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Causes and effects of physical injuries to Prison Officers employed in a high risk and high need offender management environment in Western Australia

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***Causes and effects of physical injuries to Prison
Officers employed in a high risk and high need
offender management environment in Western
Australia***

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Ethical Approval

Ethical approval for this research was granted by the following committees:

The Department of Corrective Services (DCS) WA–Research and Evaluation Committee (REC)

Edith Cowan University's Human Research Ethics Committee.

All data used in this research was handled by the researcher as confidential information. All identifying information or records pertaining to this research was disposed of in line with DCS Confidentiality and Information Privacy Policy and Section 6.4 of the General Disposal Authority for Human Resources Records.

Declaration

I certify that this thesis does not, to the best of my knowledge and belief:

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Abstract

Prison Officers (POs) involved in high need offender management frequently face risks that could affect their health, safety and wellbeing. Several studies have shown that direct client centred violence, inadequate management systems and the general nature of prison environments are major factors impacting on the well being of POs (Fisher & Gunnison, 2001; Kieckbusch, Price, & Theis, 2003; Mitchell, Mackenzie, Styve, & Gover, 2000). There is limited literature on causes and effects of physical injuries on this group of law enforcements officers. This is the first study conducted in Western Australia (WA) that investigated the causes and effects of physical injuries to POs and the impacts thereof on these individuals and the Department of Corrective Services (DCS) as an organisation.

The study aimed to provide a recent credible data source which may influence policy decisions and procedures in WA corrective institutions. The study cohort of 146 POs completed a questionnaire that included variables, such as health and fitness, job demands, support and constraints to ascertain the causes and effects of physical injuries among this high risk cohort of workers.

The age range of POs included in the study cohort (N = 146) was 21 – 71 years. In addition, all Department of Correctional Services (DCS) physical injuries databases from 2008 to 2010 were analysed and managers and employee welfare services staff completed a questionnaire. The results indicated that there is a positive relationship between current employment status and work related physical injuries as measured over the last two years. The major causes of physical injuries were from slips trips and falls and hitting objects with part of the body or against objects during the process of managing non compliant prisoners. Variables such as physical fitness, job demands, lack of recognition by society, and fear of blood borne infections were significant predictors of physical injuries amongst POs. However, a number of other risk factors, including age and body mass index (BMI), were not related to the prevalence of physical injuries.

There are a number of recommendations from the study that can be implemented. These include formation of accident/incident investigation work groups to conduct and analyse incidents and propose long term preventive and corrective measures. In order to improve ways of dealing with mentally ill prisoners and the training curriculum of POs should include management of mentally ill prisoners in a prison setting. In dealing with the aging population affecting the Australian workforce, DCS should develop plans to attract young POs for succession planning. Comprehensive safe physical training and maintenance programs in prisons may benefit the POs in dealing with prisoners. Areas for future research may include; the

role of mental health services in reducing physical harm in prisons and minimising the causes and effects of physical injuries to the prison frontline workforce.

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CONTENTS

Use of this thesis	i
Ethical Approval.....	ii
Declaration.....	iii
Abstract.....	iv
Acknowledgements	vi
CONTENTS	vii
LIST OF TABLES.....	x
LIST OF FIGURES.....	xi
APPENDICES.....	xii
CHAPTER 1.....	1
INTRODUCTION.....	1
1.1 Background.....	1
1.2 Statement of the Problem.....	2
1.3 Research Hypotheses	3
1.4 Methodology Overview	3
CHAPTER TWO.....	4
LITERATURE REVIEW	4
Introduction	4
2.1 Pre Service Training, Level of Education and Custodial Orientation.....	5
2.2 The Prison Officer Job.....	7
2.3 Health and Physical Fitness.....	9
2.4 Experience and Age.....	10
2.5 Shift Work /Working Hours.....	10
2.6 Physical Injuries	11
2.7 Workers Compensation Claims and Lost Time Injuries (LTIs).....	13
2.8 Aging Workforce.....	15
2.9 Conclusions drawn from the literature.....	15

CHAPTER THREE.....	17
METHODOLOGY.....	17
3.1 Study design.....	17
3.2 Subject selection.....	17
3.2.1 Selection of the study reference population.....	17
3.2.2 Sample size.....	17
3.3 Data Collection.....	17
3.4 Data Analysis.....	18
3.5 Ethics approval.....	18
CHAPTER 4.....	19
RESULTS.....	19
4.1. Study cohort data.....	19
4.1.1 Population characteristics.....	19
4.1.2 Education level for current Prison Officers.....	19
4.1.3 Current employment status from sample.....	20
4.1.4 Years of experience.....	21
4.1.5 Period on the job before the first injury.....	21
4.1.6 Work related physical injuries.....	21
4.1.8 Causes of injuries.....	22
4.1.9 Nature of injuries.....	23
4.1.10 Potential risk factors for physical injury in a prison environment.....	23
4.1.10.2 Other risk factors.....	24
4.1.11.1 Treatment.....	24
4.1.11.2 Time off work.....	25
4.1.11.3 General ill health effects subsequent to sustaining a work related injury.....	25
4.2 Department of Corrective Services data (DCS data).....	26
4.2.1 Reported titles for uniformed officers who sustained injuries in 2008 – 2010.....	26
4.2.2 Causes of injuries according to DCS injury database.....	26
4.2.3 Nature of injuries.....	27

4.2.4 Workers' Compensation claims from DCS database.....	27
4.2.4 Claims by age.....	28
4.3 Management and employee welfare services staff questionnaire survey.....	29
4.3.1 Causes of injury	29
4.3.2 Causes of injury	30
CHAPTER 5.....	31
DISCUSSION	31
5.1 Population Characteristics of POs.....	31
5.2 High Risk Prison Activities.....	34
5.3 The causes of physical injuries among WA Prison Officers.....	35
5.4 Nature of injuries	37
5.5 Other risk factors.....	37
5.6 Effects of work related physical injuries	38
5.7 Treatment.....	39
5.8 Time off work	39
5.9 General ill health effects	40
5.10 Workers' Compensation Claims	40
5.11 Conclusion.....	41
6 Recommendations	42
7 Knowledge contribution	44
REFERENCES	45
Appendix 4: Questionnaire for Prison Officers.....	52
Questionnaire for Managers and Employee Welfare Staff	60

LIST OF TABLES

Table .2.1 Stress claims	14
Table .2.2 Workers' compensation data 2008/2009.....	15
Table 4.1 Higher level of education.....	18
Table 4.2 Years of experience of Prison Officer.....	19
Table 4.3 Period in the job before first injury.....	19
Table 4.4 Work related physical injuries in the last two years.....	19
Table 4.5 Engaging in high risk activities and sustaining physical injury.....	20
Table 4.6 Causes injuries to sample group.....	20
Table 4.7 BMI Ranges.....	21
Table 4.8 Treatment given to Prison Officers after injury.....	22
Table 4.9 Time off due to work related physical injuries.....	23
Table 4.10 General effects.....	23
Table 4.11 Reported title for those who sustained injuries between 2008 - 2010.....	24
Table 4.12 Causes of injuries according to DCS database.....	24
Table 4.13 Nature of injuries from DCS database.....	25
Table 4.14 Claims Flag.....	25
Table 4.15 Claim Flag by age group.....	26
Table 4.16 Effects on DCS as viewed by managers and employee welfare services staff.....	28

LIST OF FIGURES

Figure 4.1 Age distribution for sample group 19

Figure 4.2 Current employment status from sample group.....18

Figure 4.3 Nature of injuries.....21

Figure 4.4 Causes of injuries.....27

APPENDICES

Appendix 1: Edith Cowan University Ethic Approval.....	46
Appendix 2: DCS Corporate Support Research Approval and Consent.....	47
Appendix 3: DCS Research and Evaluation Committee Research Approval.....	48
Appendix 4: Questionnaire for Prison Officers.....	49
Appendix 5: Questionnaire for Managers and Employee Welfare Staff	57

CHAPTER 1

INTRODUCTION

Studies of occupational injuries conducted over time have contributed significantly to the body of empirical knowledge which is now available to organisations, and this has assisted Managers to develop occupational health and safety systems aimed at reducing and preventing the causes and impact of such injuries. This study was conducted in Western Australia's (WA) Department of Corrective Services (DCS), exploring the causes and effects of physical injuries to POs as well as the impact on the Department as an employer. The study used a quantitative analysis of causes and effects of injuries collected through questionnaires administered to POs and prison Managers and by reviewing the DCS injuries database.

1.1 Background

Occupational injuries make a significant contribution to the injury burden of communities, impacting negatively on workers, during their useful years in the workforce (Smith, 2001). Work in the prisons is challenging and complex, and provides limited opportunities for individuals to reach their full potential (Lambert, 2006). A number of studies conducted on POs have examined different duties, such as security checks, prisoner supervision, participating in prisoner rehabilitation programs, promoting anti-bullying and suicide prevention policies, as well as employment of physical control strategies. Literature has identified that there are few studies which have explored the causes and impacts of physical injuries on POs, particularly in Australia. Research also indicates that health and safety of custodial officers is not effectively cosseted by employers, however, these officers face high stress levels, which to some increase the prevalence and incidence of cardiovascular diseases, furthermore, failure to cope with psychological stress results in them being prone to sustaining physical injuries (Levy, 2011; Zimmerman, 2012). Some researchers have reported that POs, on average, die earlier or have shortened life expectancy which is attributed to stress and job dissatisfaction (Lambert, Hogan & Griffin, 2007).

The focus of corrective services is to improve community safety and reduce re-offending utilising the "human services worker" model of rehabilitating prisoners. This model was advocated to promote job satisfaction of POs. However, this approach has also affected PO job demands (Hepburn & Knepper, 1993). Corrective services worldwide, including DCS in Western Australia, have occupational health and safety obligations to provide a safe workplace to their employees. Work related physical

injuries have an impact on the capacity of DCS to ensure high quality service delivery. The multifaceted activities in WA prisons are known to include “high risk” tasks and result in some instances, in occupational injuries to officers and other staff. The unprecedented increase in the prisoner population in WA prisons in 2008/09 affected POs in terms of their ability to deliver a high quality service and this in turn impacted on DCS as an organisation. The growth in the number of prisoners introduced tensions within the prisoner population, which had a bearing on the safety and health of POs, and resulted in an increased risk of assaults and other critical incidents experienced by custodial officers. As a foreseeable problem to the organisation, one of DCS’s key performance indicators is to “achieve operational compliance and enhance capacity” (Department of Corrective Services, 2009). To standardise performance and meet the demands of the occupation, the DCS embarked on an occupation – specific recruitment campaign to attract POs to the organisation. This aligns with its key result area, which focuses on the successful attraction, selection, training and retention of DCS staff (Department of Corrective Services, 2010a). Like all other Australian workplaces, DCS faces a problem in that the workforce is an aging population. This study chose to address causes and effects of work related physical injuries as one of the staff related issues that adds knowledge to DCS’s Occupational Health and Safety Management Systems. The findings may also influence DCS strategic planning and policy formulation towards improving occupational health and safety processes. The research will equally provide empirical knowledge on the causes of workplace physical injuries and how these impact on DCS and POs, and may be used as reference by other Correctional Services in Australia.

Questionnaires were administered to investigate characteristics of the sample cohort of POs which included the following: gender, age, highest education, employment status of POs grades, years of experience on the job, health and fitness status and factors related to general physical health activities, job demands, support and constraints. Managers were surveyed to determine what they consider the major causes of workplace physical injuries and their impact on DCS and employees. The DCS injuries database was reviewed to verify the causes of injuries and workers’ compensation claims and to verify the relationships between information from the questionnaires and the database.

1.2 Statement of the Problem

The Department of Corrective Services (DCS) in Western Australia (WA) raised concerns in 2005 about the high number of physical injuries suffered by POs, which in turn resulted in an increasing number of Workers’ Compensation claims and lost time. There were no clear pointers to the causes, as prison environments are high risk areas

that can have a negative impact on both the POs, inmates and the DCS. The high number of compensation claims lodged by POs was an indicator of potential problems; however, causes were largely unknown. This study investigated the causes and effects of occupational physical injuries to POs by:

1. Exploring factors that led to POs sustaining work related physical injuries.
2. Examining the impact of physical injuries sustained at work on POs and the DCS.

The effects of injuries both to the individual PO and DCS were explored through questionnaires applied to POs, workplace managers and employee welfare staff. Furthermore, records of accident/incident forms completed by injured POs for 2008/10 were sourced from the DCS injuries database and analysed.

1.3 Research Hypotheses

1. The prison environment in WA is a potential risk factor for physical injury of POs.
2. Several identifiable factors influence the risk of physical injury among POs.
3. Physical injuries sustained by POs while on duty impact negatively upon the affected officer, other staff and the DCS.

