).

6.3.7 Implications for improved injury prevention strategies

The study supports Manuele's (2011) investigations by determining that the universities have an underlying counterproductive culture which tolerates health and safety non-conformances. Closer relationships with other support service departments may provide opportunities for knowledge sharing, problem-solving and pooling of resources. The shared interactions may help to streamline monitoring and evaluation processes. Closer working relationships may offer potential benefits by increasing the awareness of the operations conducted by each department and what these departments can offer the other towards achieving the common goals of the organization. The European Agency for Safety and Health at Work (2000) provides an example of how a similar framework was applied to address the problem of lower-back injuries in the workplace.

6.4 THIRD AIM OF THE STUDY

The third aim of the study was to examine the systems in-place to manage occupational injuries at Higher Education Institutions.

6.4.1 Objective 1: to examine the health and safety structures (safety committees) and their related injury on duty documents (Annexure 1 reports) in place at the Higher Education Institutions.

- **Conclusions**

  The universities managed their incidences differently; with University-A opting to manage injuries on duty via the Occupational health unit of the Health and Safety department. University-B managed injury on duty administration via an onsite Safety Coordinator and an off-site subcontracted General Practitioner. The health and safety committees were examined and were found not to be overseen by the appropriate level of authority as prescribed by the OHS Act. The absence of the delegated authorities from the committees may contribute to the protractions noted in the committee minutes. Minuted issues remained unresolved for an extended period before any remedial actions were taken. In the study setting executive managers inappropriately identified health and safety as the problem in these cases. On closer investigation the protraction of maintenance services appeared to steer to the misapplication of health and safety. Beleaguered personnel believed that citing health and safety infringements will expedite the completion of maintenance jobs. The scenario at the universities places health and safety as the scapegoat for departments to request urgent maintenance jobs. This ruse is problematic in that it may result in genuine health and safety infringements being ignored.

Based on the above conclusions, objective 1 has been achieved

6.4.2 Objective 2: to review the occupational health and safety management organogram.
- **Conclusions**

  The occupational health and safety management organograms have to be revised so that the reporting structures support a comprehensive centrally monitored and enforced system. The OHS implementation gap is not unique to this setting and was identified by Rantanen et al. (2013) as a global challenge. The current organogram of University-A does not reflect the proactive implementation strategy recommended by the International Labour Organization and creates an environment that favours reactive responses as the norm. University-B had no organogram in place. The ILO (OSH, 2001) advocates the OHS management system which has a policy driven focus based

on five main divisions namely (i) Policy, (ii) Organizing, (iii) Planning and implementation, (iv) Evaluation and (v) Action. This system is based on the globally accepted Demming "Plan-Do-Check-Act" approach to management for improvement.

Based on the above conclusions, objective 2 has been achieved

6.4.3 Objective 3: to look at the occupational health, staff health or employee wellness services flow chart or model used at Higher Education Institutions.

- **Conclusions**

    University-A has an operational Occupational health and safety clinic which provides a medical surveillance programme to university employees. This type of service was absent from University-B although it provided specialist training in the field of Occupational health nursing science. The Occupational health and safety clinic at University-A is part of the Health and Safety department and is subject to the same challenges and restrictions experienced by the Health and safety department. The study indicated that employees and managers did not know the difference between occupational health and primary health services. The occupational risk exposure profiles of most job categories at the universities were unknown. The absence of the risk profile data restricts the application of the full range of medical surveillance that has to be conducted in order for the universities to correctly implement an occupational health service as recommended by the ILO. Alli (2008) asserts that most hazardous conditions may be regarded as preventable therefore efforts should be concentrated on primary prevention which offers the most cost-effective strategy for their elimination and control. The staff awareness about the staff wellness programme was heightened due to more institutional commitment and effort to communicate and allocate resources to market this service. The organizational health model at University-A indicates that a holistic and collaborative service is envisioned; however there was little evidence to support the application of this model in this setting.

Based on the above conclusions, objective 3 has been achieved

6.4.4   Recommendations based on the third aim of the study:
➢   The universities could benefit by creating an interdepartmental training network to minimize opportunities for misunderstanding or the misinterpretation of university policies by training key personnel to train other employees within their departments.

> ➢ The managers mentioned funding as a limitation which does not necessarily mean that budgets have to be increased. To truly determine the adequacy of budgetary allocations the department managers have to realistically align the objectives of the department to the costs associated with realizing those objectives. The answers may lie in better control measures to mitigate the wastage of funds and align budgets to the expected health and safety outcomes.

> ➢ Executive managers and Line managers should be accountable to an auditor that is external to the department and who can assess whether any expense can be traced to a direct benefit to the university community.

> ➢ The OHS system has been applied to cover the breadth of activities and does not have the resources or manpower to adequately address the depth of the health and safety issues common to this environment.

> ➢ Injury costing has the potential to add value to decision-making processes and should be used by safety promotion and injury prevention practitioners in advocacy initiatives.

> ➢ The implementation of an OHS Management system is a task that will require the input and collaboration of a specialist team. The process of implementing an OHS management system aligned to the OHSAS 18001 standard can take on average eighteen months (personal communication, OHSAS 18001 Implementation Trainer, IRCA Global, December 12, 2013). It is advisable for the organization to consider contracting the required specialists to assist the existing health and safety personnel to implement an OHS management system aligned to OHSAS 18001. The existing approach, minimum staff to implement selected OHS Act requirements, impacts on the inability to sustain an effective health and safety structure. The organization has scope for the existing health and safety personnel to maintain, monitor and evaluate an OHSAS 18001 aligned system that is properly implemented. Additional resources can be added after evaluating the efficacy of the operational system to ensure the long term sustainability of the OHS management system.

6.4.5. Confirmation of conceptual model

The expectations of the employee, the manager and the organization can be realized by implementing a knowledge improvement plan that addresses key standards that are set out in the universities policies. To ensure the implementation of the knowledge that was gained all employees should receive relevant examples to assist them in applying what they have learnt in their work settings. Practical applications via interactions with colleagues and other departments in a work environment that supports the collaborative development of personnel will add value to the overall operations of the organization. The quality of work and

employment dimensions discussed by Pillay et al. (2004) were found to be changes occurring in higher education that are relevant to work. These changes however do not extend to health and safety or injury prevention practices. The inclusion of health and safety as a dimension of quality should yield a reduced injury rate, improved workplace safety practices and at the very least ensure that the employers fully observed their duty to inform. Cameron and Sine (1999) asserts that quality, like organizational support, is dependent on employer and employee commitment to achieving the common goals of the organization.

6.4.6 Implications for the management of occupational injuries

The under reporting of incidences in the general labour market and the lack of knowledge about health and safety reported by the study respondents indicates that occupational injuries and diseases are likely to be under reported in this setting. The incidence reporting systems are subject to several operational oversights where the incidences have been noted to not accurately reflect the known injury cases that have been reported to the Department of Labour. The under reporting of injuries may result in misperceptions of the universities as environments that are risk free. This perception should be discouraged so that safe practices can become part of everyday activities. The universities can do more to encourage safe practices by entrenching health and safety in all activities undertaken by the universities whether in the form of curriculum development, research or work activities undertaken by all university staff.

