

## Health and Safety Practices and Work Attendance in a Ghanaian Health Service

Rita Darko<sup>1</sup>, Nana Yaw Oppong<sup>2</sup> & Abigail Opoku Mensah<sup>3</sup>

<sup>1</sup>Dunkwa-on-Offin Municipal Hospital, P. O. Box 49, Dunkwa-on-Offin, Ghana

<sup>2,3</sup>School of Business, University of Cape Coast, Ghana

E-mail: [noppong@ucc.edu.gh](mailto:noppong@ucc.edu.gh)<sup>2</sup>; [aopokumensah@ucc.edu.gh](mailto:aopokumensah@ucc.edu.gh)<sup>3</sup>

<https://doi.org/10.47963/jobed.2020.03>

---

### Abstract

This study assesses how health and safety policies and practices are adhered to at the Dunkwa-on-Offin Municipal Hospital in Ghana to enhance quality and sustainable healthcare delivery. The study approach was mainly quantitative and employed a survey design. 123 employees, out of the 167 total population of the hospital, were sampled. Questionnaire was designed to collect quantitative data, which were complemented by a single-source interview data. Data were analysed, using Pearson's Correlation Coefficient (R), multiple regression and narrative analysis. The results showed that although employees were aware of and adhered to health and safety practices, about two-thirds of them had experienced different forms of injuries with significantly negative effect on their work attendance (absenteeism). It was further found that health and safety supervision was weak. We recommend that the Ministry of Health should step up its health and safety supervisory and monitoring roles for improved quality and sustainable healthcare delivery.

**Keywords:** Health and safety practices, employee attendance, health sector, Ghana.

## Introduction

Work plays a major role not only in the life of the employee but, if meaningful, also leads to satisfaction and organisational commitment (Anthum & Innstrand, 2016). Since work is an important aspect of many people, workers should go to and return from work safe and sound. Safety, therefore, is a basic requirement in every aspect of our work lives. It involves the protection of people from physical injury (Hughes & Ferrelt, 2008). Amponsah-Tawiah and Dartey-Baah (2011), referring to the International Labour Organisation's (ILO) Convention on Occupational Health Services (No. 161, 1985) state that occupational health and safety services should be available and are the right of each individual taking part in work, irrespective of the sector of the economy, size of the company or type of assignment.

As per the law and other regulations, such as the ILO Conventions, employers are expected to do everything in their power to keep employees away from danger and free from injury while at work. Coming back home in Ghana, Section 10(a) of the Labour Law 2003, Act 651 prescribes the first right of the employee to work under satisfactory, safe and healthy conditions. This implies that the employer should provide healthy and safe working environment for the employee at all times. This is partly because the working time lost during a recovery period after an injury or illness may have adverse implications not only for the employee, but also for the employer. This is because the situation could reduce the stock of human capital that could affect organisational performance and, subsequently, impact on employees' earning capabilities (Woock, 2009).

There is, therefore, the need to create a culture in which health and safety issues at the workplace are prioritized, a move towards reducing accidents and injuries and their resultant impacts on employee attendance, to avert unnecessary costs and improve performance. This gives value to the current study as concerns for and monitoring of employee attendance at work is one of the significant components of human resource activities and could be a strong factor of counter-performance. Work attendance and absenteeism are linked to many factors, with the major, though not sole determinant, being disease-related incapacity. For management, absenteeism is an important concern from the viewpoints of service delivery, efficacy and a concern for their employees. Reducing accidents and improving occupational ill-health have, therefore, been a major concern for organisations today (Guthold, 2011) and many are taking an increasing interest in areas such as managing absenteeism.

It is suggested by Bloom and Canning (2000) that effective health and safety management has negative relationship with workplace accidents and injuries, and this may have adverse effect on employee work behaviour, including attendance with resultant negative effect on organisational performance. In this regard, management should protect employees to ensure health and safety issues are taken seriously. Failure to do so could result in absenteeism emanating from workplace accidents and occupational illnesses, which can lead to permanent occupational disability. Section 120 of the Labour Act of Ghana Act 651 requires employers to report as soon as practicable the occurrence to the appropriate government agency, occupational accidents and diseases which occur in the workplace. However, there is no available data on the impact of health and safety policy implementation on employee work behaviour and/or the impact of accidents and injuries on employee work attendance at the Municipal Hospital, Dunkwa-on-Offin, as no empirical studies have been conducted in this regard. This study, therefore, seeks to investigate how employees adhere to health and safety policies and how the implementation impacts on employee work attendance at Dunkwa-on-Offin Municipal Hospital. This identified problem provides a motivation for our investigation into the influence of health and safety practices on employee attendance in the Ghanaian health sector.

Aside the problem identification, we also found a gap in research in health and safety practices and attendance in Ghana and, more especially, in the health sector. Apart from the Ministry of Health Policy and Guidelines for Infection Prevention and Control in Healthcare Facilities (Ministry of Health, 2009) and other operational reports, there is scanty literature on the topic. Publications on health and safety and employee attendance have focused on the advanced countries with little focus on the health sector. For instance, Pauliakas and Theodossiou (2010) investigated the effect of absenteeism and revealed that the socio-economic costs of (sickness) absence in advanced Western economies account for between 2-3% of their total GDP. Bevan (2010) also found that every year in the United Kingdom, 200 million days are lost through sickness absence – an average of 8.5 days lost per annum – at an estimated cost of £13 billion. In 2013 alone, 131 million days were lost in the United Kingdom due to sickness absence (Office for National Statistics, 2014). Also, the Manufacturers' Organisation's (2015) sickness absence and rehabilitation survey indicates that an average sick pay cost per employee is £374, costing a total of £1 billion for the manufacturing sector (The Manufacturers' Organisation, 2015). If an advanced country, such as United Kingdom, with keen concern for policy implementation and absence management reports these disturbing figures, then the story is expected to be more alarming in developing countries, such as Ghana, hence this study.

The rest of the paper is structured as follows. In the next section we review the literature on health and safety and employee attendance. This is followed by the methodology section, then we present and discuss research data. These are followed by presentation of our key findings, before drawing the conclusion of the study, with our recommendations ending the paper.

## Literature Review

In this section we review extant literature on health, safety and attendance. Specifically, we review literature on some health and safety practices in Ghana, occupational diseases and injuries and work attendance, and senior management's commitment to health and safety issues. Also referred to as occupational health and safety, Workplace health and safety involves the rights of the employee to carry out his/her daily duties in a safe environment. In Ghana, workplace health and safety are prescribed by Section 10(a) of the Labour Law 2003, Act 651.