1.4 Methodology Overview

The research methodology is detailed further in the next chapter of this study. Study data were collected using a questionnaire applied to the chosen cohort of POs working in the WA metropolitan prisons and to managers of these sites as well as DCS employee welfare staff. All physical injuries and workers' compensation claims data reported by POs between 2008 and 2010 were analysed using the Predictive Analytic Software (PASW 18) version 18. The data were grouped in the following ways:

- characteristics of POs
- mechanism of injury by agency of injury or break down agency mechanism of injury by nature of injury
- mechanism of injury by level of position
- nature of injury by bodily location of injury (Standards Australia, 1990) effects to individuals and DCS

Qualitative analysis was utilised to discuss effects of physical injuries as viewed by managers and employee welfare services staff.

CHAPTER TWO

LITERATURE REVIEW

Introduction

This chapter presents the key concepts that elucidate factors impacting on the incidence of physical injuries in a prison based work environment and their impact upon the workforce and human resources management in general. Furthermore, the chapter outlines the following: prison environments and prisoner populations, injuries associated with pre-service training of high risk personnel, job demands, physical fitness, shift work, lost time, as well as the impact of workers compensation claims, and the susceptibility of the aging work force to injuries.

Custodial work is generally not well recognised by the general public world wide as prisons are not deemed part of mainstream society. However, occasionally, when there are negative events such as deaths in custody, escapes and riots, the media bring prisons and custodial staff into the public domain and under close scrutiny (Garcia, 2008). The general population tends to undervalue the roles of POs; their jobs are regarded as “low status;” they are often referred to as people who failed to “make it” in other professions and have accepted PO work as an alternative to being unemployed. POs are however, the custodians of people who are generally very difficult to manage and such individuals cause safety and security concerns to society. Therefore, their role is extremely important and of enormous value to society (Crawley, 2006; Garcia, 2008; Kauffman, 1988; Philliber, 1987). Studies have shown that the true attraction to prison jobs is the guaranteed employment security and stable pay. Unfortunately the perception of it being a low status job, with less societal support, adds to burnout symptoms, low levels of job satisfaction, and turnover intent among POs, which may also be a factor for physical injuries at work (Stalgaitis et al., 1982).

Research has found a positive correlation between POs roles and burn-out, which resulted in poor judgement that consequently exposed officers to physical injuries (Shamir, 1982). In the current age of elevated risks associated with the potential for HIV and hepatitis infection, coupled with high prisoner populations, POs are further exposed to such risks. This is aggravated by managing mentally ill prisoners without training. Research shows that, with the current trends of incarcerations, 6.5% to 10% of prisoners have mental health illnesses and 15% to 40 % have moderate mental health illnesses and this clearly impacts on the work of POs (Ogloff, Roesch & Hart, 1994). The high percentages of people with mental health illnesses in prisons indicate that, prisons have become less safe for POs and other prisoners. POs perceive real threats and are in danger of physical assault and associated hazards on the job; this in

turn results in POs developing elevated stress levels and job dissatisfaction (Cullen et al., 1990).

The Australian national prisoner census (Australian Bureau of Statistics, 2011) stated that there were 83 573 people being managed by the corrective services in 2010. Not all of these people were actually in prison; in fact the incarcerated component consisted of 28 909 with the remainder being managed under community based corrections. The national average daily incarceration rate for the June quarter 2011 was 166 per 100 000 adult population. In the same period the imprisonment rates for states and territories were as follows:

- Northern Territory 748 per 100 000 adult population
- Western Australia 262
- New South Wales 179
- Victoria 107 and
- The Australian Capital Territory 87 (Australian Bureau of Statistics, 2010)

WA experienced a steady growth in its prisoner population during 2008/2009. The lower courts imprisonments increased by 16% (+366 prisoners) and the higher courts saw a 12% (+288 prisoners) increase. This population growth attributed to increased workloads for POs, subsequent increases in physical injuries, critical incidents and industrial issues regarding the management of high prisoner numbers, and the provision of safety for POs and prisoners. These unfolding events led to the DCS recruiting and training more POs (Department of Corrective Services, 2010a).

2.1 Pre Service Training, Level of Education and Custodial Orientation

Studies show that philosophies and approaches to managing prisoners changed in the 1980s from the traditional strict law enforcement approach to rehabilitation model, which also changed the prison guard role (Poole & Regoli, 1980). This resulted in POs gradually getting stressed in the course of duty when they lost punitive powers over prisoners. The prisoner – POs relationships have changed over time, and this has impacted negatively on POs, as the custodial orientation was disposed off and changed to that of monitoring and rehabilitation of prisoners (Poole & Regoli, 1980). These changes brought a lot of challenges to prison administrators in terms of getting the right person for the job. Managers of prison institutions in this dilemma then believed that recruiting POs with high education levels would promote job satisfaction and improve chances of prisoner rehabilitation (Robinson, Porporino, &

Simourd, 1997; Rogers, 1991). However, some research has shown that higher education level correlates with increased job dissatisfaction amongst POs (Robinson et al., 1997). There is some contradicting evidence to this assertion, with other research suggesting that higher levels of education increases the capacity of POs to accomplish the objectives of correctional services, which are focused on rehabilitation and treatment of offenders and to prevent re-offending (Cullen, Lutze, Link, & Wolfe, 1989). Although a number of early studies found positive relationships between education levels and job satisfaction, education level alone does not embrace all required PO outcomes, therefore other variables should be included in employee selection (Rogers, 1991).

The process of recruitment selection, testing and training of new POs is costly (Kieckbusch et al., 2003) and it is important for organisations to select appropriate candidates who are fit for the job, as this is necessary to reduce high physical injury incidents rates and workers' compensation claims. "The turnover of correctional staff creates direct costs in recruiting, testing, hiring, and training new workers, as well as the costs involved in overtime payments to existing staff to fill in for missed shifts" (Lambert et al., 2009). The intent of recruiting quality staff is paramount, and should be based on the mission and values of an organisation, and the new recruits should meet the requirements of providing change opportunities to inmates (Pollock, Hogan, Lambert, Ross, & Sundt, 2012). Employment as a PO in most corrective services institutions, including the DCS in Western Australia, demands people to meet three broad criteria based assessments; these include assessment of their psychological profile, personal education levels and physical fitness to perform their duties. Furthermore, training to manage complex and unpredictable prison scenarios and dealing with high risk prisoners is deemed essential and hired staff are expected to provide a safe, secure, and humane environment and not use punitive actions in managing prisoners (Department of Corrective Services, 2011; Pollock, et al., 2012; Poole & Regoli, 1980). The orientation of these three attributes (psychological profile, personal education levels and physical fitness) are perceived to influence PO attitude outcomes towards these high risk tasks both during training and on the job. DCS regard literacy levels of officers as a good selection criteria for the job as increased literacy should enable POs to relate better in the core belief of corrective services, which is the rehabilitation of offenders (Robinson, et al., 1997; Rogers, 1991). Newly recruited POs, frequently suffer physical injuries during their initial training, leaving them feeling uneasy about carrying out their day to day duties after training, which increases their risks of suffering further physical injuries or other associated health risks during their work processes (Mahoney, 2005; Reason, 1990). In recruiting POs

Lambert, Hogan & Barton (2002) suggested that correctional services managers should concentrate on improving workplace environments rather than concentrating on personal characteristics of recruits.

2.2 The Prison Officer Job

The roles of POs are critical in the management of prison activities that include commitment to the restorative justice and rehabilitation of prisoners to reduce re-offending. The prison job is harsh, tough, demanding and highly stressful, whilst POs are fully responsible for supervising unwilling and potentially violent and non compliant prisoners (Armstrong & Griffin, 2004; Lambert, et al., 2009). There appears to be a lack of research investigating physical injuries sustained by POs in a prison environment, including the extended impacts on POs in the prison setting and at home (Liebling, Price & Schefer, 2011; Sparks, Bottoms, & Hay 1996). According to Sparks et al., (1996) POs engage in difficult and complex situations in a prison environment frequently using social skills of refinement without realising that they have done so. POs regularly face complicated situations that expose them to physical injuries in the process of maintaining order, restoring relationships and keeping two way communication open at all times between prisoners and staff in a prison. POs like other law enforcement agents are exposed to numerous occupational risks that include physical harm, psychological stress and a heavy workload that involves shift work (Zimmerman, 2012). Research shows that POs frequently experience long standing periods of discontent that result in frustrations about the job. Furthermore they experience poor status in society and are often frustrated by prison management issues and continuous policy changes (Crawley, 2006). Prison responsibilities take a toll on POs in terms of time and energy, whilst generally not putting them in power positions. POs work under pressure and are constantly at risk of serious physical and psychological exhaustion (Crawley, 2006; King & McDermott, 1990; Roy, Novak, & Miksaj-Todorovic, 2010; Sparks, et al., 1996; Woolf & Tumim, 1991). As in most correctional services, POs in WA operate under harsh conditions that generate somatic, physiological and psychological distress (Bierie, 2010). To date, a considerable body of research has been directed at investigating the effects of prison work, however, not much has been done to investigate physical injuries sustained by POs as a professional group and, how it impacts on them in terms of job satisfaction, job stress, attitudes and behaviours (Lambert et al., 2007; Shefer, 2010). There is limited evidence in literature on issues relating to the causes of physical injuries to POs and most of the studies are dated. This thesis focussed on causes and effects of physical injuries sustained by POs in the execution of their regular duties.

POs are generally perceived as front line staff who manage inappropriate prisoner behaviour and prevent prisoners from escaping (Kellar & Wang, 2005); (Garcia, 2008). In this control process a numbers of techniques are used to deal with prisoners such as individual confinement, reduced privileges and the use of force to maintain the status quo (Farkas, 1999; Garcia, 2008; Kifer, Hemmens, & Stohr, 2003). Prison work is a skilled job that involves complex quick judgement, excellent interpersonal skills and the capacity to perform under pressure. This critical role is vital in successful management of prisons (Liebling, et al., 2011). Studies indicate that the staff - prisoner relationship creates interactions that reduce aggression in prisons (Light, 1991). Prisons in WA are institutions that provide rehabilitation services, and are meant to be safe and secure environments for prisoners, and they contribute to community safety as well as reducing re-offending (Department of Corrective Services, 2010a). Procedural justice supports the notion of treatment and rehabilitation as it utilises various incentives to model behaviour (Lambert, Hogan, & Barton-Bellessa, 2011). The custodial function is coupled with role problems and conflicting expectations and thus increasing stress and physical injuries (Stalgaitis, Meyers, & Krisak, 1982). The officers endure intrusive noise clutter that may not be pleasant, and studies have shown that the situation generates stress or workload pressure that exposes them to physical injuries, high absenteeism rates, sick leave and/or substance use (Gareis & Barnett, 2002; Haney, 2008).

POs experience job insecurity, through engaging in high risk prison activities, which exposes them to physical injuries. Studies show that job insecurity relates to various somatic complaints (Greenhalgh & Rosenblatt, 1984), physiological symptoms (Taylor, Repetti, & Seeman, 1997) and, dislike of the job which compromises their health and well being (Demerouti, Bakker, Nachreiner, & Schaufeli, 2001). The complex prison environments present problems for the correctional institutions managers in retaining the required compliment of staff necessary to "maintain a state of constant alertness geared to the possibility of trouble in which the initiative rests with the inmates" (Griffin & Hepburn, 2005; Poole & Regoli, 1980). Literature suggests that less of an emphasis has been placed on the keepers who are greatly impacted by the prison conditions as compared to numerous debates or academic work conducted on inmates. Research shows that the negative impacts of PO work extend beyond the individual also impacting their family life (Bierie, 2010). These harsh conditions influence POs to change their life styles as a coping strategy, frequently manifesting in increased smoking and drinking, Furthermore studies have reported that officers often develop psychological, social and physical problems during these phases (Bierie, 2010). Research also indicates that the high work load experienced by POs contributes

to an increased incidence of strains (Schaufeli & Peeters, 2000). Prison Officers who are employed in under staffed prison environments carry out numerous tasks within a short period of time which causes fatigue; this in turn promotes absenteeism and exposes them to an increased risk of sustaining physical injuries. Overtime and strenuous demands of the job adds an additional burden to the remaining staff and this impacts negatively on the POs (Schaufeli & Peeters, 2000). An Australian study found that the high job demands on POs resulted in officers developing job dissatisfaction, accompanied by physical health problems, due to the lack of social systems support (Dollard & Winefield, 1998). The working conditions of POs in high risk prisons can result in serious or even fatal physical injuries and consequently these workers have high workers' compensation claim rates (Schaufeli & Peeters, 2000).