6.5 RECOMMENDATIONS FOR POLICY MAKERS

Via different methods of data that was collected, staff and their Line managers agreed that training, the communication of information and more organizational support was needed for injury prevention and occupational health and safety practices to be implemented at the universities. These findings indicate that the problem in realizing the health and safety goals of the institutions lie beyond the staff and middle management levels of the organization and should be addressed at the policymaking level. The OHS system should be revised after a needs assessment is conducted with key stakeholders representing each health and safety committee, all support service departments, academic staff, the student representative council (SRC) and the executive leadership of the universities so that a well-considered all inclusive structure can be developed that addresses the needs of all university personnel (Burton, 2010). Health and safety should be viewed as part of the quality measures for all activities related to the universities. All policies should incorporate a statement of how health and safety is viewed by the universities in the application of whichever policy is being developed. The approach from the bottom up has not yielded any improvements in the implementation and communication of the necessary health and safety improvements. The

immobilized safety structures at University-A was historically ineffective due to the omission of health and safety oversights in reports where managers were reflected in a less than favourable light. The heavy reliance on bureaucratic communication between from executive-to-executive creates the opportunity for safety reports to be diluted. The bureaucracy at the University prevents a true reflection of the health and safety status from reaching those who are legally accountable according to the OHS Act. Accurate information is vitally important to the Vice-Chancellors at the universities who according to the law have overall accountability for the health and safety of all university employees. As earlier suggested, the interdepartmental collaboration that should be developed with urgency would be the relationship between the health and safety department and the office of the Vice-Chancellors. Essentially any health and safety oversight ultimately has the potential to have the biggest implications for the most high-ranking members of staff at the universities. The effective prevention and management of injuries requires that injury prevention programmes are initiated to inform individuals about their health and safety responsibilities as well as fulfilling the function of ensuring that the employers inform staff of risks in the work environment (safety climate). The encouragement of workplace collaborations to attain and sustain newly acquired health and safety practices is a practical means of facilitating employee interactions and simplifies the interpretation of organizational policies and procedures (safety culture). Training and informing management to understand and value the benefits of OHS can have a beneficial impact on staff morale as well as on the development of constructive work structures (organizational support). The benefits to the employer extends beyond reduced injury rates, reduced absence from work and reduced costs and translates into an overall increased operational value (organizational quality). The implementation gaps mentioned by Venables et al (2006) and others (American College Health Association National College Health Assessment, 2005; Becker et al., 2008; Faller et al., 2009) are puzzling when considering that HEIs are adept at educating occupational health and safety specialists yet fall short by not practicing what they teach.

6.6 SUGGESTIONS FOR FURTHER RESEARCH

- This study was limited in scope and a broader study of injury prevention and management at other HEIs is warranted.
- Information on the safety climates and safety cultures at HEIs in South Africa would be useful points of reference for policymakers. During this study the lack of data about safety climates and safety cultures in this setting was noticeable.
- A study of the perceptions of academic staff would be of interest as the injury rates in the research and teaching environment is not well explored.

- Perceptions of injury on duty misuse where reported in this research however it was beyond the scope of this study to further explore this issue. More studies on the actual use or misuse of injury on duty provisions in the local settings are warranted.

- More inferential studies are required to elucidate the impacts of safety climate, safety culture, organizational support and organizational quality on injury prevention and the management of occupational health and safety.

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www.asse.org

www.ieasa.studysa.org

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8. LIST OF APPENDICES

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HR194	ACCESS TO UCT STAFF FOR RESEARCH PURPOSES		UNIVERSITY OF CAPE TOWN IYUNIVESITHI YASEKAPA · UNIVERSITEIT VAN KAAPSTAD

NOTES

- Forms must be downloaded from the UCT website: http://www.uct.ac.za/depts/sapweb/forms/forms.htm
- This form must be completed by applicants who are requesting to access UCT staff for the purpose of research.
- A copy of the research proposal as well as the Ethics Committee approval must be attached.
- It is the **responsibility of the researcher/s to apply for ethical clearance** from the relevant Faculty's Research in Ethics Committee (RiEC).
- If you are requesting staff information, you are required to complete the HR Information Request Form (HR190) and submit it together with all the required documentation.
- The turnaround time for a reply is **approximately 10 working days unless specified as urgent.**
- Return the completed application form and all the above documentation to Joy Henry via email: joy.henry@uct.ac.za; or deliver to: For the Attention: Executive Director, Human Resources Department, Bremner Building, Room 214, Lower Campus, UCT.

SECTION A: APPLICANT DETAILS

Title	Mrs	Name	Charlene Esau
Telephone number	021-6502021	Email address	charl.esau@uct.ac.za
Student number	197072801	Staff number	01414241
Visiting researcher ID / passport number	7504150199085		
Faculty Officer contact details	Raquel Lucas		
	021-953 8644		
University or institution at which employed or a registered student	Cape Peninsula University of Technology		
Faculty or department in which you are registered or work	Faculty of Health and Wellness Science		
Address (if not UCT)	PO Box 1906		
	Symphony Way, Bellville		
	7535		

SECTION B: SUPERVISOR DETAILS

	Title and name	Telephone number	Email address
Supervisor	Prof.Doris Khalil	021-953 8644	profdkhalil@gmail.com
Co-Supervisor	Angela Dunn	021-959 6921	DunnA@cput.ac.za

SECTION C: APPLICANT'S FIELD OF STUDY (if applicable) / TITLE OF RESEARCH PROJECT / STUDY

Degree	Magister Technologiae Nursing		
Research project or title	Prevention and management of occupational injuries at selected higher education institutions in the Western Cape, South Africa.		
Research proposal attached	☒ Yes	☐ No	
Target population (number of UCT staff)	Maintenance Dept, HR Advisors, Physical Risk Coordinating Committee, Estates and Custodial Services Dept, UCT Traffic Dept. and Health and Safety Committees.		
Amount of time required for an interview and/or questionnaire	Questionnaire = 15 minutes and Interview = 30 minutes		
Lead Researcher details	Charlene Esau - Occupational Health Nurse Practitioner 073 7635254 BCom. Hons. Org. Psychology: Training & Evaluation - UCT 2010 BTech Occupational Health Nursing - CPUT 2008		
Proof of ethical clearance status attached	☒ Yes	☐ No	

SECTION D: FOR OFFICE USE (Approval status to be completed by the Executive Director, Human Resources or Nominee)

Support or approval			Role	Signature	Date
Supported?	☑ Yes	☐ No	Joy Henry (Office Co-Ordinator)		25\11\13
Approved?	☑ Yes	☐ No	Miriam Hoosain (Executive Director: HR)		25/11/13

APPENDIX A: Permission to access staff at University-B

Elizabeth Kuhnert

From:	Charl Esau <charl.esau@uct.ac.za>
Sent:	07 November 2013 03:29 PM
To:	Elizabeth Kuhnert
Subject:	HR query regarding approval to access CPUT staff as research participants

Dear Elize,

I have received a request from the UCT FHS Research Ethics Committee as well as a second query from the CPUT Faculty of Health & Wellness Sciences Research Ethics Committee who are both waiting for a response from the HR Director to determine if I have approval from HR to begin data collection for this research study. Can you please provide me with some feedback as soon as possible? I apologise for any inconvenience however desperately need feedback before the Ethics Committee Review Boards close for the 2013 period. My thanks in advance for your kind assistance.

Best wishes,

Charlene Esau
Occupational Health Nurse Practitioner [Projects]
Safety Health & Environment Dept.
Shell Court Bldg, 93-95 Main Rd. Mowbray,
(T) 021-650 2021
(F) 086 506 1432

HEALTH
& SAFETY

Sorry for delay.
OK, approved
11/11/2013

UNIVERSITY OF CAPE TOWN

1

APPENDIX B: University-A Research Ethics Committee approval letter

UNIVERSITY OF CAPE TOWN

Faculty of Health Sciences

Human Research Ethics Committee

Room E52-24 Old Main Building
Groote Schuur Hospital
Observatory 7925
Telephone [021] 406 6338 • Facsimile [021] 406 6411
Email: shuretta.thomas@uct.ac.za
Website: www.health.uct.ac.za/research/humanethics/forms

15 November 2013

HREC REF: 689/2013

Ms C Esau
c/o Prof D Khalil
Safety Health & Environment Department
Level 3, Meulenhof Building
93-95 Main Road
Mowbray
7700

Dear Ms Esau

PROJECT TITLE: PREVENTION AND MANAGEMENT OF OCCUPATIONAL INJURIES AT SELECTED HIGHER EDUCATION INSTITUTIONS IN THE WESTERN CAPE, SOUTH AFRICA

Thank you for your letter to the Faculty of Health Sciences Human Research Ethics Committee dated 12th November 2013.

It is a pleasure to inform you that the HREC has formally approved the above-mentioned study.

Approval is granted for one year until the 30th November 2014

Please submit a progress form, using the standardised Annual Report Form if the study continues beyond the approval period. Please submit a Standard Closure form if the study is completed within the approval period. (Forms can be found on our website: www.health.uct.ac.za/research/humanethics/forms)

Please note that the ongoing ethical conduct of the study remains the responsibility of the principal investigator.

Please quote the HREC reference no in all your correspondence.

