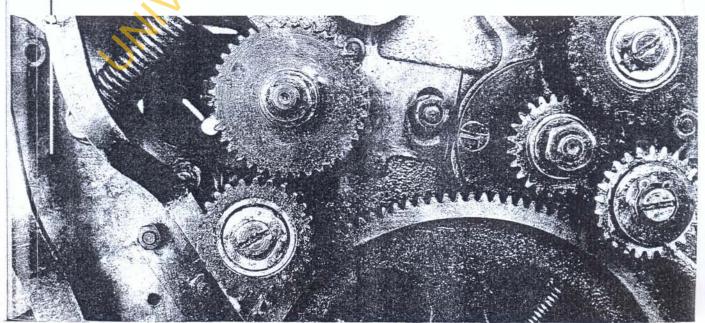


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EDHORAD

The long, tragic career of Exxon Valdez finally comes to an end

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In March 2012, the ship Oriental Nicety was bought by the Hong Kong-based company Best Oasis, a subsidiary of Indian-based Priya Blue Industries, for about US\$16m. Priya Blue is a company engaged in ship scrapping and marine salvage. The ship was taken to the coastal town of Alang, on the Gulf of Cambay, Gujarat, India, which is the hub of India's ship-breaking industry. There, the intention was to dismantle the ship, remove salvageable material for reuse and discard the rest.

The Oriental Nicety is another name for the Exxon Valdez, a large oil tanker built in the San Diego dockyards in 1986 to transport oil sent from the Prudhoe Bay Field in Northern Alaskan oil field to its terminal at Port Valdez in Alaska, and tankered to oil refineries on the west coast of the USA.

The Exxon Valdez spill

In March 1989, after leaving the narrows of Prince William Sound, the tanker collided with a low-lying reef (Bligh Reef), opening its hull and rupturing a number of its tanks, spilling a large amount of oil into an area of outstanding natural beauty. Estimates of the amount of oil spilled vary, but about 250,000 to 750,000 barrels (40,000–120,000 m³) were spilled. The oil eventually spread 470 miles (750 km) south-westwards along the Alaskan coast, oiling a long area of coast.

In a few short weeks, large areas of the environment were damaged, with about 40,000 birds and thousands of marine animals killed, and many local fishing industries badly affected economically. The subsequent clean-up took three years and cost ExxonMobil about US\$2.2b, with much of this money used to employ 10,000 people to clean up oil-fouled beaches; although after the first year, only 3% of the oiled beaches had been cleaned.

However, other direct costs, and the cost of indirect environmental, economic and human impacts remain poorly costed. Over 20 years on, substantial amounts of oil remain in sediments, the herring population has yet to recover to a fishable level, and populations of sea otters, sea ducks and killer whales remain impacted by the spill.

For ExxonMobil, the spill was a public relations disaster. Eventually, ExxonMobil faced litigation from 38,000 fishermen and other litigants. In 1994, an Anchorage District Court awarded US\$287m to those litigants in compensatory damages. A further US\$5b was awarded in punitive damages. This was equivalent to a year's profit for ExxonMobil, but this was reduced to US\$4b in 2002 by the US Circuit



Court of Appeals, and to US\$2.5b in 2006. Most recently, in 2008, the US Supreme Court reduced the level of punitive damages to US\$508m (plus US\$480m in interest).

Once the unspilled oil had been lightered off the Exxon Valdez, the ship was towed to the nearby Naked Island, where temporary repairs were made. The ship was then towed to the San Diego dockyard by June 1989, and extensive repairs were made. The repaired ship was forbidden by law to operate in Alaska, where only double hulled ships were then allowed.

1989-2008: Europe, the Middle East and Asia

The ship became part of the fleet of SeaRiver Maritime (an ExxonMobil subsidiary) and was renamed the Exxon Mediterranean (1990–93), SeaRiver Mediterranean or S/R Mediterranean (1993–2005), and by 2005, just the Mediterranean (2005–08). The ship re-entered service in 1990, loading oil in the Persian Gulf, serving in Europe, the Middle East, and Asia. Changes to European Union regulations in 2005 prevented single hulled oil tankers from operating in European waters, and the ship was transferred to service in East Asia thereafter.

2008: East Asia service

In 2008, the ship was sold by SeaRiver Maritime to Hong Kong Bloom Shipping, a Hong Kong-based shipping company. At Guangzhou in China, it was refitted, being converted into a bulk ore carrier and renamed the Dong Fang Ocean, where it traded between China and Brazil.

In November 2010, the Dong Fang Ocean collided with the bulk cargo ship, the MV Aili, off Chengshan in the South China Sea, suffered ballast tank damage and was towed to Longyan Port in Shandong, China for repairs.

In 2011, still with Hong Kong Bloom, the ship was renamed the Oriental Nicety.

2012: To scrap

As noted above, in March 2012, the ship was bought by the ship-breaking company (Priya Blue), which planned to take the ship to the coastal town of Alang in Gujarat, India, presently the largest ship-breaking yard in the world. As well as India, other nations involved in ship-breaking include Bangladesh, China and Pakistan.