In prison environments, POs are faced with role conflicts, defined as the concurrent occurrence of different sets of pressures on an individual and thereafter it impacts behaviour (Bolman & Deal, 2008). Inherent tensions in prisons demand certain expectations and that exerts pressure on POs and leads to feelings of failure and uselessness (Shamir & Drory, 1982). Researches in Israel and the US reported that the POs role load exceeds the job description and includes inadequate time, resources and capabilities to accomplish defined tasks (Rainey, 2003; Shamir & Drory, 1982). POs are in daily contact with people that have records of violence and this creates danger and fear of physical injuries at work as well as danger to his/her property and family while off duty. Research in Israel reported a bomb was planted in a prison director's apartment by a prisoner's companion (Klofas & Toch, 1982; Shamir & Drory, 1982). The fear of danger in the lives of POs may lead to aggressive behaviours amongst colleagues, the prisoners and their families. Lack of support structures results in unhealthy working conditions that result in greater consequences to POs and prisoners (Garcia, 2008).

2.3 Health and Physical Fitness

Physical inactivity has significant negative health consequences and it accounts for 7% of the total burden of injury and disease amongst all Australians (Begg, Vos, Barker, Stanley, & Lopez, 2008). Studies have indicated that increased fitness improves the state of health of individuals (Plante, Coscarelli, & Ford, 2001). Physical fitness has contributed to positive organisational outcomes that reduce costs from absenteeism, physical injuries and psychological effects (Kornitzer & Kittel, 1986; Lubonovich, 2002). DCS like many employers engage adults in its work force. Research has demonstrated that a relatively small proportion of adults maintain their fitness levels, which is necessary for both the physiological and psychological well being of an individual and is also a factor associated with reduced workplace injuries

(Proper, Staal, Hildebrandt, Van Der Beek, & Van Mechelen, 2002). To improve health and fitness initiatives some workplaces adopted the Australian Health Initiative of having workplace programs which include physical activities (Australian Institute of Health, 2010). Physical activity is referred to as planned exercise that creates energy expenditure through musculoskeletal movement (Fletcher et al., 1996). Physical activity is associated with fitness and would help POs meet their physical job demands without becoming fatigued.

2.4 Experience and Age

Research has demonstrated that the experience gained by being employed as a PO helps employees to better cope with hazardous situations, however, personal characteristics, such as age and tenure, have significant associations with turnover intent in high risk jobs due to the elevated threat of physical injuries and job stress (Kasl, 1981; Lambert, 2006). Studies relating to years of experience on the job and age have shown different results in relation to job satisfaction and work related injuries. POs with less than five years and more than ten years experience have high injury rates (Hogan, et al., 2006; Zhao, 2009). Relatively younger officers adjust to custodial environments better than older officers (Klofas & Toch, 1982). However, some studies identified that older officers' attitudes towards prisoners are more favourable. Experience helps them to assess complex situations and they tend to develop good coping and managing skills. They are less punitive than the younger officers and more committed to the support of the core role of corrections services, which includes counselling and rehabilitating prisoners (Cullen et al., 1989; Jacobs & Kraft, 1978; Jurik, Halemba, Musheno, & Boyle, 1987; Klofas & Toch, 1982). Research indicated older officers and those with higher education level reported feelings of personal achievement as compared to the less educated, less experienced and those with more job responsibilities who reported psychological stress effects (Shamir & Drory, 1982). Other researchers also found that older officers with more experience and authority adapt and analyse situations easily, thereby reducing chances of injury with less stress (Armstrong & Griffin, 2004). Young Officers and those with less experience reported higher levels of job satisfaction; however, they also had higher injury rates (Rogers, 1991).

2.5 Shift Work / Working Hours

Evidence from research on unspecified shift work shows that an "average risk for injury is 36% higher on the last night of a four consecutive-nights shift. Risk increases incrementally for each consecutive night on the job, thus the risk is elevated by 6 % on the second night, 17 % on the third night and 36 % on the fourth night" (Brogmus & Maynard, 2006). Organisations generally utilise shift work in an attempt to

increase their profits but in reality the costs in terms of increased injury rates can outweigh the financial benefits in workers' compensation, staff turnover, absenteeism and placing an additional burden on the remaining staff (Brogmus & Maynard, 2006; Brogmus & Maynard, 2006).

Studies of the impact of shift work on POs in the United States attested to the fact that long working hours in correctional services create high stress levels, which results in job dissatisfaction, physical illnesses, burnout or family problems, with POs failing to perform their roles properly and efficiently (Moon & Maxwell, 2004). It has also been shown, amongst POs that night shift and high work activity levels are significantly associated with injury risk, due to fatigue, working erratic hours and insufficient sleep (Violanti et al., 2012). Additionally it was reported that high staff turnover results in instability amongst correctional services establishments and the remaining workers end up doing extra and longer shifts, which in turn threatens safety and reduces the quality of services in prisons. Furthermore, employers have to bear increasing costs associated with the need to pay overtime rates and higher insurance premiums (Lambert et al., 2009).

Jobs in prisons are known to be associated with high stress levels due to the unique nature of the work and at times this creates family - job conflict. The job demands on PO time and energy impacts negatively on family quality time and POs remain out of phase with the rest of community life styles (Shamir & Drory, 1982). There is an increase in aggression and a decline in performance amongst POs, and this is largely attributed to long working hours. The 12 hour shift system commonly used by organisations such as the prisons also impact negatively on staff physical training, maintenance of physical training and staff development, as employees fail to undertake refresher courses; this also impacts negatively on workforce health and safety. Another issue brought about by long working hours is the inability of the DCS to attract and retain staff, particularly in key senior positions and this in turn has an impact on organisational performance (Mahoney, 2005).

2.6 Physical Injuries

Increased lost time injuries rates are commonly experienced in high risk jobs including POs, Police, Security Guards, Fire Service Personnel, Health Care Workers and Social Security Workers. The impacts of physical injuries disrupt the normal work routines in a prison setting, thus putting other workers at risk. The prison's environment creates fear and insecurity amongst POs (Kratcoski, 1988). Furthermore, workers in high risk jobs in the United States, the United Kingdom and Australia often sustain injuries which are client initiated (Fisher & Gunnison, 2001). A number of researches

have focussed on incidents between prisoners while a few have investigated prisoner aggression towards their keepers (Kratcoski, 1988). To date there is a lack of research examining the perceived dangers, causes, nature and impact of physical injuries to POs. Perceived job related dangers have contributed to high prison staff turnover and continuous absenteeism of POs from front line high risk prison activities (Garcia, 2008).

The POs job, not unlike that of police and security guards, is known as being a potentially dangerous profession, subject to job stress and physical harm (Cullen, et al., 1989; Garcia, 2008). POs experience unexpected attacks during the course of duty by prisoners who may be expressing their emotional energy (Light, 1991). Studies show that some assaults, which depress officers, include use of trivial weapons, such as urine, faeces, food, needles and water (Light, 1991 and Stephan, 2008). Surprisingly, prisoners with shorter prison sentences are frequently involved in these violent misconducts that traumatise POs and this is contrary to the existing theory of inmate misconduct, where the thought would be that long term or capital prisoners would not lose anything even if they are involved in violence (Morris, Longmire, Buffington-Vollum, & Vollum, 2010; Sorensen, Cunningham, Vigen & Woods, 2011). Prison Officers are also frequently exposed to prisoners with a history of mental illness or those under psychiatric treatment, which increases the risks of assault. The POs training curriculum generally does not include mental health training and POs are not equipped with the skills necessary to manage inmates with mental health issues (Light, 1991).

Prison Officers employed in correctional institutions that manage high numbers of short term prisoners and remand offenders tend to suffer physical injuries more frequently than those employed in facilities that house long term, incarcerated prisoners, as these facilities generally demand and enforce higher levels of discipline among inmates (Casey-Acevedo & Bakken, 2001; Dowden & Tellier, 2004; Garcia, 2008). Furthermore it has been shown that remand prisons, prisons with younger populations have higher inmate misconduct prevalence rates which include assault of front line staff. It is difficult to provide adequate constant control of prisoners in overcrowded facilities and POs working in such institutions frequently report perceived physical injuries danger. POs are also faced with role conflict and role difficulties which are compounded by prison procedures and local orders they have to follow (Dowden & Tellier, 2004). According to the USA prisons census (2002), there were 18 000 cases of prisoner on staff assaults. In the 2001 census, 5 staff had died as a result of assaults (Stephan, 2008). POs are faced with a variety of difficult situations that pose risks to their physical and mental health on the job (Dowden & Tellier, 2004). This thesis

will analyse the DCS injury data to determine how many POs sustained and reported injuries between 2008 and 2010 in WA.

Research in the USA has also identified that 2,5% (259) of POs sustained needle stick injuries in 1992 – 1993, as compared to 0.9% of Police Officers. The POs job involves cursory body search and patdown practices that expose them to these risks (Averhoff et al., 2002). Studies show that searches which involve touching, may be viewed to carry an overtone of authority in an institution such as prison and creates conflict between officers and inmates and may be regarded to convey a feeling of ritual effluence (Light, 1991). A USA based study reported that a sheriff acquired hepatitis C in the process of stopping a fight between prisoners as blood splashed in his eyes (Larney & Dolan, 2008), while in New South Wales (Australia) a PO died from an HIV related infection after an assault by a prisoner with a syringe filled with blood (Egger & Heilpern, 1991).

Physical injuries from violent and aggressive clients such as prisoners, are situational and can be very serious, often leading to lost time injuries by POs (Mayhew, 2000). Furthermore, POs are at risk of sustaining occupational back, neck, or joint injuries when restraining prisoners due to bending and improper lifting of prisoners (Western Australia. Office of the Inspector of Custodial Services, 2005). Sprains, strains and dislocations have been found to be one of the major categories of injuries processed by the DCS (Western Australia. Office of the Inspector of Custodial Services, 2005). During the process of managing high musters, POs also experience assaults from prisoners, these attacks are generally spontaneous and unpredictable and occur during routine prison activities. These types of assaults on POs on the job are virtually unavoidable and leave POs vulnerable with diminished coping strategies. Prisoners at most times describe the assault on officers as unintentional, but accidental, and this becomes a dilemma faced by POs (Light, 1991). This study will investigate the causes and effects of the physical injuries to WA POs.

2.7 Workers Compensation Claims and Lost Time Injuries (LTIs)

Work related physical injuries and other health related issues result in organisations incurring high workers compensation claims (Mahoney, 2005). “The persistence of occupationally – induced morbidity and mortality continues to prevent a substantial reduction in aggregate workers’ compensation costs; and the high cost of the insurance program expends resources which might have been applied elsewhere” (Spieler, 1994). However, the DCS workers’ compensation performance 2008-2009 report indicated that active claims reduced from (N=353) in March to (N=308) in December 2008. DCS had an average of 33 new claims each month, as well as 93 to

96 active, ongoing, long term claims during the same period. Over this period, there were a total of 465 finalised and settled claims (DCS Employee Welfares Services, 2010). Studies of physical injuries resulting in lost time have shown that affected workers also tend to suffer emotional injuries, including depression, post traumatic stress disorder and excessive chronic pains. Depression can cause additional harm by impacting on an individual's social life and his/her ability to function properly, resulting in further workplace risks. According to the directed review of the management of offenders in custody and in the community, POs lodged approximately 250 claims annually for the past 5 years (Dennis Mahoney, 2005; Western Australia. Office of the Inspector of Custodial Services, 2005). This accumulation of health issues results in the gradual onset of burnout and stress, which in turn leads to multiple incidents, such as physical injuries that could even result in staff being permanently unfit for work. Lack of employer support and work harassment by supervisors bring in managerial consequences to the quality of services and also influence workers compensation claims (Mahoney, 2005). Injury related data for the DCS for the period of 2000 to 2008 indicated the following stress claims from POs:

Table 2.1: Stress claims

Non compensable issues	15%
Prison suicides	40%
Prison assaults	10%
Burnout	13%
Management issues	20%
Industrial injuries	5%

Source: DCS (2003)

The data above (Table 2.1) shows POs are at high risk of sustaining workplace injuries, when under stress (Kendall, Murphy, O'Neill, & Bursnall, 2000; Kiekbusch, et al., 2003; Mahoney, 2005)

The DCS 2009/2010 annual report (Table 2.2) showed an increase in workers compensation claims, with lost time claims showing a significant rise in the same period.