Yours sincerely

PROFESSOR M BLOCKMAN
CHAIRPERSON, FHS HUMAN ETHICS
Federal Wide Assurance Number: FWA00001637.
Institutional Review Board (IRB) number: IRB00001938
This serves to confirm that the University of Cape Town Human Research Ethics Committee complies to the Ethics Standards for Clinical Research with a new drug in patients, based on the Medical
Research Council (MRC-SA), Food and Drug Administration (FDA-USA), International Convention on Harmonisation Good Clinical Practice (ICH GCP) and Declaration of Helsinki guidelines.
The Human Research Ethics Committee granting this approval is in compliance with the ICH Harmonised Tripartite Guidelines E6: Note for Guidance on Good Clinical Practice (CPMP/ICH/135/95) and FDA Code Federal Regulation Part 50, 56 and 312.

APPENDIX B: University-B Research Ethics Committee approval letter

Cape Peninsula
University of Technology

HEALTH AND WELLNESS SCIENCES RESEARCH ETHICS
COMMITTEE (HW-REC)

Registration Number NHREC: REC- 230408-014

P.O. Box 1906 • Bellville 7535 South Africa
Symphony Road Bellville 7535
•Tel: +27 21 959 6352 • Fax +27 21 953 8490
Email: danielso@cput.ac.za

3 October 2013
CPUT/HW-REC 2013/H34

Faculty of Health and Wellness Sciences – Nursing and Radiography Department

Dear Ms Charlene Alicia Gladys Esau

APPLICATION TO THE HW-REC FOR ETHICAL CLEARANCE

Approval was granted on 20 September 2013 by the Health and Wellness Sciences-REC to Charlene Alicia Gladys Esau or your Ethical Clearance application. This approval is for research activities related to an MTech: Nursing at this Institution.

Title: Prevention and management of occupational injuries in two higher education institutions in the Western Cape.

INTERNAL SUPERVISOR: Prof D Khalil

INTERNAL CO-SUPERVISOR: Mrs A Dunn

Comment:
Approval will not extend beyond 3 October 2014. An extension should be applied for 6 weeks before this expiry date should data collection and use/analysis of data, information and/or samples for this study continue beyond this date.

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

Kind Regards

Zuleika Nortjé
CHAIRPERSON – ETHICS RESEARCH COMMITTEE
FACULTY OF HEALTH AND WELLNESS SCIENCES

Injury Prevention Research

All HR Dept. staff are invited to take part in this study. Your participation will remain anonymous.

Please complete a questionnaire or take part in a short 15 minute interview.

Contact the Researcher before 14 Feb. 2014 to join this research project.

Researcher: Charlene Esau

Email: charl.esau@uct.ac.za

Tel. 021 650 2021 / Fax: 086 506 1432

Visit the Occ. Health Clinic

Flat no.7 Meulenhof Building

Injury Prevention Research

All Traffic Control & Security Staff who are permanent CPUT employees, are invited to take part in this study. Your participation will remain anonymous.

Please complete a questionnaire or take part in a short 15 minute interview.

Contact the Researcher before 14 Feb. 2014 to join this research project.

Researcher: Charlene Esau

Email: charl.esau@uct.ac.za

Tel. 021 650 2021 / Fax: 086 506 1432

Cell: 073 763 5254

APPENDIX D: Information sheet, Letter of consent and Questionnaire

INFORMATION SHEET

Cape Peninsula
University of Technology

Dear Sir/Madam,

Re: a study on "Prevention and management of occupational injuries at selected higher education institutions in the Western Cape, South Africa."

You are being invited to take part in a research study. Please take some time to read the information presented here, which will explain the details of this study. Please ask the researcher any questions about any part that you do not fully understand. It is very important that you are fully satisfied that you clearly understand what this research entails and how you could be involved. Also, your participation is **entirely voluntary** and you are free to not participate. If you say no, this will not affect you negatively in any way whatsoever. You are free to withdraw from the study at any point, even if you do agree to take part. The collection of data will start in January 2014 and the study will be completed 16 weeks from the start of data collection.

Purpose of study: The purpose of this study will be to explore the injury on duty prevention and management strategies that are currently used at your place of work. The study will try to show specific areas where injury prevention instructions and goals are not working as it should. The researcher will therefore need to look at injury on duty records, quarterly inspection reports and any records relating to injury prevention. Please be aware that these records may contain your injury details or may have been completed by you to report an injury. Please indicate on the consent form if you agree or refuse that your injury records may be used as part of this study.

Are there any risks in taking part in this study? As this study is merely to explore the injuries on duty, there are no risks, physically, mentally or professionally to any of the participants. However, if you do feel anxious at any point during the study, you will be referred to a free community based counselling service.

Who will have access to your information? All information collected will only be available to the researcher and will be treated as private and confidential. All identification will be kept anonymous; each participant will be identified by a number or letter when entered into a publication or thesis. The electronic data (emailed

responses, dissertation) will be stored on an external hard drive and the researcher's personal computer which is password protected. The hard copy data (questionnaires, consent letters, official documents) will be stored in a lockable filing cabinet in an office that is only accessible to the researcher. The office is protected by an alarm system, 24hr CCTV surveillance and 24hr onsite security patrols. The data will be stored for 5 years and will be deleted and all documents will be shredded by the researcher once this period is over.

Participation: Participation in this study is voluntary and requires the completion of a short questionnaire and/or a 30 minute interview. You will not incur any costs due to taking part in this study.

Summary: A copy of the outcomes will be summarised and will be made readily available to all participants upon the completion of the study. The researcher encourages the participant to contact her if he/she would like a copy of the summarised outcomes of this study. Please email your request for a copy of the study outcomes to cage6470@gmail.com or contact the researcher at 021 650 2021 for a hardcopy to be posted to you.

Principal Researcher

Charlene Esau
Email: charl.esau@uct.ac.za
(w) 021 650 2021
(c) 073 763 5254

Research Supervisor

Prof. D.Khalil
Email:KhalilD@cput.ac.za
(w) 021 953 8644

Co-Supervisor

Mrs. A.Dunn
Email: DunnA@cput.ac.za
(w) 021 959 6921

Cape Peninsula
University of Technology

By Participant

By signing below, I.. agree to take part in a research study entitled "**Prevention and management of occupational injuries at selected higher education institutions in the Western Cape, South Africa.**"
- I have read, or had read to me; all information on this consent form and it is written in a language that I clearly understand.

- I was given the opportunity to ask questions and I am satisfied with the answers that have been given to all of my questions.

- I understand that taking part in this study is of my own free will and I have not been pressurised to take part.

- If I choose to leave the study at any time I will not be penalised or prejudiced in any way.

- The researcher has explained that a peer debriefer will read through the transcribed recordings to make sure that the researcher has accurately written down what I (the participant) have expressed during the interview. I do not object to this form of confidential quality assurance.

- I agree ☐ or I object/refuse ☐ that my injury on duty records should form part of the documents reviewed in this study.

Read at (place)... on (date) ....2013.

....
Initials and name of Participant

Researcher Contact Details
Principal Researcher
Charlene Esau
Email: charl.esau@uct.ac.za
(w) 021 650 2021,
(c) 073 763 5254

Research Supervisors
Prof. D.Khalil
Email:KhalilD@cput.ac.za
(w) 021 953 8644

Mrs. A.Dunn
Email: DunnA@cput.ac.za
(w) 021 959 6921

Cape Peninsula
University of Technology

Prevention and management of occupational injuries at selected higher education institutions in the Western Cape, South Africa.

Code: _____   Date: _____

Dear Participant,

You are being invited to take part in a research study. Please take some time to read the information which will explain the details of the study. Please read the instructions and answer the questions below. It is very important that you are fully satisfied that you clearly understand what this research entails and how you could be involved. Your participation is **entirely voluntary** and you are free to not participate. If you say no, this will not affect you negatively in any way whatsoever. You are also free to withdraw from the study at any point, even if you do agree to take part. This short survey will help us to explore the injury on duty prevention and management strategies that are currently used at your place of work. The study will try to show specific areas where injury prevention instructions and goals are not working as it should. Your feedback is very important. If you have any questions about this research then you are welcome to contact the principal investigator at 021-650 2021, 073 7635254 or email your queries to cage6470@gmail.com.

Instructions to participants: - There are 4 sections to this questionnaire. Please answer all the questions in each section and return the completed questionnaire by fax (086 506 1432) or email (cage6470@gmail.com). You may also place the completed questionnaire in the Survey Drop-Box at the Reception Desk at the Information Centre.

SECTION 1

1.1   How do you report an injury on duty at your workplace?

....

Please return the completed questionnaire by fax (086 506 1432) or email (cage6470@gmail.com). You may also place the completed questionnaire in the Survey Drop-Box at the Reception Desk in the Information Centre.