### *Health and Safety Practices*

Knowledge and skills on safety practices among health personnel, especially regarding policy and guidelines in infection prevention and control, have been identified by the Ministry of Health to be inadequate (Ministry of Health, 2009). This should, however, not be the case as compliance with health and safety practices has proved to reduce accidents and injuries at the workplace and its resultant absenteeism (Akpan, 2011). By implication, to mitigate under-performance in organisations, one of the key areas to consider is effective policy and procedures on health and safety. We consider the following forms of health and safety practices in the healthcare system in Ghana.

#### Injection safety

Injection safety is an injection that is administered using appropriate equipment, ensuring that it does not cause harm to the recipient or exposes the provider to any avoidable risk, and does not result in any waste that is dangerous to other people (Odeyemi, Onifade & Onifade, 2005). Over the last 50 years, scientists have continued to discover new blood borne pathogens associated with unsafe injection use, therefore, giving weight to Odeyemi, Onifade, and Onifade's (2005) concern over injection safety in health facilities.

Injection is one of the most common health care procedures in both the formal and informal healthcare sectors with the associated injury being one of the most common injuries in the sector, particularly among nursing staff. Though in some developing countries, and especially in tertiary health facilities, injection safety practices have been fair, because of provision of injection equipment and training of health workers, the picture is different in most developing countries, like Ghana. As revealed in the study of Medubi, Akande and Osagbemi (2006), injection-related injuries and sicknesses in developing countries far exceeds the world average rate. Equally, the risk of contracting an infection from patients is high in developing countries, and as proved from the study of Niu (2010), this is because the hygienic conditions in hospitals in these countries may be problematic and render infectious diseases very rampant. For instance, a Swaziland study and a similar study in the Dominican Republic revealed around 30% and 23.5% incident rates respectively among nurses (Daly, Nxumalo & Biellik, 2004; Moro et al, 2007). More disturbing figures emanated from cross country surveys in Nigeria and Burkina Faso by Bolarinwa et al. (2012) on needle recapping showed 80% and 58% prevalence, respectively. These show how harmful infections could be if health and safety practices are not adhered to during its administration. Undoubtedly, these will negatively influence attendance as affected personnel will have to take some days off to recuperate.

#### Hand hygiene

Hand washing is the single most effective method used in transmitting as well as preventing the spread of infections. The aim of hand hygiene practices is to eliminate rapidly, as far as possible, the transient (contaminating) flora and to have persistent antimicrobial activity on the resident flora. In the context of healthcare setting, this means decontaminating the hands of transient flora before the next patient contact. Despite this fact, Ghanaian health workers often do not pay much attention to this practice (Jumaa, 2005). Proper hand hygiene reduces the number of potentially infection-causing microorganisms on the hands and decreases the incidence of infection transmission in health facilities.

According to the Ghanaian Ministry of Health (MoH) policy and guideline on organisational health and safety (see Ministry of Health, 2010), there are three major types of hand hygiene—social/routine hand washing, hygienic hand washing and hand antisepsis and surgical hand wash/scrub. These have proved to be the case during the Coronavirus (Covid-19) pandemic that swept across almost all countries in the world. One of the key World Health Organisation precautionary measures was proper and frequent washing of hands to prevent people from contaminating themselves and others with the virus.

#### Personal protective equipment (PPE) and clothing

Personal protective equipment/clothing (PPE) are used to prevent blood and other potentially infectious materials from coming into direct contact with clothing and the body of health staff, patients, relatives and friends. There are different types of PPEs and the use of each type depends on the task to be performed and the anticipated exposure. PPEs may include gloves, gowns, laboratory coats, face shields or masks, eye protection, pocket masks, leg protections, such as boots and other protective gear (Occupational Safety and Health Administration, 2011).

Emphasising the importance of PPEs, Pink, Morgan, and Dainty (2014) provide evidence that gloves (one of the PPEs mentioned above) can prevent hands from becoming contaminated with microorganisms both from the patients and inanimate environments.

Gloves, therefore, contribute to prevention of the spread of pathogens if used correctly. The route of transmission while wearing gloves may result from contamination when removing gloves or from small defects in the gloves (Jumaa, 2005). This explains why experts advocate that gloves should be changed between patients and, preferably, should not be washed or re-used. The quality of gloves, therefore, cannot be overemphasised. Studies on the use of gloves have been mainly observational and may be subject to reactive biases because of the presence of the observer (Curtis et al., 2003). However, the use of hand gloves has proved effective in preventing the spread of viruses/diseases.

Face and Eye protections must be worn whenever there is the likelihood of splashes, spray, splatter or droplets of blood or other potentially infectious material getting into the eyes, nose, mouth or other facial areas. The route of infection being the nose, mouth and eyes, face mask/shield has been one of the recommended PPEs to prevent the spread of Covid-19. Headgears, helmets are to be worn by maintenance staff when dealing with heights or where there is potential of objects falling. Drivers of motorbikes are equally expected to wear helmets while riding to reduce the possibility of head injuries during crashes. Staff must wear leg protections whenever there is the potential of the legs coming into contact with blood, body fluids or other contaminated materials, e.g., during surgical operations and deliveries, in the isolation wards and at the mortuary. For personnel working at the x-ray department, protective garments such as lead aprons and dosimeter are needed to minimise the extent of radiation exposures. Personnel are to wear radiation eye protection glasses to prevent posterior sub capsular cataract formation (Chambers et al, 2011).

#### Healthcare waste management

Healthcare waste carries a higher risk of infection and injury than any type of waste. Between 10% and 25% of hazardous and infectious waste is generated in health facilities and requires special arrangement from the management of the facility. Exposure to dioxins and furans may lead to the impairment of the immune system, nervous system, endocrine system and the reproductive functions. A World Health Organisation assessment conducted in 22 African countries showed that the proportion of health-care facilities that do not use proper waste disposal methods ranges from 18% to 64% (Guthold et al., 2011), disturbing rates that need to be managed. To reduce exposure to toxic pollutants associated with the combustion process, such as dioxins, furans, nitrogen and sulphur oxides as well as particulate matter, and to minimize occupation health risks, best practices for incineration must be promoted.

These practices, as recommended by the Occupational Safety and Health Administration (2011), must include (1) waste reduction and waste segregation ensuring that only appropriate waste are incinerated to prevent emission of hazardous fume; (2) incineration must utilize appropriate start-up and cool-down procedures, achieve (and maintain) a minimum temperature before waste is burned, and ensure the use of appropriate protective equipment to safeguard workers; and (3) periodic maintenance of incinerators to replace or repair defective components through inspection, spare parts replacement, inventory, and record keeping.