Table 2.2: Workers' compensation data 2008/2009

	2008/2009	2009/2010
No. of workers' compensation claims	307	408
Lost – time frequency rate	22 days	28, days
Incident rate	5,2 days	5,65 days
Total working days lost	9,492.6	4,778.0
Lost time claims	191	257
No. of stress claims	43	64

Source: DCS (2010b)

This study will examine the impact of the injuries on POs and the DCS.

2.8 Aging Workforce

The global phenomenon of an aging population presents challenges to employers. Australia also has an aging workforce and older workers are more prone to contracting workplace injuries (Department of Health, 2008). Prisons are high activity areas, thus the impact of the aging workforce is of particular concern to the DCS. Studies have shown that high risk jobs result in work stress that leads to job dissatisfaction, poor productivity and plans of early retirement, thus removing important intellectual capital (older workers) from the workplace. Some studies indicate that younger employees view old workers as blocking their career path opportunities by not retiring early (Rappaport, Bancroft, & Okum, 2003). In DCS the mean age of POs engaged under the Gaol award in 2004 was 47 years. During the same period 42% of POs in management were over 50 years of age. The presence of this aging workforce presents challenges to the DCS management (Gershon, Lin, & Li, 2002; Mahoney, 2005; Western Australia. Office of the Inspector of Custodial Services, 2005). Research has shown that physical function and strength declines with age and it affects work related tasks and result in particular strains on the musculoskeletal or cardiovascular systems. Studies on work performance indicated that there are inconsistencies between age and performance, others showed that performance is enhanced with advancing age, whilst others disputed this finding (Westerholm & Kilbom, 1997 and Gershon, Lin, & Li, 2002). This thesis will explore the impact of injuries in relation to the aging workforce.

2.9 Conclusions drawn from the literature

This literature review identifies some of the possible factors that contribute to physical injuries sustained by POs working in high risk occupations. It emphasises the need for proper screening for new candidates and the performance of risk

assessments to help identify health and safety risks associated with the job. This research, which aims at understanding the factors that contribute to increased injuries among WA POs, will use both quantitative and qualitative methods to explore the research hypotheses.

CHAPTER THREE

METHODOLOGY

3.1 Study design

This research employed a questionnaire survey design which was administered to a sample cohort of 146 POs from the study population, consisting of POs who work in WA metropolitan prisons. Data obtained from the DCS physical injuries database which included lost time and workers' compensation claims for POs from 2008 to 2010 were also analysed. Managers were asked questions regarding causes and effects of physical injuries to DCS staff. The variables assessed included: age group, work experience, mechanism of injury by agency, and nature and impact on individuals and the organisation. Data were analysed to test the research hypothesis.

3.2 Subject selection

3.2.1 Selection of the study reference population

The study population consisted of a cohort drawn from 978 POs in DCS managed prisons. Regional prisons were excluded due to travel costs and Acacia Prison, which is the only privately run prison, was also excluded from this study since it operates under its own Occupational Health and Safety Management Systems (OHSMS). The study cohort consisted of a sample drawn from duty rosters that were supplied by the six metropolitan prisons over a six weeks duty roster system.

3.2.2 Sample size

A systematic sampling technique was used to select POs from the prisons. To reduce potential barriers to participation, the Workplace Occupational Safety and Health Committees (WOSHC) promoted the research to its members. The GPower computer software program was used to calculate sample size. A prior analysis of a Chi-square test using a medium effect size of 0.3, α of 0.05, power of 0.95 and degrees of freedom (Df) 1 with a Chi square of 3.8415 and Lambda of 13.0500 generated the study sample of 146.

All physical injuries accident/incidents for POs reported to the Occupational Safety and Health Section of the DCS as well as workers' compensation claims, which were processed between 2008 and 2010, were analysed.

3.3 Data Collection

A questionnaire developed by Payne (1979) and information on measurement of occupational health and safety performance from Standards Australia (Standards

Australia., 1990) were adapted for the purpose of this study. The instrument gathered demographic information from the target group that had an impact on injury risk level. The following variables: age, group, work experience, mechanism of injury by agency, nature and impact on individual and organisation were measured.

The section of the questionnaire that related to job conditions was rated on a five point scale e.g. very rarely to very often. Life style indices such as physical health and fitness and the organisation's commitment to its occupational health and safety management system, were some of the dependent variables assessed utilising (yes/no) responses. The questions in this section explored processes and procedures that had been put in place to reduce job related risks to reasonably practicable levels. The effectiveness of risk assessment processes that include the involvement of POs was also assessed. A test – retest reliability for the instrument was conducted using DCS staff who work in the prisons and POs in two prisons which were outside the study cohort.

3.4 Data Analysis

Data obtained from a questionnaire survey administered to a sample cohort group was entered into Predictive Analytic Software (PASW 18) version 18 for analysis. Descriptive statistics were used to identify variables of interest. Incident rates, frequency rates and time lost rates were calculated from data of injuries already in the DCS database. Chi square tests were used to evaluate associations between several variables including age group, health status, mechanism of injury by agent and nature, impact on individual and organisation (DCS) and work related injuries.

3.5 Ethics approval

The research design was discussed with the West Australian POs Union (WAPOU) and approved by the DCS Research and Evaluation Committee (REC) and ECU Ethics Committee before commencement of the study. Introductory letters and consent forms were emailed to the study participants before distributing the questionnaires.

CHAPTER 4

RESULTS

The analysis of research results are presented in Figures 4.1 to 4.4 and Tables 4.1 through to 4.16. The figures and tables describe results from the three groups of the study; study cohort data n=146, DCS injury data (2008/2010) n=914 and Prisons Managers and Employee Welfare Services staff data n=109.

4.1. Study cohort data

4.1.1 Population characteristics

A questionnaire was applied to a representative sample of POs who work on the prison floor (n=146).

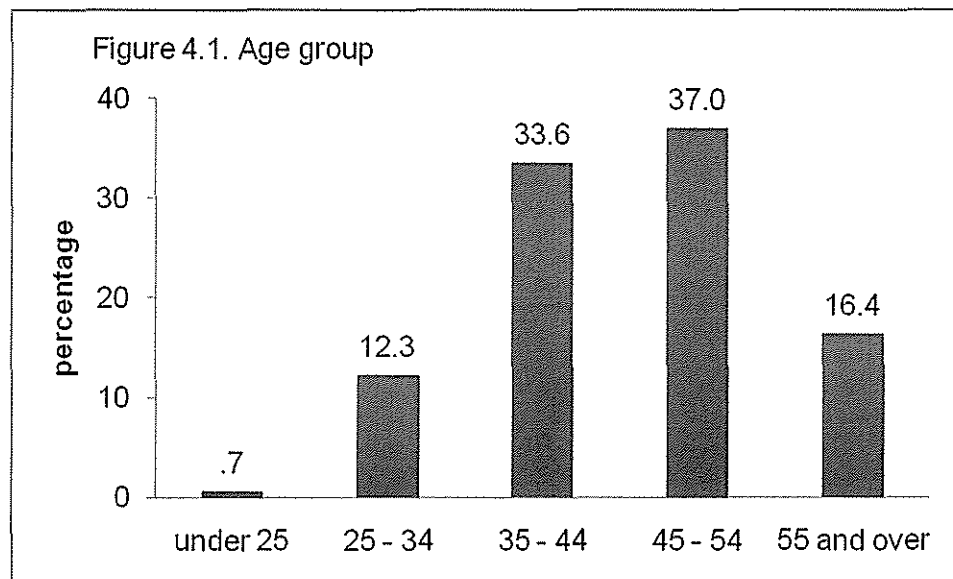


Figure 4.1 Age distribution for sample group

Figure 4.1 shows the age distribution of the prison officer population, 37% of this cohort was aged between 45 – 54 years.

4.1.2 Education level for current Prison Officers

Regarding highest level of education, Table 4.1 shows that 32.9% of POs had completed 4 – 5 years of high school and 34.9% had completed TAFE or technical college education.

Table 4.1 Highest level of education

<u>Level of education</u>	<u>Percentage (%)</u>
Completed 1-3 years of High School	13.0
Completed 4-5 years of High School	32.9
TAFE/Technical college	34.9
Tertiary qualifications	19.2

4.1.3 Current employment status from sample

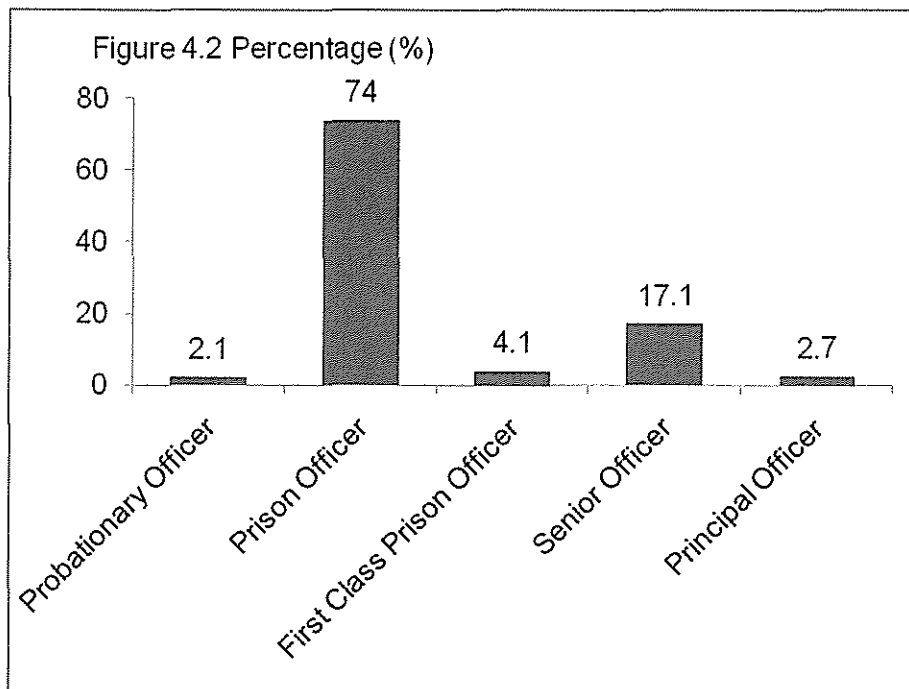


Figure 4.2 Current employment status from sample group

The histogram in Figure 4.2 illustrates current employment status of POs by ranks. The sample consisted mainly of POs (n=108, 74%) which is a fair representation of the organisational structure. There is an association between employment status and work related physical injuries in the last two years, $F(10.428) = 4, p = 0.034$.

4.1.4 Years of experience

Years of experience on the job was investigated and table 4.2 shows 4.1% of the participants had less than 1 year experience and over a third had more than 10 years experience.

Table 4.2 Years of experience of POs

<u>Years of experience</u>	<u>Percentage %</u>
Less than 1 year	4.1
1-2 years	20.5
3-5 years	18.5
6-10 years	23.3
More than 10 years	33.6

4.1.5 Period on the job before the first injury

Table 4.3 shows that 58.4% of injuries occurred to POs within the first 2 years of employment and 7.9% after more than 10 years employment

Table 4.3 Period in the job before the first injury

<u>Period in the job before the first injury</u>	<u>Percentage %</u>
Less than 1 year	16.8
1 – 2 years	41.6
3 – 5 years	22.8
6 – 10 years	10.9
More than 10 years	7.9

4.1.6 Work related physical injuries

Table 4.4 shows responses on whether POs sustained injuries or no injuries in the last 2 years. 69.2 % of the POs had been injured over the last 2 years.

Table 4.4 Work related physical injuries in the last two years

<u>Work related injuries</u>	<u>Percentage %</u>
No Injury	30.8
Injury	69.2

4.1.7 High risk prison activities and sustaining physical injuries

Table 4.5 shows the incidence rate per 100 officers sustaining physical injuries per year was 69.2%.

**Table 4.5 Engaging in high risk prison activities and sustaining physical injuries:
Cohort study of 146 POs**

	<u>Sustain physical injuries</u>	<u>Do not sustain physical injuries</u>	<u>Incidence per 100 per year</u>
Engage in high risk prison activities	101	45	69.2

4.1.8 Causes of injuries

Table 4.6 illustrates that the major causes of physical injuries to POs were attributed to Slips, trips and falls (falls on the same level (23.2%) and sharps injuries made up 2.7% of the total).