1.2 Do you know if your work has a procedure to help you complete a form for injuries on duty? *(Tick the appropriate response)*

Yes		No		I don't know	

1.3 Have you reported any injuries to the campus security?

Yes		No		I don't know	

1.4 How do you report injuries if an injury happens after-hours?

....

....

1.5 Do staff report minor injuries to the safety rep or first aiders?

Safety Rep	First Aiders	Other	(if selecting other - state "who" below)
			_____

1.6 Where does staff get help if they have minor injuries?

....

1.7 Have you ever been injured on duty?

Yes		No		*(Tick the appropriate response)*

1.8 Have you ever completed injury on duty forms for an injured employee?

Yes		No		*(Tick the appropriate response)*

SECTION 2

2.1 Do you have an injury on duty policy? *(Tick the appropriate response)*

Yes		No		I don't know		*(Tick the appropriate response)*

2.2 Where do you find emergency information?

....

....

2.3 Do you have a health and safety policy?

Yes		No		I don't know		*(Tick the appropriate response)*

2.4 Have you participated in an Employee Wellness Day at work?

Yes		No		None offered		*(Tick the appropriate response)*

2.5 What safety training have you received?

....

2.6 Did you receive health and safety induction before you started working?

Yes		No		None offered		*(Tick the appropriate response)*

2.7 Would you like to receive health and safety information regularly?

Yes		No		*If Yes, please select how often below.*		
Weekly		Monthly		Every 3rd Month	Every Semester	Once a Year

2.8 What injury prevention information have you used most often?

Pamphlets	Safety Signs	None	PowerPoint's
Newsletters	Online	Safety talks	Video clips
Brochures	Email	Seminars	Training
Posters	Intranet	Workshops	Demonstrations

(Tick as many options as applies to you)

2.9 What other ways would you prefer to receive injury prevention information?

....

SECTION 3

3.1 Do you know who the health and safety rep is in your area?

Yes		No		I don't know		*(Tick the appropriate response)*

3.2 Do you have a health and safety committee?

Yes		No		I don't know		*(Tick the appropriate response)*

3.3 How is health and safety coordinated on all campuses?

....

....

3.4 Who has overall responsibility for health and safety at your workplace?

....

....

Please return the completed questionnaire by fax (086 506 1432) or email (cage6470@gmail.com). You may also place the completed questionnaire in the Survey Drop-Box at the Reception Desk in the Information Centre.

3.5 Who are the decision-makers in an emergency situation at your campus?

....

3.6 Is there a staff health service at your campus?

Yes		No		I don't know		*(Tick the appropriate response)*

3.7 What do you consider to be most effective in the prevention of staff injuries?

Rank the items below from 1 to 5 in order of importance to you

Information about injuries on duty		1 = Most important 5 = Least important	
Staff interaction in dealing with injury on duty management		Training to prevent and manage injuries	
Occupational health and safety services		Organizational support to manage injury prevention.	

3.8 Do staff have access to any counselling services?

Yes		No		I don't know		*(Tick the appropriate response)*

SECTION 4 *(Demographic Data – please answer or tick in the box or space provided)*

4.1 In what year did you start working at this University?

....

4.2 What nationality are you?

....

4.3 What sex are you?

Male		Female	

4.4 Which department do you work in?

....

4.5 Are you an Academic or non-Academic staff member?

Academic		Non-Academic		*(Tick the appropriate response)*

THANK YOU FOR COMPLETING THIS SURVEY!

Please return the completed questionnaire by fax (086 506 1432) or email (cage6470@gmail.com).
You may also place the completed questionnaire in the Survey Drop-Box at the Reception Desk in the Information Centre.

Permission to access site 2

Cape Peninsula
University of Technology

Cape Peninsula University of Technology
Secretary to the Human Resources Director
Office: Room 6.12, Admin, Cape Town Campus
28 October 2013

Att.: Mrs Joy Fish
Acting Director: Human Resources

Re.: Permission to access CPUT staff as Research participants

Dear Mrs Fish,

I am a student at CPUT and am presently completing an MTech Nursing degree. My research topic is "Prevention and management of occupational injuries at selected higher education institutions in the Western Cape, South Africa." The research method is a multiple case study that will involve the collection of data via questionnaires, review of documents and interviews with key respondents. The specific documents to be reviewed are WCL2 Employers report of an Accident, Annexure 1, Security injury or accident records, Health & Safety committee meeting minutes, Quarterly Inspection reports and Public documents (newsletters, newspapers, and electronic communication to employees).

The purpose of this study will be to explore the injury on duty prevention and management strategies that are currently used at this HEI and will try to identify specific areas where injury prevention instructions and goals are not working as intended. There are no risks, physically, mentally or professionally to any of the participants and all information collected will only be available to the researcher and her supervisors and will be handled as private and confidential. All identification will be kept anonymous and each participant will be identified by a number or letter when data is entered into a publication or the write up of this dissertation. Participation in this study is voluntary and the participants will not incur any costs. A copy of the outcomes will be summarised and will be made readily available to all participants upon the completion of the study.

Participants will only be selected from the Maintenance, Traffic, Estates & Custodial Services, the Human Resources departments, Health and safety representatives and executive members forming part of health and safety structures. Strict confidentiality and privacy will be maintained and none of the participants or case study sites will be named in any publications or the dissertations write up. All ethical guidelines have been adhered to and no participants will be recruited without providing the potential respondents with full information about the study before obtaining their signed letter of consent.

The research will be conducted with minimal interruption to any services and the interviews will not be longer than 15 to 30 minutes. None of the participants will need to leave their work environments to participate in this study and there is no foreseeable physiological risk or psychosocial stressors associated with participating in this study. Attached please find a copy of the CPUT Health and Wellness Sciences Research Ethics Approval Letter for me to commence with this study. I look forward to engaging with a CPUT Liaison to assist me in forwarding an email to all employees working in the Departments selected as research samples for this study. Where the employees do not have access to an email address, a letter will be forwarded to the employee via internal mail.

Please feel welcome to contact me or my research supervisors for further information or details pertaining to this research proposal.

Yours sincerely,

Principal Researcher
Charlene Esau
Email: charl.esau@uct.ac.za
(w) 021 650 2021
(c) 073 763 5254

Research Supervisor
Prof. D.Khalil
Email:KhalilD@cput.ac.za
(w) 021 953 8644

Co-Supervisor
Mrs. A.Dunn
Email: DunnA@cput.ac.za
(w) 021 959 6921

APPENDIX F: WCL 2 Employers report of an Accident

EMPLOYER'S REPORT OF AN ACCIDENT

COMPENSATION FOR OCCUPATIONAL INJURIES AND DISEASES ACT, 1993

Section 6(A) (b) – Annexure 13

Instructions:
Complete the form in block letters and mark appropriate areas (X)

(For official use only)
Claim No.: ....
Provincial Office
....
Date ....

DECLARATION BY EMPLOYER OR AUTHORISED PERSON

I hereby declare that the particulars, shown in items 1 to 62 of this report, of an alleged injury on duty, are to the best of my knowledge and belief true and accurate.

Signed on this .... day of ....year............. ➡ **Signature** ....

EMPLOYER

1. Registered name with the Compensation Commissioner ....
2. Registered number of this business with the Compensation Commissioner
3. Contact person ....
4. Street address .... 5. Postal code ....
6. Postal address .... 7. Postal code .... 8. Tel. no. (.............) ....
9.1 Fax no. (..........) .... 10. Situation of business/farm ....
9.2 E-mail address ....
11. Nature of business, trade or industry ....