Materials containing chlorine, such as polyvinyl chloride products (e.g., some blood bags, IV bags, IV tubes etc.) or heavy metals such as mercury (e.g., broken thermometers), should never be incinerated. Management and operational problems with incinerators, including inadequate training of operators, poor waste segregation methods, and poor maintenance, are issues affecting waste management, and these need critical assessment (Guthold, 2011) and the appropriate healthcare waste management system applied. A healthcare waste management system comprises (1) collection and segregation; (2) transportation; (3) storage; (4) treatment; and (5) final disposal (Robson et al., 2005). According to the MoH Policy and guideline on OHS, collection and segregation of waste requires that each type of waste must be placed immediately in its appropriate colour-coded container. The policy states that black container should be used for general waste (e.g., kitchen waste, paper, sweeping, etc.); yellow container for infectious waste, such as sharps, patient waste; human/animal tissues and culture specimen with the biohazard label and radioactive symbol for radioactive waste; while brown container should be for hazardous waste, e.g., expired drugs, vaccines, chemicals (Pink, Morgan & Dainty, 2014). These need to be adhered to for effective healthcare waste management.

#### *Occupation-related Diseases and Injuries and Work Attendance*

Exposure to work-related risk factors is one of the main determinants of health and safety outcomes, such as the absence behaviour of employees; the incidence of work accidents; and the occurrence of occupational diseases. These negatives OHS outcomes are significant as they entail significant direct and indirect economic costs at both individual and national levels. Work-related injuries/illnesses are likely to hamper the ability to work and workers' ex-post productivity following an incident. The working time lost during a recovery period may also have implications for their stock of human capital and their subsequent earning capabilities (Woock, 2009).

Infirmity and ill-health is believed to be a predominant factor underlying workers' propensity to take days off work (EUROFOUND, 1997). In 2011, the United States hospitals recorded 58,860 work-related injuries and illnesses that caused employees to miss work (Occupational Safety and Health Administration, 2013). It is believed that much of the absence, which is a major problem for organisations, is 'short-term' absences, which are attributed to minor illnesses. Joensuu and Lindstrom (2003) provide an extensive review of the role of sickness absence, and report that in Sweden the percentage of long-term absentees due to sicknesses reached 25% in 2001. The effect of sicknesses on employee attendance should be of grave concern to employers. For instance, Oppong (2017), assessing attendance factors, revealed that sickness was the most single highest contributor to employee absence. The author advised that organisations should have absent policies that outline employees' rights and obligations when taking time off due to sicknesses. Due to the prevalence of sicknesses and injuries and their impact on employee attendance, Oppong (2017) encouraged organisations without absence policies to develop one.

Accidents at work lead to injuries which bring about a significant number of sick leave days. A 2007/2008 survey by the Health and Safety Executive (HSE) on work-related illness estimated 34 million lost workdays; 28 million due to work related illness and 6 million due to workplace injury (Health and Safety Executive, 2009). These lost workdays have economic implications for employers. For instance, Bevan (2010) states that the Royal Mail of the UK experienced issues of long-term absence – especially related to musculoskeletal health – for many years. In 2003, their sickness absence levels were 7% (an average of 16 days per employee per year) and a daily cost of £1m. Boorman's (2009) review of the health and wellbeing of national health insurance scheme (NHIS) employees in the UK calculated that, if absence levels in the NHIS were reduced to the average of the private sector, 15,000 additional staff would be available each day to deliver patient care. This would represent an annual cost saving of around £500 million (Boorman, 2009).

This implies high rate of absence in the public sector facilities, such as the Dunkwa-on-Offin Government Hospital, than in private sector health facilities. The social and economic consequences of injury and illness impact on the workplace, not just primary actors, such as the employer and the affected employee, but also employee representatives, workmates and other staff (Adams et al, 2002). Reducing accidents and mitigating occupational ill-health are, therefore, important for organisations today and many are taking an increasing interest in areas, such as managing absenteeism. Akpan (2011) states that workplace absenteeism could be minimized in a firm with effective health and safety management system, while Oppong (2017) recommends a workable absence policy.

#### *Management's Commitment and Employee Adherence to Safety Policies and Practices*

Section 118(1) of the Ghana Labour Act 2003 Act 651 gives legal backing to workplace health and safety practices and places a responsibility on employers (in this case management) to ensure that employees are kept away from danger and free of injury while at work. According to Akpan (2011), for a health and safety management system to be effective, management at all levels should demonstrate their support of the health and safety programme. This may be demonstrated through management's participation in health and safety leadership training meetings, facility inspections, incident investigations, and provision of PPEs. A health and safety management system involves the introduction of processes designed to decrease the incidence of injury and illness in the employer's operations (Alberta, 2006). The successful implementation of health and safety policies in Ghanaian hospitals, therefore, requires management commitment for effective allocation of resources to ensure high level of employee participation. However, there seems to be mixed results as, on the average, managers and supervisors seem to have positive attitudes towards health and safety practices than employees (Ma & Yuan, 2009).

To foster cooperation between employers and employees regarding health and safety management, there should be a platform for communication on safety issues. Safety committees have been found to be appropriate means through which employee participation in safety issues can be advanced (Milgate, Innes & O'Loughlin, 2002). Safety committees provide advice on health and safety policies and procedures; helping in conducting risk assessments and safety audits; and making suggestions on improving health and safety performance. Participation by employees supports risk control by encouraging their 'ownership' of health and safety policies (Milgate, Innes & O'Loughlin, 2002). It establishes an understanding that the organisation, and people working in it, benefit from good health and safety performance. According to the Health and Safety Executive (2009), pooling knowledge and experiences through participation, commitment and involvement means that health and safety adherence becomes 'everybody's business.'

## Methodology

We adopted mainly a quantitative approach. We decided on this approach as collecting and analysing quantitative data was deemed the appropriate line to tow in investigating the topic.

### *Population and sampling*

The area of study was Dunkwa Municipal Hospital with a population of 167 (157 junior and senior staff, and ten management staff), which was made up of doctors, nurses, pharmacists, laboratory technicians, x-ray technicians, records personnel, laundry personnel, orderlies, labourers, cooks, accounting and administrative staff. Using Gomez and Jones' (2010) formula for sample size determination, the sample size was 123, using a random sampling technique to select the participate in this study (Saunders, Lewis & Thornhill, 2007).