Table 4.6 Causes of injuries to sample group

<u>Cause of injuries from sample</u>	<u>Percentage %</u>
Hitting object with part of body	21.8
Slips, trips and falls	23.2
Assault	11.5
Restraint	11.7
Muscular stress	5.5
Machinery	5.1
Conducting training	5.0
Sharps and needle stick	2.7
Electrical	0.7
More than one cause	12.8

4.1.9 Nature of injuries

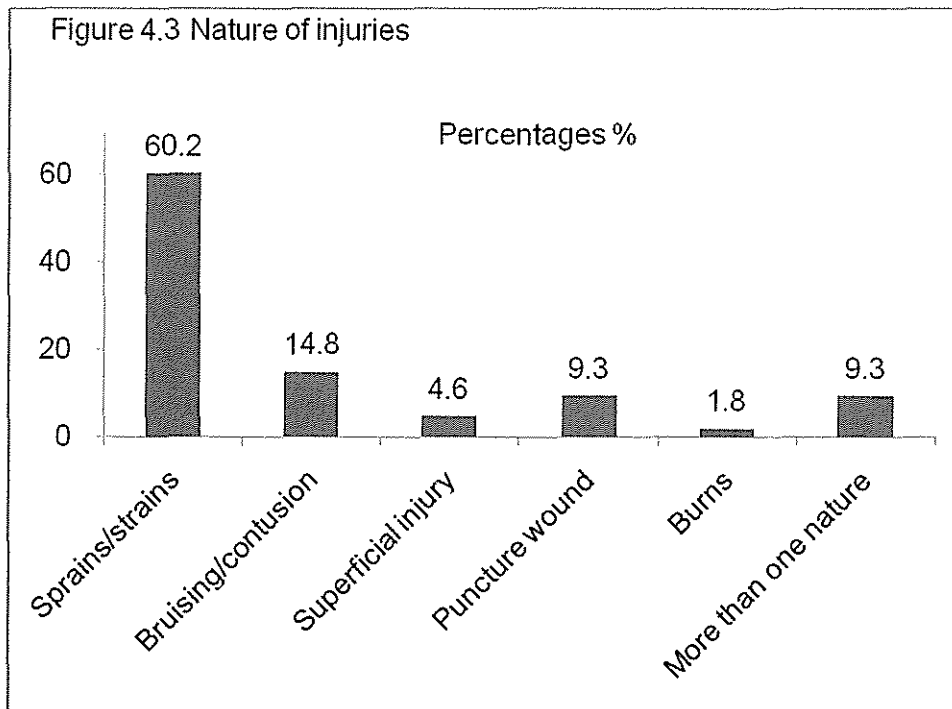


Figure 4.3 Nature of injuries

Figure 4.3 shows a histogram for nature of injuries sustained by POs, (60.2% were classified as sprains and strains).

4.1.10 Potential risk factors for physical injury in a prison environment

4.1.10.1 Body Mass Index (BMI)

The Body Mass Index (BMI) for the POs was calculated from data provided on the questionnaire using the National Institute of Health (NIH) - BMI calculator. Table 4.7 shows that 23.3% of POs had normal body weight; while 74% were overweight or obese. BMI was significantly associated with injury ($p = 0.087$) as assessed using a Chi square analysis.

Table 4.7 BMI Ranges

<u>BMI</u>	<u>Frequency</u>	<u>Percentage (%)</u>
below 18.5 Underweight	4	2.7
18.5-24.9 Normal	34	23.3
25 - 29.9 Overweight	48	32.9
30 + Obese	60	41.1

4.1.10.2 Other risk factors

Results for other health and fitness factors explored shows that self assessed state of health of the POs was “average” for 37.0% of respondents, while 15.1% of the POs assessed themselves as being unfit. Gymnasium access was available, however no qualified physical trainers were provided by the employer as reported by 70.5 % of the sample group and there was no association between physical injury and health status ($p = 0.296$).

The reasons for visiting doctors were surveyed and 72.9% of respondents reported seeking medical treatment for one, or a number of persistent work related injuries. Twenty seven percent sought medical treatment for issues not related to work. There was no relationship between visits to the doctors and work related injuries ($p = 0.561$). Several other potential risk factors inherent in prison environments that included job demands, support and constraints were all found to be none significant.

4.1.11 Effects of work related physical injuries

The study on effects of work related physical injuries included the treatment given to POs after an injury, period of time off work and general effects.

4.1.11.1 Treatment

Table 4.8 shows the effects of work related injuries in terms of treatment regimes. Forty nine percent of the injured POs received first aid treatment and (3.9%) were hospitalized.

Table 4.8 Treatment given to POs after an injury

<u>Treatment</u>	<u>Percentage (%)</u>
First aid treatment	49.0
Medical treatment	34.6
Hospitalization	3.9
No treatment	10.6
More than one	1.9

4.1.11.2 Time off work

Table 4.9 shows physical injuries sustained in the workplace that resulted in lost time, 35.9% of injured POs lost more than three shifts.

Table 4.9 Time off due to work related physical injuries

<u>Time off</u>	<u>Percentage (%)</u>
One shift only	30.1
One to three shifts	34.0
More than three shifts	35.9

4.1.11.3 General ill health effects subsequent to sustaining a work related injury

Table 4.10 shows general additional ill health effects experienced by individual POs following an injury at work including loss of confidence on the job and developing low morale 16.5 % and family unrest 4.9%. However 32.0% reported that injury had no effect to them.

Table 4.10 General effects

<u>General Effects</u>	<u>Percentage (%)</u>
Family unrest	4.9
Low morale	16.5
Fear of further injury	17.5
No effect	32.0
Loss of confidence	16.5
More than one	12.6

4.2 Department of Corrective Services data (DCS data)

4.2.1 Reported titles for uniformed officers who sustained injuries in 2008 – 2010

Table 4.11 shows that 86.3% of the physical injuries recorded by the DCS were reported by POs, with other ranks making up the balance.

Table 4.11 Reported title for those who sustained injuries between 2008 -2010

<u>Reported title</u>	<u>Percentage %</u>
Superintendent	0.2
Asst Superintendent	0.3
Principal Officer	0.1
Senior Officer	10.6
First Class Prison Officer	1.8
Prison Officer	86.3
Probationary Prison Officer	0.7

4. 2.2 Causes of injuries according to DCS injury database

Table 4.12 shows the major causes of injuries as slips, trips and falls 25.7% and also the risk of sharps and needle stick injuries, which was reported as 1.6%.

Table 4.12 Causes of injuries according to DCS injury database

<u>Cause of injuries from sample</u>	<u>Percentage %</u>
Hitting object with part of body	22.7
Slips, trip and falls	25.7
Assault	12.3
Restraint	11.3
Muscular stress	3.3
Machinery	7.5
Conducting training	3.5
Sharps and needle stick	1.6
Electrical	0.2
More than one cause	11.9

4.2.3 Nature of injuries

Table 4.13 shows the nature of injuries from the DCS database with the majority (53.9%) of POs sustained sprains and strains and 0.9% sustained fracture of the bones.

Table 4.13 Nature of injuries from DCS database

<u>Injury Nature</u>	<u>Percentage (%)</u>
Sprains and strains	53.9
Bruising	18.3
Superficial injury	10.3
Puncture wound	2.7
Open Wound	3.6
stress psycho	1.0
Poisoning -chem.	0.7
Stress Physical	0.4
Fracture -bones	0.9
Burns	0.2
Foreign object	1.0
Concussion	1.0

4.2.4 Workers' Compensation claims from DCS database

Table 4.14 shows that 39.1% of POs who were injured claimed workers' compensation.

Table 4.14 Claim Flag

<u>Claim Flag</u>	<u>Percentage %</u>
Claimed	39.1
Not claimed	60.9

4.2.4 Claims by age

Table 4.15 shows that 41.5% of POs aged 45-54 years had worker' compensation claims over the last two years. In the age group of 55 years and above, 29.9% had submitted claims. The younger age group had a relatively low percentage of claims 7.7% in the same period. The DCS staff actual data base shows the age range for POs employed by DCS as 21 years to 71 years.

Table 4.15 Claims by age group

<u>Claims by age group</u>	<u>% Claimed</u>
Under 25 years	.00
25-34 years	7.7
35-44 years	21.0
45-54 years	41.5
55 + years	29.8

4.3 Management and employee welfare services staff questionnaire survey

4.3.1 Causes of injury

Figure 4.4 shows a histogram for managers and employee welfare services staff views on causes of injuries. The majority attributed work related injuries to prisoner aggression/assault 75.0%, slips, trips and falls 57.1%.

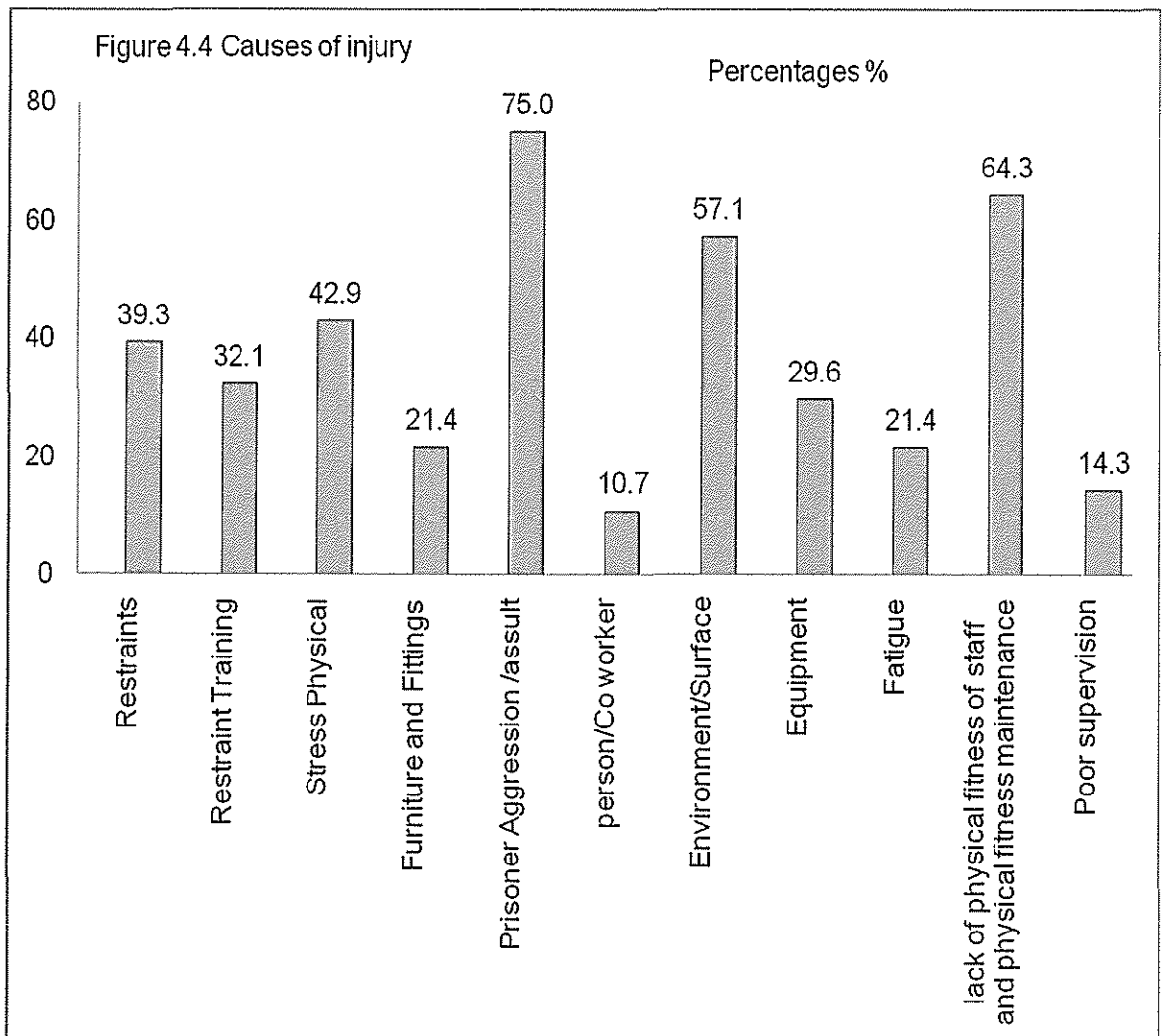


Figure 4.4 Causes of injury

4.3.2 Causes of injury

Table 4.16 shows reflections from Managers and Employee Welfare Services staff which indicated that DCS incurred high workers' compensation claims 21.1 %. Other striking effects were absenteeism 12.7% and lost time 17.4%.

Table 4.16 Effects on DCS as viewed by managers and employee welfare services staff

<u>Effects of injuries on DCS</u>	<u>Effects as viewed by managers</u> <u>N=109</u>
	<u>Percentage (%)</u>
Lost time (LTIs)	17.4
Loss of experienced workers	10.1
Too much workload for remaining staff	8.2
Work disruptions	5.3
Too much work for workers compensation staff	8.0
Failure to find suitable work for injured worker	4.0
High workers' compensation claims	21.1
Staff turnover	3.1
Low morale	10.1
Absenteeism	12.7

CHAPTER 5

DISCUSSION

The results of this study confirm that slips, trips and falls on the same level, hitting objects with part of the body, assaults and / or prisoner aggression, restraining prisoners, sharps and needle stick injuries are the major causes of physical injuries to POs in WA prisons. The effects of physical injuries to DCS staff are reflected in high workers compensation claims, lost time (LTIs), loss of experienced workers, high absenteeism rates and low morale amongst POs.