EMPLOYEE (CERTIFIED COPY OF IDENTITY DOCUMENT TO BE ATTACHED)

12. Is the injured person a | working director | working member of a CC | owner of | partner in the business? | Not applicable |
13. Surname .... 14. First names ....
15. ID no. .... 16. Date of birth ..../......./....... 17. Sex | Male | Female |
18. Marital state | Married | Single | 19. Citizen of ....
20. Personnel no. .... 21. Occupation ....
22. Street address .... 23. Postal code ....
24. Postal address .... 25. Postal code ....
26. Tel. No. (...........) ....
27. Period in your employ (years/months) ..../.......... 28. Expected period of disablement (days) | 0-13 days | 14 & more |

ACCIDENT

29. Date of accident ..../......./...... 30. Time ....
31. Place of accident .... 32. District ....
32.2 Province ....
33. Date employee reported accident ..../......./....... 34. Time ....
35. What task was the employee performing at the time of the accident? ....
36. Period of experience in the task performed (years/months) ..../..........
37. Was his action at the time of the accident in connection with your trade or business? | YES | NO |
   (If "no" state reasons on reverse side Part A page 3)
38. Short description of how the accident occurred. (**ALSO** mark the applicable items on the reverse side of Part A Page 3 and use same
   for a full description) ....
   ....
   (Refer the machine/process involved, whether the injured person fell or was struck and all the factors contributing to the accident).
39. Was the accident a traffic accident on a public road? | YES | NO |
40. Nature of injury sustained (e.g. index finger of right hand crushed) ....
   Mark any of the following when applicable: | Killed | Amputation | Unconsciousness |
41. Are you satisfied that the employee was injured in the manner alleged by him? | YES | NO | If not, give reasons.
   (If "no" state reasons on reverse side Part A page 3)
   ....

PART A PAGE 2 MUST ALSO BE COMPLETED

APPENDIX G: Department of Labour Incident Report

GOVERNMENT NOTICE - DEPARTMENT OF LABOUR

NO. R. 929   25 June 2003

OCCUPATIONAL HEALTH AND SAFETY ACT, 1993 (ACT NO. 85 OF 1993)

General Administrative Regulations, 2003

The Minister of Labour has, under section 43 of the Occupational Health and Safety Act, 1993 (Act No. 85 of 1993), after consultation with the Advisory Council for Occupational Health and Safety, made the regulations in the Schedule.

ANNEXURE 1

OCCUPATIONAL HEALTH AND SAFETY ACT, 1993
(ACT NO 85 OF 1993)

REGULATION 9 OF THE GENERAL ADMINISTRATIVE REGULATIONS
RECORDING AND INVESTIGATION OF INCIDENTS

A. RECORDING OF INCIDENT

1. Name of employer

....

2. Name of affected person...

3. Identity number of affected person...

4. Date of incident ....5. Time of incident...

6. Part of body affected

Head or Neck	Eye	Trunk	Finger	Hand
Arm	Foot	Leg	Internal	Multiple

7. Effect on person

Sprains or strains	Contusion or wounds	Fractures	Burns	Amputation
Electric shock	Asphyxiation	Unconsciousness	Poisoning	Occupational Disease

8. Expected period of disablement

0-13 days	2-4 weeks	>4-16 weeks	>16-52 weeks	>52 weeks or permanent disablement	Killed

9. Description of occupational disease...

10. Machine/process involved/type of work performed/exposure** ....

11. Was the incident reported to the Compensation Commissioner and Provincial Director?

Yes	No

12. Was the incident reported to the police?*

Yes	No

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13. SAPS office and reference ....

'to be completed in case of a fatal incident.
** In case of a hazardous chemical substance, indicate substance exposed to

---

B. INVESTIGATION OF THE ABOVE INCIDENT BY A PERSON DESIGNATED THERETO

1. Name of investigator ....

2. Date of investigation ....

3. Designation of Investigator ....

4. Short description of incident
....
....
....
.

5. Suspected cause of incident
....
....
....

6. Recommended steps to prevent a recurrence
....
....
....
....

....
    Signature of Investigator   Date

C. ACTION TAKEN BY EMPLOYER TO PREVENT THE RECURRENCE OF A SIMILAR INCIDENT

....
....
....

....
    Signature of employer   Date

D. REMARKS BY HEALTH AND SAFETY COMMITTEE

Remarks
....
....
....

....
Signature of Chairperson of Health and Safety Committee   Date

APPENDIX H: Permission to access health and safety documents

Cape Peninsula
University of Technology

Cape Peninsula University of Technology
Safety, Health & Env. Risk Dept.
Bellville Campus, Symphony Way
21 February 2014

Att.:   Mr Sinethemba Mpambane
        Facility Management: Admin
        Safety, Health & Env. Risk Dept.

Re.   Permission to access WCL2 & Annexure 1 Reports of Bellville Campus

Dear Sir,

I am a CPUT student (197072801) completing data collection as part of my thesis for submission to the CPUT Faculty of Health & Wellness Studies HDC. The information will only be used to evaluate the risk ratings and the hazard profiles of this Higher Education Institution as part of the research protocol for this thesis.

No participating Institutions or their staff will be named in any publication relating to this research and all the data will be destroyed according to the research protocol that was accepted and approved by the CPUT HWS Ethics Committee.

Attached please find the letters from the CPUT Research Ethics Committee and the CPUT HR Director permitting me to commence with this study and its relevant data collection methods as stated in the Research Proposal.

Please feel welcome to contact the CPUT Nursing Postgraduate Department to liaise with my Research Supervisor, Prof. Doris Khalil, or my Research Co-Supervisor, Ms Angela Dunn. You may also verify my status as a CPUT student conducting approved research via contacting the CPUT Faculty of Health & Wellness Studies Head of Department, Mr Shafiek Hassan.

Documents attached:
1. HWS Ethics Committee Research Approval Letter
2. CPUT HR approval to commence data collection

I trust that the findings of this study will be beneficial to CPUT and will assist the institution in developing an innovative health and safety system aligned to the evolving needs within the higher education setting.

Safety greetings,

Charlene Esau (Masters Nursing: MTNurr – 197072801
Tel: 021 650 2021 (o/h)
Cell: 073 763 5254
Email: charl.esau@uct.ac.za

Prevention and management of occupational injuries at selected higher education institutions in the Western Cape, South Africa.

APPENDIX I: Interview schedule and plan to conduct interviews

INTERVIEW SCHEDULE

Prevention and management of occupational injuries at selected higher education institutions in the Western Cape, South Africa.

Interview site: _____   Date: _____

Note to Interviewer: *Instructions to you are in italics. Questions for you to read out are in* **bold normal** *print*

Interview Reference Number:

Read out the following:
We are carrying out this study to explore the injury on duty prevention and management strategies that are currently used in different higher education settings. Would you mind answering a few questions on your experience of the service, please be advised this interview will be recorded? (*If they decline, discontinue the interview and thank them.*)

Your answers will be treated with confidentiality among project staff for the purpose of evaluating the injury on duty prevention and management strategies, and in the production of the project report. All responses will remain anonymous. However, I would like to talk to you again for a follow-up interview. Would you be agreeable to that?

How would it be best to contact you later on?

Record contact details here, (including name)

....

....

....

Aim 1: To determine the types of work-related injuries that occur at HEI's in the Western Cape.
Objective: Assess injuries reported to the department of labour on COIDA form WCL2 Employers Report of an Accident.

Question 1:

What challenges do you experience in the management of injuries on duty?

....

....

....

Aim 2: To examine strategies put in place at HEI's to prevent injuries in the workplace.

Objective: Review policies and procedures related to injury on duty prevention.

<u>Question 2:</u>

What constraints do you have in implementing the occupational health and safety system that you envision?

....

....

....

Aim 3: To examine systems in-place to manage workplace injuries at HEI's.

Objective: Examine the health and safety structures (safety committees) and their related injury on duty documents (Annexure 1 reports) in place at the HEI's.

<u>Question 3:</u>

   (a) What injury prevention strategies do you have in place?

....

....

....

   (b) How is the effectiveness of this system monitored or assessed?

....

....

Thank you very much for taking the time to answer my questions.
(Double check the contact details on page 1 - phone number or email address)

Plan to conduct interviews

Week: _____

Case: Management/ Exec/ HR/ Maintenance/ SHE Rep/ Security

Day	Site 1	Site 2
Monday	Interview a Interview b Interview c Interview d	
Tuesday		Interview a Interview b Interview c Interview d
Wednesday	Interview a Interview b Interview c Interview d	
Thursday		Interview a Interview b Interview c Interview d
Friday	Interview a Interview b Interview c Interview d	

Timeframe

2hrs per day	4 thirty minute interviews per day
Interviews	To be conducted over a 2 month period
Total	A minimum of 160 interviews conducted over 8 weeks.

INTERVIEW TRANSCRIPTIONS UNIVERSITY-A

Interview with Health and Safety Manager

Question 1

Basically getting funding for materials. I think management, senior management support, they interested in serious injuries they not interested in smaller injuries and the prevention thereof.

Question 2

Basically I think it's more a communication thing, management taking responsibility, I don't know how to put it - JA I would say accountability. For example, maybe I can explain, it's like we have information about an injury on duty, we give it the reps but the managers are not interested because there is somebody else that looks after that, you understand? So you find that the forms need to be filled in management start asking questions, they weren't interested when you made the information available.