### *Data collection and analysis*

Though questionnaire (using a five-point Likert scale, 1: strongly disagree-5: strongly agree) was the main instrument for data collection, a (single-source) follow-up interview was conducted with the Medical Superintendent of the hospital. The interview questions were based on themes that emerged from our literature, which also informed our data discussion. We, therefore, organised our data results and discussion according to the review headings. The approach also helped us relate the outcomes of previous related studies to our study results. Data were analysed using Pearson's correlation coefficient (R) and multiple regression. The single-source interview data were used to validate the quantitative outcomes. This was to find out how the health and safety policies designed and documented by the Ministry of Health, as narrated by the Medical Superintendent, were adhered to or otherwise by employees of the hospital.

## Results and Discussion

In this section, we present and discuss the two datasets – the questionnaire responses and the interview result.

### *Health and Safety Policies and Practices of the Ghana Health Service*

Out of the 123-sample used, (20.0%) of disagreed, (40.0%) were indifferent, (10.0%) agreed and (30.0%) strongly agreed that the Dunkwa-On-Offin Municipal Hospital has a policy on health and safety. Respondents agreed that staff had been notified of health and safety hazards at the hospital (WA=3.9000; StdDev=0.56765). Respondents disagreed (10.0%), were indifferent (10.0%), agreed (70.0%) and strongly agreed (10.0%) with weighted average (3.8000) and standard deviation (0.78881), suggesting overall agreement that new staff are given orientation on health and safety issues, and they expressed agreement that staff are periodically trained on how to protect themselves from workplace hazards (WA=3.6000; StdDev=0.96609).

The result shows that respondents agreed that systems are in place to identify and correct health and safety hazards (WA=3.5000; StdDev=0.84984), staff are encouraged to report work-related injuries (WA=4.5000; StdDev=0.97188), protective equipment is freely supplied to staff (WA=4.0000; StdDev=0.66667), and the use of personal protective equipment by staff are supervised by management (WA=3.7000; StdDev=0.48305). Respondents, however, expressed disagreement that records of injury and related diseases at the workplace are kept (WA=3.4000; StdDev=0.66617); health and safety committee has been set up (WA=3.1000; StdDev=0.87560), and further disagreed that there is a clear policy on injury and illness prevention (WA=2.9000; StdDev=0.87560) and periodic evaluation of the policy (WA=3.0000; StdDev=0.66700).

The Medical Superintendent revealed in an interview that:

*...the hospital has been promoting health and safety practises even before the introduction of the Health and Safety Policy, so we are not finding it difficult to implement the policy. We give orientation to staff, train them and encourage them to adhere to these practices. Though we have some challenges like financial and human resource for the implementation of the policy we are doing our best*

From the above two datasets, it is clear that Dunkwa-On-Offin Municipal Hospital has in place Health and Safety policies and practices. Management has shown some level of commitment to the Health and Safety policy and practices as the qualitative data corroborate the quantitative outcome. According to Akpan (2011), for a health and safety management system to be effective, management at all levels, should demonstrate their support of the health and safety programme. Management of the Hospital demonstrated their commitment in the form of provision of personal protective clothing and equipment, training and orientation of staff and supervision of health and safety practices adherence. These critical elements (periodic evaluation and health and safety committee) are not incorporated into the health and safety practices.

Table 1: Health and Safety Policies and Practices by Department of Respondents (Staff)

Questions	Departments	Responses		P-value
		YES	NO	
Have you been exposed to occupational and safety policy of MOH/GHS?	ND HASS TOTAL (113)	47(69.0%) 21(31%) 68 (100%)	14(31%) 31(69%) 45(100%)	0.011
Does the policy describe the way to work?	ND HASS TOTAL (113)	55.82(71.8%) 21.92(28.2%) 77.74(100%)	9.94(28.2%) 25.32(71.8%) 35.26(100%)	0.432
Have you been given orientation on health and safety issues?	ND HASS TOTAL (113)	48.9(70.7%) 20.26(29.3%) 69.16(100%)	12.85(29.3%) 30.99(70.7%) 43.84(100%)	0.009
Do you face any hazard during the performance of your duty?	ND HASS TOTAL (113)	62.8(74.1%) 21.95(25.9%) 84.75(100%)	7.32(25.9%) 20.93(74.1%) 28.25(100%)	0.999
Have you been trained in the safe use of hazardous and infectious products?	ND HASS TOTAL (113)	102.7(98.3%) 1.8(1.7%) 104.5(100%)	0.144(1.7%) 8.331(98.3%) 8.475(100%)	0.005
Have you heard of colour-coding techniques for waste segregation?	ND HASS TOTAL (113)	28.8(55.2%) 23.406(44.8%) 52.206(100%)	27.236(44.8%) 33.558(55.2%) 60.794(100%)	0.012
Has management provided adequate resources to ensure health and safety of employees	ND HASS TOTAL (113)	5.366(22.4%) 18.59(77.6%) 23.956(100%)	69.098(77.6%) 19.946(22.4%) 89.044(100%)	0.769

ND= Nursing Department; HASS=Health Administration and Support Services; Chi-square statistic is significant at the 0.05 level (results are based on Fisher's Exact test)

From Table 1, 68 of the respondents had been exposed to occupational health policy of MOH/GHS while 32 had not. Within the nursing department, 47 (69.0%) had been exposed to Health and Safety policies and practices while

21 (31.0%) of the respondents from HASS had been exposed to the policies and practices. The Fishers' Exact Test indicates that staff exposure to Health and Safety policies and practices significantly depends on their departments ( $p=0.011$ ). Out of the staff who had been exposed to the policy, 78 indicated that the policy described the way they work, but the remaining 35 indicated otherwise.

Also, 69 had been given orientation on health and safety issues, but 44 had not been given such orientation. Out of 62 respondents from the nursing department, 49 (70.7%) had been given orientation on health and safety issues, while 13 (29.3%) had not. With regards to the HASS department, 20 (29.3%) had been given orientation on health and safety issues, while 31 (70.7%) had not been given health and safety orientation. Orientation on health and safety issues significantly depends on the department of staff ( $p=0.009$ ). Training on the safe use of hazardous and infectious products significantly depends on the department of respondents ( $P=0.005$ ) [see Table 1]. From Table 1, 103 (98.3%) of respondents from nursing department attested that they had been trained in the safe use of hazardous and infectious products as compared to 2 (1.7%) of respondents from HASS department.