This study had a number of limitations which are presented below;

1. This was the first study in WA to investigate the causes and effects of physical injuries that occur among POs in high risk prison environments and only the second in Australia to explore the physical risks that affect POs on the job, thus making comparisons to previous research very difficult in a local context.
2. Literature on physical injuries of POs is limited and this area of study has not received much attention, which has created limitations in term of previous research to refer to in this study and for comparative analysis.
3. Results obtained from the questionnaire on education level, physical activity and body mass index (BMI) were self reported, and this may have introduced bias which could have influenced the results.

This chapter will discuss the findings of the study based on the data obtained from the cohort group, DCS injury database 2008 – 2010 and views of managers and employee welfare services staff. The chapter concludes by addressing the research hypotheses:

- The prison environment in WA is a potential risk factor for physical injury to POs.
- Several identifiable factors influence the risk of physical injury among POs.
- Physical injuries sustained by POs while on duty impact negatively upon the affected officer, other staff and the Department of Corrective Services (DCS).

5.1 Population Characteristics of POs

One way of understanding high risk occupational issues that affect people in various work areas is to explore population characteristics. This section discusses the findings on the characteristics of POs employed by DCS in WA, exploring their age, current employment status, and years of experience in the job and education level. The

discussion will then outline how each characteristic includes factors that influence the risk or is associated with the causes and effects of physical injuries among this cohort.

Demographic data of the PO study population showed that age ranged from under 25 to over 55 years. DCS injury data, for the period 2008-2010 which is inclusive of all DCS employees, ranged from 21 to 71 years. The age group 45 to over 55 years in the study cohort represents 53.4% of the total, which reflect the fact that DCS has a high percentage of ageing POs. In 2004, the mean age of POs was 47 and 42% of POs in management positions were over 50 years of age. This study shows that the aging trend is now observed amongst the POs on the front line of prison operations. The situation presents some challenges to DCS which has a State-wide role of managing high risk prisoners. The high number of aging POs may increase safety and security risk for POs as well as for prisoners. In the same age range, 71.3% of POs had submitted workers compensation claims over the last two years, which reflects the impact of physical injuries among the aging workforce. This was consistent with published research, which showed that age has an effect on physical strength and power of an individual, and exposes the person to work related strains and the musculoskeletal disorders (Westerholm & Kilbom, 1997). Other studies have shown that high risk jobs, such as prison jobs have some negative impacts on aging workers and result in staff planning early retirement; this in turn contributes to the experienced workers leaving their jobs early, thereby creating a personnel shortage (Gershon et al., 2002; Mahoney, 2005; Western Australia, 2005) Office of the Inspector of Custodial Services, 2005). This phenomenon compliments findings of other studies, which have shown, that age is significantly associated with staff turnover intent in high risk jobs; this is due to the elevated threat of physical injuries and job stress (Kasl, 1981; Lambert, 2006). This study found that POs who engage in controlling violent prison incidents are exposed to physical injury regardless of age group; however, employment status has shown an association with physical injuries.

Findings of this study indicate that there was an association between employment status (job position) and work related physical injuries in the last two years regardless of age category $F(10.428) = 4, p = 0.034$. POs on the front line comprise 74.0% of employment ranks of uniformed prison employees who engage in complex activities that include maintaining order and restoring prisoner- staff relationships. These officers are often exposed to high risk prison activities that could result in physical injuries. Sixty nine percent of the POs in the study cohort sustained physical injuries over the last two years. Data extracted from the DCS injury database showed that 86.3% of POs and 10.6% of Senior Officers (all front line officers) reported physical injuries between 2008 and 2010. This concurs with research findings indicating that

POs operate under harsh conditions that can cause somatic, physiological and psychological distress (Bierie, 2010). The plight of POs is not well publicised and this notion is consistent with findings of a study by (Shefer, 2010) who reported that currently not much research has been done on physical injuries sustained by POs as a professional group.

In this study cohort, the incidence rate per 100 officers sustaining injuries per year was 69.2%, thus demonstrating that high risk prison activities affect POs on the job. This finding was supported by Crawley (2006), as a long standing problem that results in frustration among POs. Punitive ways of dealing with prisoners are not accepted in WA prisons and such practices were replaced by rehabilitation processes and human services which currently has some negative impacts on POs. A study by Stalgaitis (1982), found that POs are affected by role problems and unattainable expectations, which contributes to their risk of sustaining physical injuries and experiencing stress and psychological issues. The argument arises whether the rehabilitation approach is fully covered in the POs training curriculum to help equip them to cope with volatile and unpredictable situations in prisons. The high incidence rates of physical injuries reported in this study is supported by (Gareis & Barnett, 2002) and (Haney, 2008) who reported that officers who engage in front line activities endure work pressures that generate stress and expose them to increased risks of sustaining workplace physical injuries, as well as compromising their health and well being. The magnitude of injuries is reflected in the findings showing that officers on the front line sustain physical injuries irrespective of years of experience on the job. In this study cohort group it was found that 33% of those with more than 10 years experience sustained physical injuries. This may be indicative of the aging factor of POs in service and the reduced endurance capabilities of the aging workforce.

This study also shows that 41.6% of physical injuries are sustained by POs within the first two years on the job. This finding is consistent with those of (Zhao, 2009) and (Mahoney, 2005) who found that injury rates are high among officers with less than five years on the job. The reasons may be that POs will be in their probationary stages of the profession and are still finding ways to cope with the job requirements and demands. Newly recruited POs suffer physical injuries that leave them feeling uneasy about carrying out their day to day prison duties leaving them more vulnerable to assault.

The education level of the cohort group was investigated to determine if there was an association between level of education and physical injuries. The findings indicated that 32.9% of POs had completed 4 – 5 years of high school and 54.1% had

TAFE/Technical College and higher qualifications. The findings of this research show that there is no association between education level and physical injuries in a WA prison environment, as injuries were spread across all education level groups. Amongst the cohort group, 69.2% (101) of POs reported physical injuries in the last two years as front line officers; this finding is contrary to the findings of others (Cullen, et al., 1989; Rogers, 1991; Whitehead & Lindquist, 1989) which indicate that higher education is associated with increased stress and physical injuries.

5.2 High Risk Prison Activities

Prison environments all over the world have numerous high-risk activities which expose POs to physical injuries, and WA prisons are not different in this regard. Stressful work conditions are also associated with psychological stress issues (Bierie, 2010). This study has shown that POs manage diverse prisoner populations, and a number of high-risk activities were identified; these include;

- dealing with violent situations of varying magnitude on a daily basis,
- managing mentally ill prisoners without adequate training,
- handling deaths in custody cases,
- fear of escapes and riots,
- assault / aggressive behaviour amongst prisoners,
- fear of contracting infectious diseases such as AIDS and Hepatitis B.

POs in WA prisons at times deal with deaths in custody, which are associated with an increased prevalence of psychological problems among affected POs, particularly when they remain rostered in the same units where they had the experience. This can be traumatic for POs and psychological problems were reported by POs in spite of the counselling and support services provided by DCS and therefore this poses yet another risk factor that can contribute to physical injuries. Prison escapes and riots are inherent risks encountered in any prison setting, and in this study it was found that POs live in constant fear of such events. The fear of contracting HIV or Hepatitis B infections was also reported frequently although the POs are issued with personal protective equipment and clothing when dealing with prisoners. The risk is difficult to eliminate, there are sudden incidents of assaults in a prison and POs do not move around wearing their personal protective equipment which causes the physical injury risk to increase.

These findings are consistent with those of (Bierie, 2010), who reported that POs work under harsh conditions and are engaged in high risks occupational activities that affect their well being and in some cases extend to their family and community lives. Furthermore, it has been shown that risks to POs come in a variety of forms, where prisoners use weapons such as urine, faeces, food, sharps and water to assault POs (Light, 1991). POs also are frequent victims of assaults during prisoner restraint activities, particularly when retraining prisoners with mental illnesses or a history of violence, and POs generally lack knowledge and skills to adequately manage inmates with mental problems (Light, 1991). This causes concern for the physical and mental well being of POs, who are expected to manage such clients without adequate training and this impacts negatively on the management of prisons at large (Ogloff, et al., 1994). These findings are substantiated in this study where it was found that POs work under pressure and get involved in high risk activities. Furthermore, in WA, the POs feel that they are poorly supported when involved in such high risk activities. The threats of assault and prisoner aggression are reported to be a constant risk, while POs exercise prisoner restraint. Restraining prisoners frequently results in harmful contact with objects, substances, colleagues and prisoners, thus leading to physical injuries.

5.3 The causes of physical injuries among WA Prison Officers

This study investigated self reported work related physical injuries sustained by POs in terms of cause and nature. Recent physical injury data were sourced from the DCS injury database for a 2 year period. Managers and employee welfare staff were also surveyed in order to ascertain their views on the issue.

Data obtained from the self administered questionnaire completed by POs was well correlated with the DCS injury data, which showed that in WA prisons, the major causes of physical injuries to POs are falls on the same level (slips, trips and falls), hitting objects with part of the body, assaults from prisoners, injuries from restraining non compliant prisoners, and sharps and needle stick injuries. The research findings reflect that POs frequently sustain physical injuries from more than one cause mentioned above. Managers and employee welfare services staff report that the major work related physical injuries sustained by POs are attributed to prisoner aggression/assault, and they also concur with the findings from the cohort group and DCS data that slips, trips and falls contribute significantly to the physical injury rate. Additional factors identified by managers include a lack of physical fitness and physical fitness maintenance amongst WA POs, stress, physical restraints and fatigue. The findings of this study are supported by (Mayhew, (2000) in that he reported that physical injuries sustained by POs from violent and aggressive prisoners can be fatal and frequently result in lost time injuries.

Twenty three % of this study cohort sustained physical injuries due to slips, trips and falls. This is consistent with findings from the actual DCS data, that 25.7% of POs had physical injuries from slips, trips and falls in the last two years. Managers and employee welfare services staff concurred with 57.1% reflecting that slips, falls and trips contributes to the high physical injury rates amongst POs.

This study identified an association between employment status and work related injuries in the last two years, $F(10.428) = 4$, $p = 0.034$. All POs who are on the front line, regardless of rank are exposed to physical injuries. Prison managers and employee welfare services staff report that fatigue amongst POs is common due to high action activities that take place daily in a prison environment and this contributes to accidents and injuries such as slips, trips and falls. Long shifts and constant calls of emergency codes that require a quick response expose POs to higher risks of sustaining physical injuries. Crawley (2006) reported that working under pressure and a number of other factors such as perceived status contribute to pressure, frustration and fatigue. Shift work in WA prisons is standardised to three 12 hours shift per week, which theoretically gives POs sufficient time to recuperate between shifts (Mahoney, 2005). However, according to the findings, this also presents a negative impact in that when POs are off duty, they do not get time for training and staff development and this impacts negatively on organisational performance. This finding is supported by a WA Department of Health (2008) study that found that injury is the fourth most common cause of death, hospitalisation and second most common cause of potential years of life lost in WA.

Hitting objects with part of the body is the second highest cause of physical injuries amongst POs in WA. The study shows that pressure from job expectations accompanied by unexpected attacks from prisoners contribute to POs hitting against objects which results in physical injuries. This finding is consistent with that of (Stalgaitis, et al., (1982), who reported that the harsh conditions faced by POs at work results in injuries and stress. At times POs suffer fatal injuries as shown by Stephen (2008) who reported 5 staff assaults related fatalities among POs in the USA. Supporting literature also suggests that POs involved in cursory body search and patdown procedures are exposed to variety of physical injury risks from prisoners (Averhoff, et al., 2002; Cullen, et al., 1989; Garcia, 2008; Light, 1991).

This study shows that the process of restraining non compliant prisoners results in physical injuries, a finding which is supported by Mayhew, (2000) who regarded the procedures for dealing with non-compliant prisoners as risky. In addition to injuries associated with slips trips and falls, POs frequently sustain back, neck and joint

injuries, often as a result of improper lifting. In 2005 the Western Australian office of the Inspector of Custodial Services, viewed sprains, strains and dislocations as being the major injuries experienced by DCS POs. This study showed that 11.7% of the cohort group members had sustained physical injuries and 5.5% had muscular stress during the past two years. The DCS data shows that 11.3% of POs injuries were associated with restraints and 3.3% had muscular stress. It was interesting to note that 39.3% of managers and employee welfare services staff viewed restraints as the cause of physical injuries, which is quite different to the reality. Muscular stress was reflected by 42.9% of the managers as a burden to POs. The fact that there is such a difference of opinion regarding POs injuries is of concern as it appears as if management may not be in touch with the reality of the real causes of injuries among POs.