Question 3a

I would say it's very informal at the moment because you don't have the necessary buy in from management, I would like us to have more training commitment from management. We could organize training for management because you can disseminate with people on the ground but it's difficult to disseminate with people in leadership.

Question 3b

I won't say it's monitored, reports are written, graphs are forwarded but there is no analysis or somebody that comes back or action. If you use that statistics to ask for funding you get told about caps. I think my questions will be more different to other people's as I have a responsibility for those functions.

Interview with Risk Manager

Question 1

From a management perspective was the expectation from the injured party. The expectation more in the sense that in fact I will be referring to two occasions where I was involved as a manager and it was a scenario where staff members were injured but on both occasion it was more about how do I go about the claim to get money because im injured this is worth a couple of thousands and saying you have' nt even got you to the hospital yet, you have' nt even been assest by a doctor but the mid set is im gonna makev money here. I reached the

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point where money is gonna become available. And ofcourse in the period youv hav'nt been to the doctor, you hav'nt been assest, im sure im gonna be off 2 or 3 weeks now. The doctor will determine this and ofcourse from a management side getting the person to hospital, it's always a priority getting the person stabilized the normal reaction.

Question 2

What really bugs me is your department and it affects mostly you guys. Is all the contractors we have on campus when it comes to projects, if you look at places like the refinery and you can speak to anybody that worked at the refinery who done a job you will go through an induction where health and safety – the video that they actually have to watch and if you go there a week later to do another job you will go through the same health and safety talk. Whereas here it's like the company has worked on campus, even though the employees change the company has gone through health and safety so its fine and you find project managers tend to agree with contractors and not look at the severity of what can actually happen. The perception is that health and safety is like a law enforcement agency and its not the case. If you look at it in a more positive light, the prevention of it, perceptions will change. Everybody looks at it as a problematic department…I agree with you it's something that should be implemented from grade 1 or grade R as they have it now, when I was on school I never knew about health and safety, evacuation I only learnt about it afterwards, not even in high school. We do a few events if you have a closed venue and hall with over 2000 people you need and evacuation plan… Then you give them scenarios of what could go wrong, people think it won't happen here these are educated students, accidents can happen so quickly - somebody can just say something that can cause a stampede.

Question 3a

On campus we have this request to our contractors and project manager that they should all go through this induction and it's something that should be compulsory. Its almost as if its optional, but the buy in should come from the top that you will go for this induction but its seems our projects seem to be more deadline driven and it becomes this 5th wheel on a truck like this useless department, because it's a stumbling block to the job done. Whereas it's not and then when something happens on the site it becomes an issue, but you guys could have prevented it, like on a building site those tool box talks, to me its such an essential thing yet you find its almost like its optional thing with contractors, they would rather do the job and get it done before the rain comes than to sit for that 30 minutes and have a toolbox talk.

Question 3b

We have systems in place but it's not good enough it's not that we are vigilant; we should not make it optional. It's almost like its optional currently. It should be you will do that and it gets

signed off, you will do that induction and if you don't sorry you won't come on site that's it. We are more driven by the deadline to get the project done and this is where things go pear shaped … I'm not sure if there are any documentation that gets completed for every contract there are small ones … like I said earlier if you gonna do a job at the refinery you will declare and you will go to induction and there is a paper trail that follows.

1.　Interview with Executive Director overseeing all Departments
Question 1
"I have dealt with injuries, for me the biggest difficulty is the people who come with their ideas of what constitutes an injury on duty. As an example I take my experience in general industry. I am clouded in my judgment from my background in industry having real risks. I don't think our risks are life threatening like in a factory where you can lose a limb, electrocution or loss of life. Here people have possible injuries on duty to have a reduced work load and then they realize when it comes to incapacity and a loss of income they change their minds. People here use injuries as an avenue for their own agendas."

Question 2
"Because we deal in an environment where there is no loss of life like at a refinery or an abattoir or place where you can cut your fingers off or go up in a gas explosion are much more serious about following H&S protocols than in our environment. You'll find the very people who complain about H&S of their carpets because they want the carpet to be replaced is the very same professional who will walk through his lab bare feet and not see it as a H&S hazard. It is very easy for us to manipulate H&S than to implement H&S because it preys to the dangers of our own objectives. It is very difficult to balance H&S for us to do research and the next breakthrough you require a researcher that is sort of a maverick and to what extent do you as H&S tell these people that their output is limited."

Question 3a
"We go about things in the way required by the OHS Act".
Question 3b
"Our SHE Dept. is responsible to monitor the efficacy of our systems and external contractors are required to have a safety appointee to oversee their compliance to the OHS Act".

Interview with Maintenance Manager

Question 1

"The challenges we have is completing the paperwork promptly and also because we want to get the person to the hospital as soon as possible...The information is there but not all staff know how to deal with injuries or what action to take. This can cause more damage."

Question 2

"I won't say I've had any constraints but I haven't put in place any departmental manifesto. So we didn't do anything specific."

Question 3a

"Standard operating procedures are in place. Like interms of specific jobs we use specific PPE and demarcate areas to protect others and the property. We have job specific procedures".

Question 3b

"Monitored by the Supervisor or the Line manager by ensuring that the SOPs are in place…I would say it is a high risk place because H&S is not practiced in all areas. In the field it is not practiced and falls short and people who have to monitor the policies turn and look the other way…".

Interview with Maintenance Supervisor

Question 1

"Well to be honest with you because our dept. is relatively aware of what is in place we find that we don't constantly engage or look about this aspect. Things have been relatively quiet and well because we have meetings where people become aware of these health issues. Most of our issues are put in place. I don't have any challenges".

Question 2

"Well basically we have a monthly get together where issues are tabled. That process is long and drwn out. It is irritating and long winded and never gets implemented...Amendments stop before it can be implemented and follow up investigations don't take place."

Question 3a

"Uniforms and ladder inspections. A better standard of safety clothing and safety shoes is being implemented. Injury prevention awareness may be high among managers…I don't think that H&S is communicated to other categories of staff besides managers. There is little interest among the lower categories of staff because there is not enough management drive

to make staff take participation seriously to be driven to accept the idea of safety education. Peoples thinking should be challenged to taking it out into the community as well".

Question 3b

"It is currently not being monitored enough. Should be a monthly report from each person to see that everything is in place.".

2.   Interview with HR Practitioner

Question 1

"I haven't really managed any injuries while being here, but in my experience a challenge has been the delayed reaction or response in dealing with the incident. You have someone coming to you and you need to react quickly if you don't have the required knowledge… it makes you panic. Not knowing who to contact would just make things more complicated."

Question 2

"I'm the type of person who needs to sit and read through a policy in order to understand it. If it's not completely clear to me I will check with someone who has dealt with a similar case. I wouldn't go all maverick. I would need to know where to find the policy and need to understand it. I would look for an HR colleague who is able to guide me."

Question 3a

"None, it's not even until you came to me with these questions that it has crossed my mind".

Question 3b

"The effectiveness is not being monitored. Let me give you an example - I went to P&S and I tripped and fell in the building and a man and a lady saw me fall and they didn't offer to help me, they just looked at me".

3.   Interview with Estates Manager

Question 1

I have lots of outsourced staff and it's difficult to ensure that these employers are ensuring that their staff adheres to our safety policy. Our SLA places the responsibility on the contract company but we still have to ensure that they don't introduce problems and hazards in our areas.

Question 2

"I don't really have any challenges. I am in apposition where I can dictate what is required and the contractor has to adhere or leave our campus. I have a good partnership with health and safety and depend on them to see that things in our safety plan are in order."

Question 3a

"I have service level agreements which bind contractors to the requirements of the law and I rely heavily on the Safety department to ensure that the contractors are audited. I communicate to the contractors to ensure that they cooperate with the safety department and to ensure that we address any issues and concerns that are raised in safety meetings and through the safety reports".

Question 3b

"I depend on our safety systems that are overseen by the health and safety department and trust that any items of concern will be flagged by the system. In my opinion it is working well to help me in my portfolio".