Again, 85 indicated that they faced hazard when performing their duty, while 28 indicated otherwise. While 24 perceived management as providing adequate resources to ensure health and safety of staff, the majority, 89, attested that management had not been providing adequate resources to ensure health and safety of staff. Hazard in performance of duty ( $p=0.999$ ) and allocating resource to ensure health and safety of employees ( $p=0.769$ ) do not significantly depend on departments of respondents. The respondents from nursing department indicated yes (74.1%) and no (25.9%) while those of HASS indicated 'yes' (25.9%) and 'no' (74.1%) to the question "do you face hazard in the performance of your duty?"

From the data presented above, employees attested that management had given them orientation and training on health and safety issues, but these depended on departments of the staff. Employees from the nursing department were mostly given orientation on health and safety as compared to those of HASS. This practice contradicts one of the five broad strategies that is adopted in the provision of occupational health services to staff of the health sector: promotional activities (Ministry of Health, 2010). According to the guideline, all employees, no matter their departments and roles, should be educated and oriented on health and safety policies and practices to enhance their safety behaviours and adoption of habits that favour healthy lifestyles.

The study asked both the management and the staff whether or not the health and safety policies adequately address health and safety needs of the employees in the hospital and the responses revealed that 7 (70.0%) and 3 (30.0%) of management members indicated 'yes' and 'no,' respectively, implying that health and safety policy adequately addresses health and safety needs of employees. However, 26 (32.5%) and 54 (67.5%) of staff indicated 'yes' and 'no,' respectively, revealing that health and safety policy inadequately addresses health and safety needs of employees. The results indicate the opposing views of the two groups of organisational members on the issue. The Medical Superintendent's narration below supports the view of the management of the hospital.

*"The policy is good for all staff including doctors, nurses, administrators, cleaners and everyone who works at the hospital. The policy is there to protect staff from all forms of accidents or health problems associated with the performance of duty. I have not received any resentment from staff about the policy and its practices, and I want to believe that it is serving their interest. You see, no policy is static, and I know the policy will be reviewed from time to time to meet current health and safety needs of staff".*

From the medical superintendent's narration, as compared to the views of management and employees, we speculate that though the policy does not adequately address the health and safety issues of staff, this is not known to the medical superintendent. This outcome refutes the finding from the study by Akpan (2011) that health and safety policy implementation should include, at all levels and at all times, the participation supervision for effectiveness. Management's commitment to the policy implementation is, therefore, questionable.

#### *Staff's Adherence to Safety Work Procedures and Practices*

Data were solicited to evaluate the level of staff adherence to, and practice of health and safety policy. The result is presented in Table 2. A high weighted average score (3.50-5.0) meant overall agreement to a statement while a low weighted average score (1-3.49) meant overall disagreement to a statement.

Table 2: Adherence to safety procedures and practices by Staff

	Statements	SD	D	I	A	SA	WA	P-value
Injection safety	Overall	-	-	-	-	-	4.0420	-

	Label all sharp containers appropriately	0 (0.0%)	5 (6.2%)	8 (10.0%)	47 (58.8%)	20 (25.0%)	4.0250	0.000
	I do not recap when administering an injection	0 (0.0%)	0 (0.0%)	12 (15.0%)	52 (65.0%)	16 (20.0%)	4.0500	0.000
	Dispose of needles and syringes after use	0 (0.0%)	0 (0.0%)	17 (21.3%)	42 (52.5%)	21 (26.2%)	4.0510	0.000
PPEs	<b>Overall</b>	-	-	-	-	-	<b>3.6083</b>	-
	Wearing face protective for every procedure	15 (18.8%)	21 (26.2%)	19 (23.8%)	25 (31.2%)	0 (0.0%)	2.6750	0.001
	Wearing gloves for every procedure	1 (1.2%)	11 (13.8%)	6 (7.5%)	41 (51.2%)	21 (26.2%)	3.8750	0.028
	Wearing a protective gown for every procedure	0 (0.0%)	1 (1.2%)	11 (13.8%)	33 (41.2%)	35 (43.8%)	4.2750	0.029
Hand hygiene	<b>Overall</b>	-	-	-	-	-	<b>3.6625</b>	-
	Washing hands before every procedure	12 (15.0%)	7 (8.8%)	26 (32.5%)	35 (43.7%)	0 (0.0%)	3.0500	0.019
	Washing hands after every procedure	0 (0.0%)	0 (0.0%)	16 (20.0%)	26 (32.5%)	38 (47.5%)	4.2750	0.051
Waste Management	<b>Overall</b>	-	-	-	-	-	<b>3.1458</b>	-
	Disposing of used items into infectious bins for incineration	16 (20.0%)	2 (2.5%)	17 (21.2%)	45 (56.2%)	0 (0.0%)	3.1375	0.175
	Separate bins are used for different waste	4 (5.0%)	19 (23.8%)	27 (33.8%)	30 (37.5%)	0 (0.0%)	3.0375	0.013
	Sorting waste	9 (11.2%)	3 (3.8%)	26 (32.5%)	42 (52.5%)	0 (0.0%)	3.2625	0.000
Putting all Practices together	<b>Grand Total</b>	-	-	-	-	-	<b>3.6147</b>	-

SD=strongly disagree; D=disagree; I=indifferent; A=agree; SA=strongly agree; WA=weighted average; Chi-square statistic is significant at the 0.05 level (*results are based on Fisher's Exact test*)

Respondents disagreed (6.2%), were indifferent (10.0%), agreed (58.8%) and strongly agreed (25.0%) that they label all sharp containers appropriately. The weighted average (WA=4.0250) shows an overall agreement to the statement. Respondents were indifferent (15.0%), agreed (65.0%) and strongly agreed (20.0%) that they do not recap needles when administering an injection to patients. Respondents were indifferent (21.3%), agreed (52.5%) and strongly agreed (26.2%) to the statement "I dispose of needles and syringes after used". Majority of the respondents do not recap when administering injection (WA=4.0500) and dispose of used needles and syringes (WA=4.0510). The staffs' adherence to the labelling of sharp containers ( $p<0.01$ ), posture when administering injection ( $p<0.01$ ) and disposal of used needles and syringes ( $p<0.01$ ) significantly depend on staff orientation on health and safety practices when employed.