One of the most challenging injury causes identified in this study are injuries sustained from sharps and needle stick injuries as they can expose POs to infectious diseases. The percentage reported is 2.7%; however, the potential health effects are lifelong and threaten the long term health of POs, their associates and families. Blood borne infections and exposure to bodily fluids instil fear in POs when they come into physical contact with non compliant prisoners whose health status is unknown. To substantiate the fear, a study conducted in the USA reported a sheriff who acquired hepatitis C, when blood splashed into his eyes in the process of separating fighting prisoners (Larney & Dolan, 2008). This study finding is also supported by a New South Wales study of a PO who died from an HIV related infection after an assault with a syringe filled with blood (Egger & Heilpern, 1991).

5.4 Nature of injuries

Sixty two percent of POs in the study cohort reported work related sprains and strains, while 14.8% reported bruising and contusion, 4.6% had superficial injuries and 9.3% had puncture wounds. These findings are similar to the DCS data, which report that 53.9% of POs suffered sprains and strains in the last two years, bruising and superficial injuries were 18.3% and 10.3% respectively. The findings are also consistent with results obtained by (Schaufeli & Peeters, 2000) which indicate that POs are under staffed in prison environments whilst they are still expected to carry out numerous tasks that expose them to injuries.

5.5 Other risk factors

Managers and employee welfare services staff were of the opinion that fatigue 21.4% was largely due to a lack of physical fitness amongst POs and 64.4% of the managers indicated that a lack of fitness maintenance contributed to officers sustaining physical injuries, this introduces a different dimension to the causes of injuries among

POs. The study findings from self assessment on state of fitness show that 37.0% of POs assessed themselves as being of average fitness and 15.1% as unfit. These findings are consistent with study findings conducted by (Begg, et al., (2008) that indicated physical inactivity have negative health consequences which account for 7% of the injury burden to Australians. It has also been found that few adults maintain their fitness levels, as they age and this is probably the case with POs in WA prisons (Proper, et al., 2002). The DCS provides gym facilities for POs, however, there are no trainers to lead physical exercise programs and there is no specifically allocated time set aside for physical exercise, therefore utilization of the facilities is poor. Programmed physical training is provided to new recruits during their entry level training at the DCS Academy, however, there is no program for physical fitness maintenance after completion of the initial training. An evaluation of body mass index (BMI) of POs supports the assertion that POs are not physically active as BMI data indicated that 74.0% of the cohort group were overweight or obese and being obese was significantly associated with injury $p = 0.087$.

Employers should be encouraged to provide health and fitness workplace programs which include physical activities for employees (Australian Institute of Health, 2010). In high energy demanding jobs, physical activities increase flexibility and strength which in turn reduces fatigue. Findings from (Department of Health, 2008), point out the importance of injury prevention and this study shows that there are gaps in injury prevention since safety promotion opportunities currently provided to POs by the DCS.

Reasons for visiting the doctors were investigated to measure the impact of injuries sustained by POs in a prison environment. The findings from the cohort group show that 72.9% of POs received medical treatment for one or a number of persistent work related injuries. Literature suggests that the aging workforce and older workers are prone to injuries hence this is consistent with this study findings (Gershon, et al., 2002). Even though 72.9% of POs visited doctors for medical treatment over the study period, no relationship between visits to the doctors and work related physical injuries was found ($p = 0.561$). The study findings also reflected that job demands, job support and constraints were not significant factors of work related injuries ($p = 0.891$).

5.6 Effects of work related physical injuries

DCS like other correctional services organisations rely heavily on POs, thus physical injuries sustained by staff are potentially distressing to the organisation (Lambert, et al., 2007). Literature suggests that injuries have a negative impact on the workforce in terms of work disruptions, absenteeism, and increased workload for

remaining staff. Staff turnover and low morale also impact on organisations in terms of high workers compensations claims, lost time injuries and the loss of experienced workers (Garcia, 2008; Mahoney, 2005). The impacts of physical injuries sustained by WA POs were investigated to measure their effects on POs and the DCS. The study assessed the treatment received by POs following work related injuries, period of lost time, general effects and workers compensation claims incurred by the DCS.

5.7 Treatment

The study findings show that POs frequently sustain physical injuries which result in them seeking treatment in the form of first aid or medical treatment and some are hospitalised as a result of their injuries. In the last two years, 49.0% of POs who sustained injuries received first aid treatment. The study shows that POs who sustain bruises and superficial wounds generally only receive first aid treatment. The findings from this study show that 34.6% of POs received medical treatment and 3.9% were hospitalised. Activities like restraining non compliant prisoners expose POs to back, neck and joint injuries due to unplanned actions and manual handling. Literature shows that DCS POs reported sprains, strains and dislocations which to some were fatal (Mahoney, 2005). The high injury rate causes lost time impacts, higher absenteeism and low morale among POs, this also leads to increased workers' compensations claims and a loss of confidence on the job as fear of injury becomes obvious.

5.8 Time off work

In a high risk prison environment staffing levels must be adequate to maintain security and safety for POs (Liebling, et al., 2011). Reductions in staff numbers affect the workload of the remaining members. This study found that physical injuries sustained by POs resulted in lost time. In the cohort group 35.9% in the last two years had lost time of more than three shifts, 30.1% had time equal to one shift and 34% of the POs had one to three shifts of lost time. Data obtained from the DCS shows a gradual rise in lost time claims, which rose from 166 in 2008/2009 to 257 in 2009/2010 and an increase of 21.06 days to 28.40 days in lost time frequency rates for the same period which would have impacted on the DCS and the remaining POs on the job. Absenteeism related to work overload and staff not operating to full capacity due to latent injuries exposes the remaining POs to an increased risk of also sustaining physical injuries. This also results in the escalation of compensation claims which in turn presents increases in insurance premiums, thus the cycle of injury related impact continues to escalate. This finding is supported by (Fisher & Gunnison, (2001). Among this study cohort, POs reported that they needed to work extra shifts and work long hours to cover staff shortages, a finding that was supported by (Brogmus & Maynard, (2006). The consequences of long working hours and job dissatisfaction, family

problems and physical illnesses, each of which increase the risks of further injury and lost time.

5.9 General ill health effects

The POs in this cohort reported a high level of general ill health effects. Being injured at work also resulted in a loss of confidence on the job that translates to low morale and family unrest. Literature is consistent in supporting this finding of prison conditions increasing aggression and cause a decline in performance amongst POs (Mayhew, 2000). The PO job creates high stress levels which can spill over to family conflict and aggression. In the cohort group 17.5% of POs indicated that they have low morale on the job 16.5% feared injury, 16.5% had lost confidence on the job and 4.9% reported family unrest. Thirty two percent of POs reported that injury had no effect on them and this is a unique finding which needs further investigation. It is possible that the group had developed a certain level of resilience or endurance or now view injuries as part of their life. The managers in the study viewed general health effects as impacting negatively on running the prisons and disruptive of work processes.

5.10 Workers' Compensation Claims

Workers' compensation and injury management is a legislative requirement for organisations to ensure compliance in accordance with the Workers' Compensation and Injury Management Act 1981. In managing high risk services DCS has a comprehensive workers' compensation program that involves training, information sessions and return to work programs. This study shows that 53.9% of POs sustained sprains and strains in the last two years, resulting in DCS incurring high workers' compensation claims. The other injuries included bruising, superciliary injuries, fracture of the bones and concussions. The actual DCS database indicated that 39.1% of the POs who sustained physical injuries lodged workers' compensation claims. The findings from the cohort group shows that 41.5% of POs aged 45 – 54 years had workers compensation claims in the last two years, whilst 29.8% of those aged 55 years and above also made claims. The study shows that the POs who are 34 years and below had a relatively lower percentage of claims. This therefore reflects the fact that POs who sustain more injuries are those in the aging population group. As the prisons are high risk workplaces, they demand workers who are physical fit and healthy. The other interesting factor identified by managers is the lack of physical fitness and maintenance of physical fitness amongst Pos.

Studies have shown that physical function and strength declines with age and this exposes older employees to work related injuries (Gershon, et al., 2002; Mahoney, 2005). Although this is disputed by other studies which reflect that workplace

performance improves with advancing age, this study found that older POs and those who have been on the job for a longer period use experience in handling volatile situations; however, when POs come in physical contact with non compliant prisoners they sustain sprains and strains and to some result in more serious musculoskeletal disorders that manifest in emotional injuries including depression, traumatic stress disorders and excessive chronic pains, all these conditions result in longer periods off work and increased workers compensation claims settlements. A study by (Mahoney, (2005) supports this finding as it indicated that POs in WA prisons approximately lodged 250 claims every year for the past 5 years. The DCS report for 2010 adds value to the findings on high workers' compensations claims incurred by DCS. There was an average of 33 new claims each month, with 93 – 96 active and ongoing long term claims in the same period. Injuries appear to be on the increase and impact negatively on DCS in terms of workers' compensation claims, additional workload for non injured POs, as well as for injury management and psychosocial support teams (Department of Corrective Services, 2010b) .

This study shows that the number of POs who lodge workers' compensation claims in DCS increases each year with an increase of 101 claims within a two year period (2009 – 2010). During this period the lost time frequency rate rose from 22 days to 28.4 days and the lost time claims increased from 191 to 257. These data demonstrate clearly that staff injuries impact negatively on the DCS in terms of staff management and insurance premiums. This study also shows that when POs sustain physical injuries these may manifest as stress which in turn elevates their risk of sustaining a further injury. Literature supports the finding that when POs are under stress they are at a higher risk of sustaining workplace injuries.

The study findings show that POs return to work not long after sustaining injuries. This is supported by the DCS, 2010 annual report data that indicates a marked decrease in total working days lost (decreased from 9.493 to 4.778) in the past two years. This finding is likely due to the comprehensive DCS return to work programs developed between 2008 and 2009, which have lead to a 50% reduction in total working days lost.

5.11 Conclusion

In this study the causes and effects of physical injuries among WA POs were explored, and this was the largest study of its kind conducted among this particular group. The potential risk factors for physical injuries to POs were investigated, followed by identifying factors which influenced the risk of physical injuries amongst POs were

analysed and lastly, the effects of physical injuries on individual POs and the DCS were assessed.

The causes of physical injuries sustained by POs are influenced by inherent prison associated risk factors resulting from the need of POs to manage a diverse prisoner population during the process of rehabilitation of prisoners. These risk factors are exacerbated when dealing with aggressive violent inmates.

The major causes of physical injuries in WA prisons are classified as slips, trips and falls at the same level, when POs engage with non violent prisoners. During restraining procedures with violent or mentally ill prisoners POs frequently hit objects with part of their bodies, which result in injuries. Most of the fatal causes are injuries were associated with sharps and needle stick injuries sustained when dealing with patients infected with life threatening incurable infections and diseases such as HIV, AIDS, Hepatitis C and B. Furthermore, some POs suffer had psychological illnesses such as stress and depression.

Physical fitness and its maintenance play an important role in reducing physical injuries in the harsh prison work environment, however, not much emphasis is put on the provision of structured physical fitness programs for POs after completion of their initial training.

Physical injuries also contribute significantly to high workers' compensation claims., which in turn cause increased insurance premiums for the DCS. The higher claims workload creates administrative problems and difficulties in replacing the high number of injured POs on the frontline. The under staffed POs left on the job develop low morale that result in increased staff turnover and general ill health effects.

The DCS runs an effective return to work program; this demonstrated by the marked decrease in working days lost by injured POs after sustaining injuries. Prison environments all over the world, including WA are regarded as dangerous places to work and are associated with risk factors for physical injuries, which are influenced by several inherent prison risk factors and which impacts negatively on the DCS and POs.

6 Recommendations

1. Accident/Incident investigations should be conducted in a more comprehensive manner to analyse the root causes of these incidents that can lead to the development of appropriate preventive and corrective measures, which in the long term will reduce the workplace injury rate.