4.   Interview with Traffic Services Manager

Question 1

For example report to the supervisor who reports to me but I think that should be the other way around. The supervisor and officers or workers should come to the manager, I must sign the forms. But I don't know half the story, whereas the supervisor is there her knows everything, but I'm supposed to sign and I don't know everything. That's a bit of a hick up, they should rather come report to me both that was there and we simultaneously can complete the form. They need to do this simultaneously and not half, half. That was one of the things then there is the halfcocked story, you doubt what they say, did it happen that way you know things like that. I believe that on the day not a couple of days afterwards are not on. On the day that the injury occurs you have a more true reflection, but they go home first and ponder how they gonna address this… My first initial response is did it really happen. Like Keith is injured at Hiding, he had a cut on his leg, he came to me directly and told me this happened, he showed it to me but he doesn't want to go the other route. But I made him put in the report that he refused to go that route.

Question 2

Obviously, because I started in 2004 this has been established already I also had to like just fall inline stuff was here already. I think we need to reviews more often about our system so that most of us are in comfort with managing employees and those that are injured. To get a better understanding or… Understanding. But also debate how you feel, how you see things

and then the SHE manager can facilitate the process and give us better input and say this is this and that is that, this why you do things like this. Because we don't have the authority, but if we sitting in a workshop explaining these things to us and debating on it can help me as a manager but we don't have that. Exactly that is what we lacking, I'm year 10 years in April, but ask me if I have ever been in a workshop where SHE things were spoken about. You must just step and go to this committee and most of our things are not H&S relate more risk, I sit more on the risk capacity than on the health, but I'm a manager there should be a balance between risk and health and safety.

Question 3a

Look we don't have a policy have never seen anything yet and highlighting something to me that could have been done. I have the liberty to go to the manager and I'm talking about the health and safety manager and I could have highlighted this because of the nature of our work, we at risk more than anything else we standing in road regulating traffic. The only thing that we put in place is wear your reflective, it's not a policy it's a talk able situation, it's a practice. It is a work practice and it has a history. When you do a point duty or if you stand out in the street you need to be clothed properly with the proper attire at night you need have a torch you need to be out there. "lyk soes die maan" I can't recall having a policy, which says... And then we need help, then we really need help. I have noticed… There is no dead thing that I can take off the shelf and say here is a policy.

Question 3b

It's not recorded anywhere, but because it being a common practice, before any person go out and do a job we inspect them so for example there's a … in the evening they must report to the supervisor, the supervisor will then inspect them to a see that they have the necessary paraphernalia on which will suite the situation when it turns dark. It's written down its common practice.

INTERVIEW TRANSCRIPTIONS UNIVERSITY-B

1. **Interview with Health and Safety Coordinator**

Question 1

"In certain faculties health and safety is included in the curriculum for students as an introductory level. For first years we do orientation and specific information on health and safety in their areas. Staff orientation makes a brief provision (10 minutes) for H&S to discuss matters with new staff."

Question 2

"Each department completes their own annexure 1 report. H&S only reports it to the DOL. Major problems in communicating and providing the necessary documents. People don't return the documents which prolongs the IOD process. Staff pays out of pocket and the reimbursements take very long which makes staff very unhappy. The whole IOD problem is that treatment is denied by Drs, this is a big problem for us. Each department must document the near-misses, but that is not happening. We don't have an electronic system to document incidences. Most of our injuries are ergonomic factors and muscular injuries. "

Question 3a

We are busy now to get processes in place and to train health and safety reps. We are still in the process of implementing a system.

Question 3b

"Currently we are busy implementing a safety system and thus far we have not monitored or assessed what we are putting in place. We intend having an internal audit on our campuses as an action plan for this year."

2.   Interview with Estates and Maintenance Manager

Question 1

"To be quite honest…very few challenges. Supervisors and foremen know the procedures. They inform H&S or Security and take the person to the offsite doctor and he will complete the necessary forms. Our process currently works smoothly"

Question 2

"Works well to treat minor injuries. We have had 2 incidences where orthopaedic injuries where ppl want to go to private hospitals and Drs. refuse to treat COIDA cases. Everything else works well. We have had cases years ago where COIDA paid someone back for an injury on duty. We have had some cases where ppl try to use IOD to get some days off from work. As far as I know nobody has self-harmed for monetary benefits. We don't have many injuries on duty, as you will see from the reports.All staff know to report anything that happens.We have a problem implementing and enforcing safe operating procedures eg. PPE."

Question 3a

"Safe work procedures and enforcing the use of safety equipment".

Question 3b

"The employer, Manager and Supervisors, have to ensure that staff under their authority are adhering to the safe working practices. ".

3. Interview with HR Practitioner

Question 1

"There isn't a comprehensive safety induction but I would imagine that the department has to do the induction with the incumbent. From HR there is only a basic induction twice a year in January and July…My suggestion is that as far as I know that the H&S Committee will provide h&s information to the incumbent. HR arranges a 10 – 15 minutes very basic intro to the university. It broadly introduces the person to the services on campus. I have no idea if someone is representing the university on the H&S Committee. I assume that there may be a link since the H&S officer has recently been moved out of HR to the infrastructure and facilities maintenance department. I think that in most cases injury prevention benefits to HR is overlooked because the benefits aren't immediately obvious."

Question 2

"I think the HR manager would be better able to answer these type of questions."

Question 3a

"I think the HR manager would be better able to answer these type of questions."

Question 3b

"I think the HR manager would be better able to answer these type of questions."

4. Interview with Protection Services Department Manager

Question 1

"My role is to assist with evacuation and to ensure that buildings are evacuated under 3 minutes, train Security in Level 3 First Aid and Fire safety…Unannounced fire drills in first semester and second semester orientation and announced safety fire drills. When we roll out fire drills everybody must take part in it. Safety pamphlets are distributed in the residences…We started going on the website in security in 2010 but health and safety is not on the website yet… Most health and safety is communicated via pamphlets…There is a health and safety policy but it is kept by the H&S department and deals with chemistry waste on campus… Ask the H&S coordinator for a copy of the policy."

Question 2

"I think H&S is the unit coordinators responsibility on the site. Our policy should be visible to all in the workplace. People should be aware that they are also responsible for their safety.

We deal with staff and students in labs and people must be trained. Certain policies must be in place and the policies guide us. As far as traffic is concerned do we have the necessary protective equipment…The fact is that speed limits is a problem. People are speeding on campus. We are starting a campaign to raise awareness that road safety applies on campus as well. People should know who the fire marshal and first aiders are in the departments. We are starting now to have the names in the H&S Forum… the Committee sits once a quarter. H&S reps have regular departmental meetings with the Safety coordinators…SHE Reps forward reports to the person sitting on the Safety Forum. H&S issues are raised on this forum – five campuses in CT all sit on this main H&S forum which started last year…We are making use of service providers our SLAs state that they must provide their staffs PPE, if we have a minor maintenance issue and safety signs which comes from the maintenance committee budget… They start now with the training of H&S Reps for departments after being nominated in the department. After training they will be appointed… Operations work very well… No constraints in the way that PSD and H&S operate in the Risk management dept. Security and H&S work closely… Certain things only come up in the forum. People going to security instead of the H&S officer. PSD only hearing after the incident happened. We have a electronic system to record all incidences on campus. Student awareness needs to be raised about smoking and the use of hookah pipes on campus. The incident protocol is that security must be informed and the student is taken to the clinic then they decide to contact EMS…I think we want to start the ER24 programme on campus. On Bellville we make use of the learner EMS trainees. We are negotiating a partnership with Paramedic students to assisting with incidences. There is a major concern on weekends when students fight and drink. Student health clinic is closed on weekends and security has to take the risk of taking students to Tygerberg. Risk is placed on the security and the policy does not provide guidance in these grey areas."