Employees strongly disagreed (1.2%), disagreed (13.8%), were indifferent (7.5%), agreed (51.2%) and strongly agreed (26.2%) that they wear gloves for every procedure. With regard to wearing of gowns, 1.2%, 13.8%, 41.2% and 43.8% disagreed, were indifferent, agreed and strongly agreed respectively that they wear gowns for every procedure. The result further shows that 18.8% strongly disagreed, 26.2% disagreed, 23.8% were indifferent, and 31.2% agreed that they wear face protective for every procedure. The result indicates that respondents have not been

wearing face protective (WA=2.6750), but they had been wearing gloves (WA=3.8750) and gowns (WA=4.2750) when attending to patients. The use of personal protective equipment (face protective, gloves and gowns) significantly depends on staff orientation on Health and Safety practices when employed.

From Table 2, 20.0%, 32.5% and 47.5% of the respondents were indifferent, agreed and strongly agreed respectively to the statement “I wash my hands after every procedure”. The Respondents strongly disagreed (15.0%), disagreed (8.8%), were indifferent (32.5%) and agreed (43.7%) they washed hands after every procedure. Staff washed hands after every procedure (WA=4.2750) but did not wash hands before every procedure (WA=3.0500). Washing hands before every procedure ( $p=0.019$ ) significantly depends on staff orientation on health and safety practices, but washing hands after every procedure did not significantly depend on staff orientation on health and safety practices ( $p=0.051$ ).

The result also indicates that 20.0% strongly disagreed, 2.5% disagreed, 21.2% were indifferent and 56.2% agreed that they dispose of used items into infectious bins for incineration. The respondents strongly disagreed (5.0%), disagreed (23.8%), were indifferent (33.8%) and agreed (37.5%) that separate bins are used for different waste. Out of 80 respondents, 11.2%, 3.8%, 32.5%, and 52.5% strongly disagreed, disagreed, were indifferent and agreed respectively that they sorted waste into different categories before disposal. The staff did not adhere to waste sorting practice (WA=3.2625) and waste disposal practice (WA=3.1375) and to use separate bins for different wastes (WA=3.0375), and this suggests that the staff do not adhere to waste management practices in the Hospital (Overall WA=3.1458). Waste sorting ( $p<0.01$ ) and using separate bins for different wastes ( $p=0.013$ ) significantly depend on staff orientation on health and safety employed, but waste disposal did not significantly depend on staff orientation on health and safety practices ( $p=0.175$ ). The Medical Superintendent confirmed the employees’ adherence to most health and safety practices when he narrated that,

*I have observed that staff adhere to practices that they believe they have a direct and immediate effect on them. Staffs are less willing to adhere to health and safety practices like waste disposal, thinking that it is the duty of some group of staff. We are still educating them to see all health and safety practices as something that directly or indirectly affect their health and safety.*

From the analysis above, adherence to Health and Safety practices in the Hospital is encouraging (Grand Total WA=3.6147), although final disposal of waste was a challenge – challenge emanating from their belief that it is someone else’s duty. Regardless, employees adhere to health and safety practices when performing their normal duties. Our finding contradicts the outcome of Guthold et al.’s (2011) finding that compliance with infection prevention and control (IPC) guidelines by health personnel is not very encouraging. IPC referred to the modes of disinfection and sterilisation in facilities, and practices regarding cleaning, healthcare waste management and other aseptic procedures which, fortunately, are practised at the Dunkwa-on-Offin Municipal Hospital.

Hand hygiene is very important in healthcare delivery, but Jumaa (2005) opined that health workers often do not pay much attention to this practice. This is with hand wash before every procedure in hospital as found in the study. Proper hand hygiene reduces the number of potentially infection-causing microorganisms on the hands and decreases the incidence of infection transmission in the health facility. The study indicates that staff adherence to waste management practices is low, an indication that healthcare facilities do not use proper waste disposal methods. The staff of Dunkwa-on-Offin Municipal Hospital did not adhere to any of the waste management practices considered in the study. The non-adherence to waste management practices by the staff is disturbing as the practices are likely to have serious effects including increasing contamination of the soil or groundwater with chemicals or microorganisms, increasing impairment of the immune system, impairment of the development of the nervous system, endocrine system and the reproductive functions. Improper waste disposal also exposes other staff, like labourers and orderlies, to injuries and other infections. These are pointers to the need for management to take proper and regular waste disposal more seriously.

We then wanted to find out the outcome of employees’ non-adherence to health and safety policies and practices in the Dunkwa-on-Offin Municipal Hospital by looking at injuries, sicknesses and absenteeism. It was found that the major causes of injury in the Hospital were needle prick (54.7%), slip (13.2%) and exposure to the chemical (12.6%). Major injuries suffered by the staff were needle stick (54.7%), chemical burns (22.6%) and bruises (15.1%). Most employees had an injury on their fingers (34.0%), hands (17.0%) and feet (15.1%). The findings are consistent with the findings of Odeyemi et al. (2005) and Medubi et al.’s (2006) studies in the healthcare sector. The study further asked the respondents (staff) whether or not the injury led to absenteeism. Out of the 53 staff who experienced an injury, 21 (39.6%) were absent from work, but 32 (60.4%) were able to continue work without absenteeism. Most of the injured were absent for a day per injury (47.6%), and the remaining were absent for between 1-3 days per injury (33.3%) and between 4-14 days per injury (19.1%). The quantitative result was complemented by the following narration by the Medical Superintendent.

The hospital has recorded some minor injuries, and most of the injured staff were nurses and midwives. Some of them asked for leave, and they were granted, but because the injuries were not too severe, most of them were given a maximum of one-week sick leave.

This finding confirms the outcomes of many earlier studies. According to EUROFOUND (1997), Ill-health and infirmity are believed to be a predominant factor underlying workers’ propensity to take days off. Much of the absence is short-term and is attributed to injuries, which are major problems for organisations intending to control absenteeism (Oppong, 2017). The author revealed that such injuries include those resulting from accidents and could bring about many sick leave days.

*Impact of Non-Adherence to Health and Safety Practices on Absenteeism*

At this stage, we assessed the impact of the outcome of non-adherence on employee work attendance in the Hospital, using Pearson’s correlation Coefficient to establish the significance of the relationship between absenteeism and adherence to health and safety practices (see Table 3) and multiple regression to estimate the relative impact of each health and safety practice on absenteeism (see Table 4).

Table 3: Pearson’s Correlation Coefficient Matrix

	Absenteeism	Injection Safety	Personal Protective Equipment	Handing Hygiene	Waste Management
Absenteeism	1.000	-0.814*	-0.859*	-0.778*	-0.824*
Injection Safety		1.000	0.854*	0.799*	0.790*
Personal Protective Equipment			1.000	0.916*	0.926*
Hand Hygiene				1.000	0.856*
Waste Management					1.000

\*Correlation is significant at the 0.05 level.