- a) Introduce an Accident/Incident Investigation working group comprised of POs and other staff trained in accident investigations that will collate all injury data, conduct investigations and risk assessments and advise on appropriate controls for each accident/incident.
 - b) Conduct risk assessments for all high safety and health risk activities in WA prisons and advise DCS through the development of risk registers.
 - c) Record and analyse data related to the circumstances surrounding sharps and needle stick injuries across DCS facilities in order to develop procedures and processes that will reduce or eliminate this risk. .
2. Implementation of DCS managed and resourced physical training programs across all prisons in WA
- a) This initiative should complement the physical training regimes currently conducted by the DCS Academy at the entry level training for new POs with a view to maintaining physical fitness for staff working in high risk prisons.
 - b) Gyms should be managed by qualified physical trainers to guide staff and to reduce physical injuries associated with the use of gym equipment.
3. POs training
- a) POs curriculum to include mental health prisoners' management.
 - b) Include manual handling, mental health and risk assessments in POs mandatory training.
 - c) Develop plans to attract more young POs recruits to supplement the ageing workforce and to provide for succession planning.
 - d) Recruitment factors should include candidates that meet the assessment criteria of psychological profile, personal education levels and physical fitness to perform the high risk activities demanded by the job.
4. Future research
- a) To help DCS manage physical injuries in prisons, future research on minimising the causes and effects of physical injuries to POs would help in the development of control and prevention strategies.

- b) Role of mental health services, in reducing physical harm to POs in WA prisons.

7 Knowledge contribution

This study has defined the causes and effects of physical injuries amongst WA POs and DCS and provides empirical knowledge to DCS as an organisation.

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Appendix 1: ECU Ethics Approval

23 March 2011

Mr Bigboy Ngwenya
107 Yindana Boulevard
LAKELANDS WA 6180

Dear Mr Ngwenya

I am pleased to write on behalf of the Higher Degrees Committee to advise that your master's research proposal has been approved – **Causes and effects of physical injuries to Prison Officers employed in environment of high risk and high need offender management in Western Australia.**

I also wish to confirm that your proposal complies with the provisions contained in the University's policy for the conduct of ethical research, and your application for ethics has been approved. Your ethics approval number is **6295** and the period of approval is: **22 March 2011 to 22 December 2011**

Approval is given for your supervisory team to consist of:

Principal Supervisor: A/Prof Jacques Oosthuizen - ECU

Co Supervisor: Mr Martin Cross- ECU

The examination requirements on completion are laid down in *Part VI of The University (Admissions, Enrolment and Academic progress) Rules for Courses Requiring the Submission of Theses* available

at: http://ww.ecu.edu.au/GPPS/legal_legis/uni_rules.html

Additional information and documentation relating to the examination process can be found at the Graduate Research School website: <http://research.ecu.edu.au/grs/>

Please note: the Research Students and Scholarship Committee has resolved to restrict Master by Research (1 year) theses to a maximum of 40,000 words or a Master by Research (2 year) theses to a maximum of 60,000 words. Under special circumstances a candidate may seek approval from the Faculty Research and Higher Degrees Committee for an extension to the word length (RSSC 33/04).

I would like to take this opportunity to offer you our best wishes for your research and the development of your thesis.

Yours sincerely

Patricia Brown

Research Assessment Coordinator

Research Assessments- SSC

Principal Supervisor: A/Prof Jacques Oosthuizen - ECU

Co Supervisor: Mr Martin Cross- ECU

HDR Kristina Sfredo

Appendix 2: DCS Corporate Research Approval and Consent



Government of Western Australia
Department of Corrective Services

Corporate Support

18 March 2011

Re: Ethics Application – BB Ngwenya

This is to confirm that approval and consent has been provided to enable BB Ngwenya, an employee of the Department of Corrective Services, to access workers' compensation information in relation to his research project number 6295.

Yours sincerely

Paul Wilding
Director Corporate Services
Date: 18/3/11

Janis Hamilton
Manager Employee Welfare Services
Date: 18/3/11

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Appendix 3: DCS Research and Evaluation Committee Research Approval



Department of Corrective Services
Government of Western Australia
Strategic and Executive Services

Mr Bigboy (BB) Ngwenya
Human Resources Directorate
Department of Corrective Services
Level 1, Westralia Square, 141 St Georges Terrace
PERTH WA 6000

Dear Mr Ngwenya,

RESEARCH TITLE: "Minimising the causes and effects of physical injuries amongst prison officers in high risk and high need offender management in Western Australia:

Thank you for your research application. Department of Corrective Services (DCS) Research and Evaluation Committee (REC) has considered your research proposal noted above. REC is pleased to support the research in principle and is convinced of its usefulness.

As stipulated in the DCS Code of Conduct, research applications need to have ethics approval before the project can commence, therefore this approval is subject to ethics approval and we invite you to send us a copy once you received it. Subsequently, you will be invited to sign the Code of Conduct and to discuss the practical implementation of your research.

The Code of Conduct requires that DCS reviews any papers prior to release (publication, marking, etc). REC requests a copy of the final report 20 working days prior to its release. You will also be asked to produce a three to four page summary for placing on the DCS's Internet Site.

REC values the potential benefits of your work and is looking forward to collaborating with you. If you have any further queries, please contact Dr Hilde Tubex, Team Leader Research and Evaluation, by phone on (08) 9264 6118, or e-mail Hilde.Tubex@correctiveservices.wa.gov.au

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Appendix 4: Questionnaire for Prison Officers

Section A: About you and your work

**This section is about your demographic information and your employment status.
Circle one for each question**

1. What is your age?

- | | |
|-------------|---|
| under 25 | 1 |
| 25 – 34 | 2 |
| 35 – 44 | 3 |
| 45 – 54 | 4 |
| 55 and over | 5 |

2. What is your highest level of education?

- | | |
|--|---|
| Primary School | 1 |
| Completed 1- 3 years High school | 2 |
| Completed 4 - 5 years High School | 3 |
| TAFE/Technical College | 4 |
| Tertiary Qualifications e.g. University Degree | 5 |

3. Which category best describes your current employment?

- | | |
|--------------------------------|---|
| Probationary Officer | 1 |
| Prison Officer | 2 |
| First Class Prison Officer | 3 |
| Senior Officer | 4 |
| Principal Officer | 5 |
| Emergency Security Group (ESG) | 6 |

4. How long have you worked for Department of Corrective Services?

Less than 1 year	1
1 – 2 years	2
3 – 5 years	3
6 – 10 years	4
More than 10 years	5

Section B: Health and Fitness

This section is about your physical health and fitness. Circle/tick the answer that suits you (One answer for each question)

1. Please circle how you would describe your present state of physical health

Poor	1
Average	2
Very good	3
Excellent	4

2. What is your approximate body weight in kilos

3. What is your height in centimetres or metres

4. Giving consideration to your age, please indicate your current level of fitness, where 1 means you are **very unfit** and 5 means you are **very fit** (circle one).

1 2 3 4 5

5. Does your workplace provide you with physical training to be fit for the job?

Yes	1
No	2

6. Are there fitness programs provided by the employer on site?

Yes	1
No	2 (Go to question 8)

7. If yes, are the fitness programs conducted by a qualified physical fitness trainer?

Yes	1
No	2
I don't know	3

8. Are you able to access gymnasium to maintain fitness in your workplace?

Yes	1
No	2

9. How often do you physical training for 30 minutes or more?

Every day	1
5 – 6 days a week	2
3 – 4 days a week	3
1 – 2 days a week	4
Once a fortnight	5
Once a month	6
Once a year	7
Not at all	8

10. Do you smoke?

Yes	1	Go to question 11
No	2	Go to question 12

11. If you smoke please circle how many cigarettes or equivalent you smoke daily

40 or more	1
30 – 39	2
20 - 29	3
10 – 19	4
5 – 9	5
Fewer than 5	6

12. The following questions are about your general physical health. Please indicate when you have suffered from the following problems by circling the number in the appropriate column. **Choose only one option for each row. Tick/Circle**

		In the last 2 weeks	In the last year
a	Feeling run down	1	2
b	Shortness of breath	1	2
c	Muscular aches and pains	1	2
d	Arthritis	1	2
e	Sprains and strains	1	2
f	Sleeping problem	1	2
g	High blood pressure	1	2
h	Back problems	1	2
i	Nervous breakdown	1	2
j	Depression	1	2

13. How many times over the past year did you visit your doctor for medical treatment?

- | | | |
|-------------------------|---|--------------------|
| None | 1 | Go to next section |
| One, two or three times | 2 | Go to question 14 |
| More than three times | 3 | Go to question 14 |

14. Were your visits to the doctor for treatment usually for?

- | | |
|---|---|
| A number of minor work related physical injuries | 1 |
| One persistent work related physical injury | 2 |
| More than one persistent work related physical injury | 3 |
| Issues not related to work | 4 |

15. If you have been taking medication in the **last twelve months** please circle the reason(s) You may choose more than one answer:

- | | |
|------------------------------|---|
| Common pain relief | 1 |
| Muscular aches and pains | 2 |
| Stress/ anxiety/ depression) | 3 |
| Sleeping disorders | 4 |
| Other (specify | 5 |

Section C: Causes of physical injuries

This section is about causes of workplace physical injuries at DCS worksite

1a. Have you suffered from a work related physical injury in the last two years?

- | | |
|-----|-------------------|
| Yes | 1 Go to 1b |
| No | 2 Go to section E |

1b.If yes how long had you been in the job before this injury occurred?

- | | |
|--------------------|---|
| Less than 1 year | 1 |
| 1 – 2 years | 2 |
| 3 – 5 years | 3 |
| 6 – 10 years | 4 |
| More than 10 years | 5 |

2. What was the cause of the injury?

Circle as many answers as you see fit?

Hitting objects with part of body (contact, impact, hit, struck, spit (not assault or restraint)	01
Fall on same level (falls, trips, slips not assault and restraints)	02
Assault – (deliberate, bite, punch, kick)	03
Restraint – Prisoner	04
Muscular stress	05
Machinery	06
Conducting training	07
Sharps needle stick etc	08
Electrical	09
Substance exposure (chemical , biological, body fluids)	10
Lifting	11
Other (specify)	12

3. If you had an injury, what was the nature of the physical injury?

Circle as many as you see fit

Fracture/broken bones	1
Bruising/contusion	2
Sprain/strain	3
Wounds/cuts/puncture	4
Concussion	5
Burns	6
Poisoning, chemical, biological, drugs	7
Other – specify	8
No injury	9

Section D: Effects of physical injuries

This section is about effects of workplace physical injuries to the injured person

Tick one /multiple

1. If you had an injury, did it result in you getting?

- First Aid treatment only 1
- Medical treatment 2
- Hospitalisation 3
- No treatment 4

2. If a work related injury resulted in you taking time off, how long were you off work?

- One shift only 1
- One to three shifts 2
- More than 3 shifts 3

3. What effects did your work related physical injury/injuries have on you?
(Circle one or more).

- Family unrest 1
- Low morale 2
- Fear of further injury 3
- Loss of friends 4
- Financial loss 5
- No effect 6
- Loss of confidence 7
- Other (specify) 8

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Section E: Job demands, support and constraints

This section is to examine the types of demands placed on you at work and how they may contribute to a physical injury. Please indicate the extent to which you agree with the statement by circling only one number in each row.

Frequency

1	2	3	4	5
very rarely	sometimes	half the time	often	very often

1. My job is such that I am required to:

		1	2	3	4	5
a	cope with a wide variety of activities simultaneously					
b	spend time keeping up with new prison procedures					
c	carry out duties with insufficient support from management					
d	perform tasks that I dislike					
e	undertake more work than I have time to do properly					
f	perform tasks in which I am unsure of my responsibilities					
g	perform risk assessments for activities such as restraints					
h	Perform tasks that I have not been trained in					

2 The Department of Corrective Services gives me an opportunity to:

a	undertake regular physical fitness activities in the workplace					
b	be involved in safety training needs assessments					
c	report accidents I sustain in the workplace					
d	report incidents that occur in the workplace					
e	be involved during investigations of accidents/incidents, I experience in the workplace					
f	complete workers' compensation claims promptly with enough support after a violent incident					
g	To access counselling services after an incident/accident					

Appendix 5

Questionnaire for Managers and Employee Welfare Staff

Section A: Causes of physical injuries

This section is about causes and effects of workplace physical injuries to Prison Officers at the Department of Corrective Services worksites

1. What do you consider are the major causes of physical injuries that are sustained by Prison Officers in DCS prisons? (**Choose as many as you consider being appropriate**).

- Restraints 1
- Restraint training 2
- Stress physical 3
- Furniture and Fittings 4
- Prisoner aggression/assault 5
- Person/co-worker 6
- Slips, trips and falls 7
- Equipment 8
- Fatigue 9
- Lack of physical fitness of staff and physical fitness maintenance 10
- Poor supervision 11
- Other (specify) 12

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2. Please choose one of these factors which you think has the most severe impact and is of high concern to employees. Explain in detail why you selected this factor.

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