Question 3a: *"It is currently not being monitored".*

Question 3b: *"It is not being monitored".*

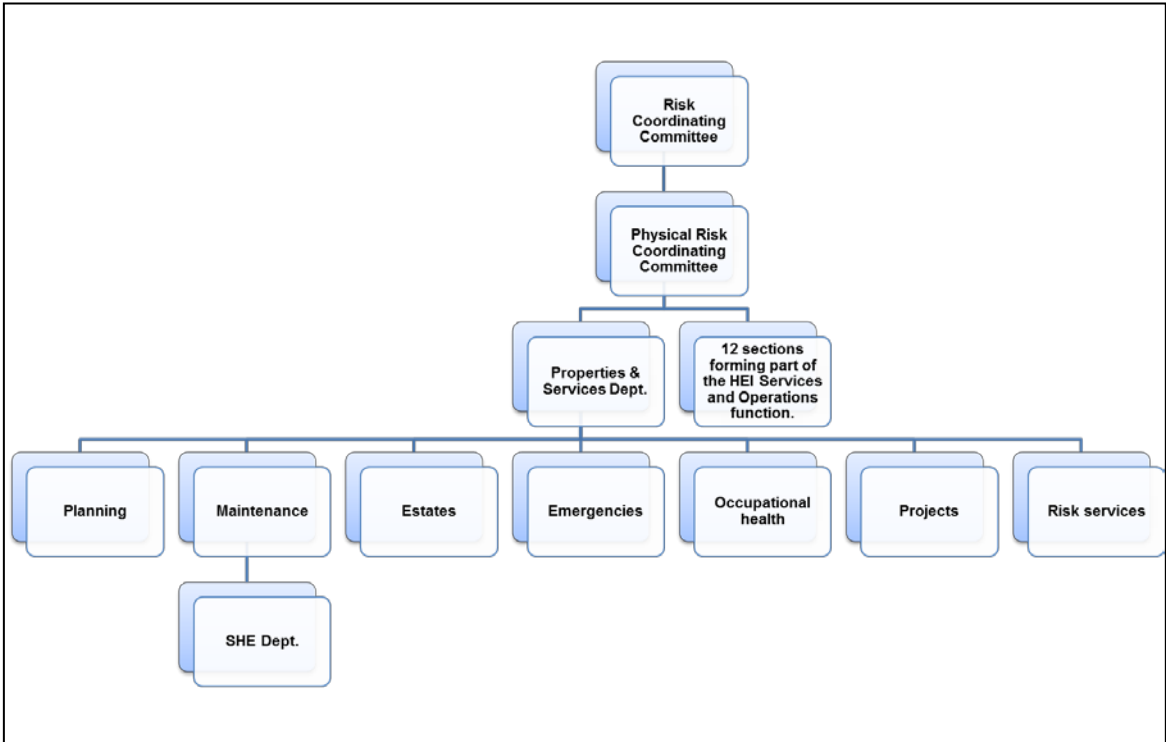# APPENDIX K: Occupational health and safety structure at University-A

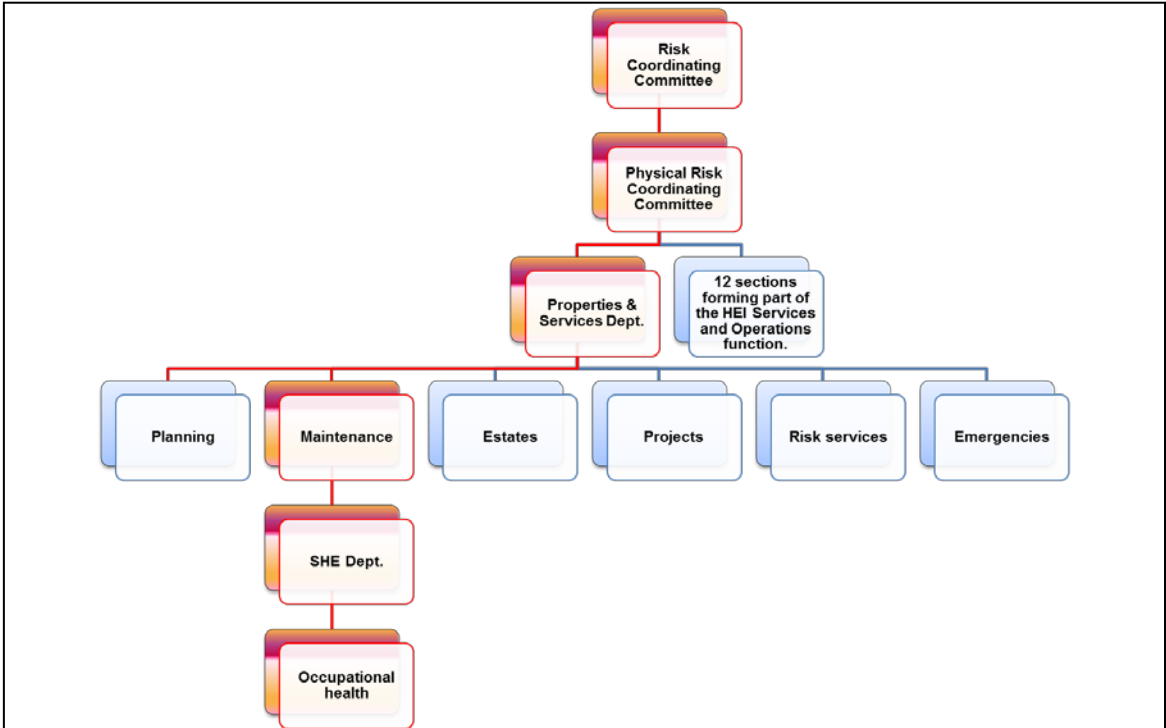**Figure 10: Abstract OHS system based on communicated institutional information**

Figure 11: Partial implementation of the OHS system reflected in the documents

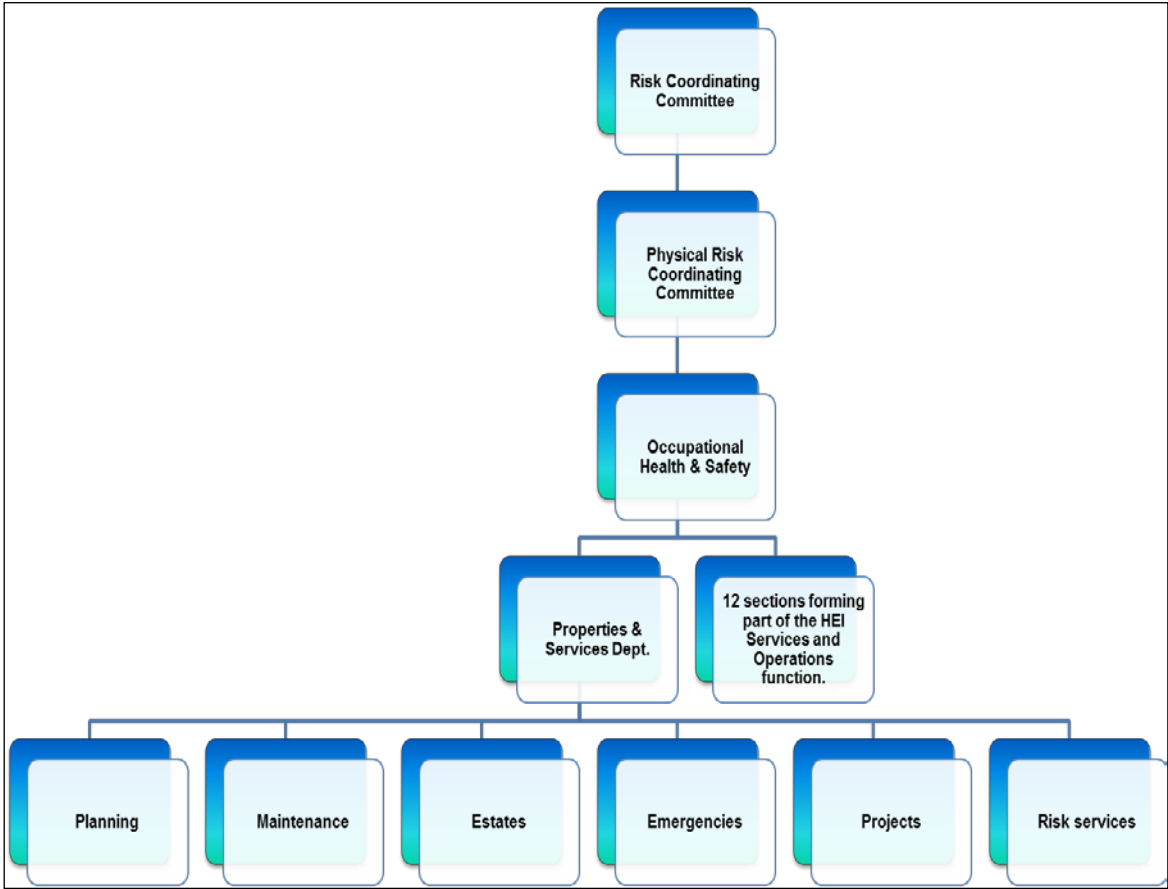# APPENDIX L: Recommended OHS operational structure

Figure 12: OHS system with a two-way process to and from all support service areas