From Table 3, adherence to injection safety practices ( $R = -0.814$ ), personal protection practices ( $R = -0.859$ ), hand hygiene ( $R = -0.778$ ) and waste management ( $R = -0.824$ ) significantly reduce staff absenteeism. This means, if staff adhere to health and safety practices, absenteeism will significantly reduce to improve productivity in healthcare delivery. On the other hand, non-adherence to health and safety practices would increase absenteeism. From Table 3, with a correlation coefficient of -0.814, the lower the injection safety in hospitals, the higher the rate of patient absenteeism. Also, a poor or lack of usage of personal protective equipment will lead to a high rate of absenteeism, given the correlation coefficient of -0.859. Poor hand hygiene (-0.778) and poor waste management (-0.824) will lead to a high rate of absenteeism in the health facilities. However, adequate personal protective equipment (0.854), proper hand hygiene (0.799), and ethical waste management (0.790) will guarantee injection safety to patients. Also, adequate personal protective equipment to medical practitioners means proper hand hygiene (0.916) and ethical waste management (0.926). There is also a significant relationship between waste management and hand hygiene (0.856).

Table 4: Multiple Regression result

Model	Unstandardised Coefficient		Standardized Coefficient	t-statistic	p-value	Decision
	B	Std. Error	$\beta$			
Constant	5.374	0.319	-	16.866	0.000	supported
Injection safety	-0.238	0.083	-0.306	-2.880	0.005	supported
Personal protective equipment	-0.489	0.200	-0.502	-2.442	0.017	supported
Hand hygiene	0.094	0.130	0.101	0.728	0.469	Not supported
Waste management	-0.267	0.193	-0.204	-1.389	0.169	Not supported
<b>F(80)=62.691’ p=0.000; R<sup>2</sup>=0.770, Adj R<sup>2</sup>=0.757</b>						

Multiple Regression is significant at 0.05 level.

Based on Table 4, injection safety ( $\beta = -0.238$ ,  $p = 0.005$ ), personal protective equipment ( $\beta = -0.489$ ,  $p = 0.017$ ), and waste management ( $\beta = -0.267$ ,  $p = 0.169$ ) were found to negatively influence absenteeism. This means that the

less safe patients feel they are in a health facility, the higher the likelihood of absenteeism in hospitals. Also, when health professionals do not use the appropriate personal protective equipment to assure the safety of patients, the patients are likely not to return to the same hospital again. Finally, when the items that are used in treating patients are not disposed of well, patients might feel unsafe, and this would lead to a high rate of absenteeism. However, hand hygiene ( $\beta = 0.094$ ,  $p = 0.130$ ) was also found to influence absenteeism positively. This means that when there are proper handwashing protocols in place, the rate of absenteeism would also increase, but this is not a significant factor to cause absenteeism.

In conclusion, personal protection practices have the most significant impact on absenteeism in Dunkwa-on-offin Municipal Hospital. However, hand hygiene and waste management practices' adherence did not significantly reduce absenteeism. The following are key findings of the study.

- On health and safety practices, it was observed that information on health and safety hazards and protective clothing had been provided. Relating to this, staff are encouraged to report work-related diseases and injuries. Employees received health and safety orientation, which significantly depended on departments, but health and safety training cut across departments. However, the hospital did not have a health and safety committee to oversee the policy and its implementation.
- With regard to adherence to health and safety practices, staff adhered to injection safety, including hand hygiene, and use of PPEs, but there was a problem with safe disposal of waste. Relatedly, adherence to injection inspection and the wearing of PPEs significantly depended on staff orientation on health and safety, but adherence to hand hygiene and waste disposal did not depend on staff orientation.
- Staff had experienced injuries of varied types and degrees, with the three major causes being needle stick, chemical burns and bruises due to non-adherence of health and safety practices.
- Although injuries caused absenteeism, not all did so. Non-adherence to injection safety practices and personal protection practices significantly increased absenteeism, while non-adherence of hand hygiene and waste management practices did not significantly increase absenteeism.

### Conclusion

The study concludes that though there are health and policy guidelines by the Ministry of Health (2010) at the hospital, some employees still sustain injuries, some of which lead to absenteeism; while some practices reduce the absenteeism rate, others do not. So far, the hospital has shown a commitment to the implementation of the policy through supplies of safety equipment, staff orientation, training, and supervision, therefore, revealing a significant level of adherence and implementation of almost all the health and safety practices.

Again, adherence to the Health and Safety policy and practices is crucial to the effective running of a health facility as it does not only prevent sicknesses and injuries and their resultant absenteeism but also improves on the hospital's healthcare delivery and safety of patients and other stakeholders. In this vein, we have succeeded, to a larger extent, in our attempt to evaluate the influence of health and safety practices on employee attendance at the Dunkwa-on-Offin Municipal Hospital in Ghana. The outcomes could serve as a guide for the implementation of, and adherence to health and safety policies and practices in the Ghana Health Service.

Regardless of the level of success of our investigation, we found one major challenge relating to a lack of adequate supervision of the health and safety implementation in the hospital. This is partly attributed to the absence of a safety committee. We, therefore, recommend that the Government of Ghana, through the Ministry of Health and its appropriate agencies, should step up its supervisory and monitoring roles to ensure health and safety compliance in all health facilities in the country for quality and sustainable healthcare delivery, while reducing health and safety-related injuries and deaths. Formation of a safety committee will also help to manage the policy implementation, supervision and evaluation challenges.

## References

- Adams M., Burton J., Butcher F., Graham S., McLeod A., Rajan R., Whatman R., Bridge M., Hill R., Johri R. (2002). *Aftermath: The Social and Economic Consequences of Workplace Injury and Illness*, Department of Labour and the Accident Compensation Corporation. Wellington New Zealand.
- Akpan, E. I., (2011). "Effective Safety and Health Management Policy for Improved Performance of Organisations in Africa", *International Journal of Business and Management*, 6 (3),159-165.
- Alberta. S. (2006). Building an effective health and safety management. [Electronic version] Retrieved from: <http://employment.alberta.ca/documents/WHS/WHS-PS-building.pdf>
- Amponsah-Tawiah K. & Dartey- Baah, K. (2011). "Occupational Health and Safety: Key Issues and Concerns In Ghana", *International Journal of Business and Social Science*, 2(14),119-126.
- Anthum, K.S. & Innstrand, S.T. (2016). The predictive value of job demands and resources on the meaning of work and organizational commitment across different age groups in the higher education sector. *Journal of Higher Education Policy Management*, 38(1), 53-67.
- Bevan, S. (2010). *The Business Case for Employees Health and Wellbeing: A report prepared for Investors in People UK*, The Work Foundation, No. 290003.
- Bloom, D. E., & Canning, D. (2000). "The Health and Wealth of Nations", *Science Compass*, 287(1), 1207-1209.
- Bolarinwa, O. A., Salaudeen, A. G., Aderibigbe, S. A. Musa, O. (2012). "Injection safety practices among primary health care workers in Ilorin, Kwara state of Nigeria", *Health Science Journal*, 6(3), 496-508.
- Boorman, S. (2009), *NHIS Health and wellbeing - Final Report*, London Department of Health.
- Chambers, C.E., Fetterly, K.A., Holzer, R., Lin, P.P., Blankenship, J.C., Balter, S. & Laskey, W.K. (2011). Radiation Safety Program for the Cardia Catheterization Laboratory. *Catheterization and Cardiovascular Interventions*, 77(1), 546 – 556.
- Curtis V., Biran A., Deverell. Huges C., Bellamy K., & Drasar B., (2003). "Hygiene in the home: relating bugs and behaviour". *Social Science Med.*,57(1), 657 -672.
- Daly, A.D., Nxumalo M.P., & Biellik, R.J. (2004), "An assessment of safe injection practices in health facilities in Swaziland", *South African Medicine Journal*, 94(3). 194-197.
- European Foundation for the Improvement of Living and Working Conditions (EUROFOUND) (1997). *Preventing Absenteeism at the Workplace: Research Summary*. Office for Official Publications of the European Communities: Luxembourg.
- Gomez, B., & Jones, J. P. (2010). *Research Methods in Geography: A Critical Introduction*. John Wiley & Sons, Ltd., UK.
- Guthold, R., Louazini, S.A., Riley, L.M., Cowan, M.J., Bovet, P., Damasceno, A., Sambo, B.H., Tesfaye, F. & Armstrong, T.P. (2011), Physical activity in 22 African countries: Results from the world Health Organization STEPwise approach to chronic disease risk factor surveillance. *American Journal of Preventive Medicine*, 41(1), 52-60.
- Health and Safety Executive (HSE) (2009). Self-reported work-related illness and workplace injuries in 2008-09: Results from the Labour Force Survey. (Electronic Version), Retrieved from: <http://www.hse.gov.uk/statistics>,
- Hughes, P., & Ferrelt, E. (2008). *Introduction to Health and Safety In Construction Industry* (3rd ed.). Butterworth-Heinemann, Imprint of Elsevier, USA.
- Joensuu, M. and Lindstrom, K. (2003), *Sickness absence and stress factors at work*. Helsinki: Finnish Institute of Occupational Health.
- Jumaa, P. A. (2005), "Hand Hygiene: simple and complex", *International Journal of Infectious Diseases*, 9(1), 3 – 4.
- Labour Act of Ghana (2003), Act 651, Ghana Publishing Corporation, Accra.
- Ma, Q. & Yuan, J. (2009). "Exploratory study on safety climate in Chinese manufacturing enterprises. (Electronic version)", *Safety Science*, 47(1), 1043–1046.
- Medubi, S.A., Akande, T.M. & Osagbemi, G.K. (2006), "Awareness and pattern of needlestick injury among health workers at University Teaching Hospital Ilorin, Nigeria", *AJCEM*. 7(3), 183-188.
- Milgate, N., Innes, E. & O'Loughlin, K. (2002). Examining the effectiveness of health and safety committees and representatives: A review. *Work*, 19(3), 281-290.
- Ministry of Health (2009). Policy and Guidelines for Infection Prevention and Control in Healthcare Facilities.
- Ministry of Health (2010). Occupational Health and Safety Policy and Guidelines for the Health Sector.
- Moro, P.L, Moore, A., Balcacer, P., Montero, A., Diaz, D., Gómez, V.,... & Musa I. O. (2007). "Injection Safety Practice among Health Workers in Static Immunisation Centres in an Urban Community of Nigeria", *Niger Postgraduate Medicine Journal*, 22(3), 162-167.
- Niu, S. (2010). "ILO List of occupational diseases and health care workers", *African Newsletter on occupational health and safety*, 20(1), 4-9.

- Occupational Safety and Health Administration (2011). Personal Protective Equipment (PPE) Reduces Exposure to Bloodborne Pathogens, Retrieved from: <http://www.osha.gov>
- Occupational Safety and Health Administration (2013). How Safe Is Your Hospital for Workers? Learn More and Take Action. *Facts about hospital worker safety*. Retrieved from: [www.osha.gov/dsg/hospitals](http://www.osha.gov/dsg/hospitals).
- Odeyemi K. A., Onifade K. A. & Onifade, E.U. (2005). "Needle Stick/Sharp injuries among Doctors and Nurses at the Lagos University Teaching Hospital", *NQJHM*, 15(2), 50-54.
- Office for National Statistics (2014). Full report: Sickness absence in the labour market, February 2014. Available at [www.ons.gov.uk/ons/dcp171776\\_353899.pdf](http://www.ons.gov.uk/ons/dcp171776_353899.pdf).
- Oppong, N.Y. (2017). *Mastering workplace disciplinary interviewing: a complete guide*. New York: Nova Science Publishers, Inc.
- Pink, S. Morgan, J. & Dainty, A. (2014). The safe land: gels, water, gloves and the materiality of tactile knowing. *Journal of Material Culture*, 19(4), 425-442.
- Pouliakas, K., & Theodossiou, I. (2010). An Inquiry into the Theory, Causes and Consequences of Monitoring Indicators of Health and Safety at Work, *Discussion Paper Series*, 4734
- Robson, L., Clarke, J., Cullen, K., Bielecky, A., Severin, C., Bigelow, P., & Mahood, Q., (2005). "The effectiveness of occupational health and safety management systems", *Environment and Health*, 3(1), 15-28.
- Saunders, M., Lewis P. & Thornhill, A. (2007). *Research methods for business students (4<sup>th</sup> ed.)*. New Jersey: Prentice Hall.
- The Manufacturers' Organisation (2015). Sickness absence survey 2015. Available at [http://www.jelfgroup.com/cms\\_files/doc](http://www.jelfgroup.com/cms_files/doc).
- Woock, C. (2009), "The earnings losses of injured men: Reported and unreported injuries", *Industrial Relations*, 48(4), 610-628.