Ships are large mobile structures made of steel. At the end of their active lives, they are a sought after source of ferrous materials. At Alang, ships are normally stripped, lightened, and then beached because of unusual sheltered marine conditions such as a gently sloping and firm seabed and availability of high tides. This industry provides around 30,000 jobs and millions of tons of ferrous scrap. About 6,000 ships have been broken up for scrap on the Alang beaches since the early 1980s.

The former Exxon Valdez was going to be one of hundreds of ships from all over the world to find their resting place at Alang each year. However, the breakup was challenged in the Indian courts by an environmental group. Issues of hazardous oil spills from old ships were identified, and other social, health, safety and environmental concerns exist.

Following a submission by an Indian environmental group that the ship may contain toxic materials and that it may have breached the Basel Convention for the Transboundary Transportation of Hazardous Wastes, on 9 May 2012, in Ahmedabad, the Indian Supreme Court banned the ship from entering India, requiring the ship to be decontaminated before it was broken up. The court issued notices to the Gujarat Government and the Gujarat Maritime Board (GMB) asking for information on steps it intended to take regarding the ship. During this period, the ship was anchored outside Indian waters in the Gulf of Cambay, where Alang is located, until 25 June 2012.

GMB officials required a desk review, in which the ship captain was required to disclose the ship's inventory. This material was checked by the Gujarat Pollution Control Board and Customs, and when found to be within permissible limits, the ship was allowed to anchor inside the anchorage area at Alang on 30 June 2012, so it could be inspected. In July 2012, a team comprising officials from the Gujarat Pollution Control Board, Gujarat Maritime Board, customs department and explosives and atomic energy department inspected the vessel. The team did not find anything hazardous or controversial, and on 30 July 2012 permission was granted by the Supreme Court of India for the vessel to be dismantled at Alang.

After an eventful couple of days where the vessel's anchor got stuck in the mud two nautical miles off Alang and missed the high tide, the vessel was eventually beached between two chemical tankers at Alang during the peak of the 9.4 m, 4:30 pm high tide on Thursday 2 August 2012. At 4:05 pm, the vessel dropped its anchor, never to sail again, turned its engines off for the last time, and its 15 crew walked ashore soon afterwards.

At 27 years, the ship is not significantly aged for a tanker/bulk ore carrier, but it may still have residual damage from the 1989 spill and the 2010 collision. Now that the ship is being scrapped at Alang, a sad chapter of a maritime disaster will finally close.

MINERS

FEATURE ARTICLE

Industrial safety practices as determinants of employees' performance and wellbeing at selected industries in Port-Harcourt, River State, Nigeria

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Abstract

It makes good business sense to promote industrial safety issues and programs at the workplace in order to enhance workers' performance and wellbeing. It is against this background that this study looked at the involvement of industrial safety practices on employees' performance and wellbeing. The descriptive survey research design was adopted for the study. Three hundred and twenty respondents were randomly selected from five industries that had records of safety practices. Six questionnaires were used to collect data and the analyses were done at $\alpha=0.05$ level. Findings showed that staff training, recruitment of skilled personnel, evaluation of safety performance and rewards/safety incentives correlated significantly with performance and wellbeing, but selection of personnel and evaluation of safety performance did not correlate with wellbeing significantly. It was recommended that social workers should work with both employers and employees to see to the explanation of causative mechanism for injuries rather than proximal causes.

Keywords: industrial safety practices, employees, performance, wellbeing, industries.

Introduction

Industrialisation has brought about many positive changes which have helped to improve the quality and standard of living; however, the negative effect of industrial accidents which are attributed to unsafe industrial practices at the workplace have come along with it and cannot be overemphasised. The issue of industrial safety has been marked by a shift from compensation to prevention. Therefore, industrial safety has become one of the most important factors that any organisation, large or small, must consider in its operations by both employer and employees.



It is important to acknowledge that employees do not want to be injured at work and they rarely knowingly act in an unsafe manner of their own volition. The unsafe acts exhibited by employees are usually symptoms of systemic problems such as insufficient skill-based training, work pressures or excessive demands from the task (Mol, 2002). Furthermore, health and safety of employees is more than just a legal requirement, it is good business sense because a safe and healthy workplace will give rise to a healthy workforce with a higher morale and performance which ultimately leads to improved productivity (Manoharan, 2004). Psychologically, healthy workplaces put a premium on workers' safety and wellbeing and are rewarded for their diligence with reduced absenteeism, lower injury rates, reduced cost and lost-time due to injury (Newman and Grigg, 2006).

The absence of training for employees on attitudes and beliefs towards safety and non-inclusion of employee safety performance evaluation have been found to be major causes for low performance in work organisations. Training interventions on supervisors and employees have been found to be associated with reduced lost-time, injuries and injury costs (DeJoy, Searcy, Murphy and Gershon, 2000; Harvey, Bolam, Gregory and Erdos, 2001; Harshberger and Rose, 1991; Cooper, 2001). Zohar (2002), also found that training of both supervisors and employees on industrial safety practices has resulted in a decrease in minor-injury rates.

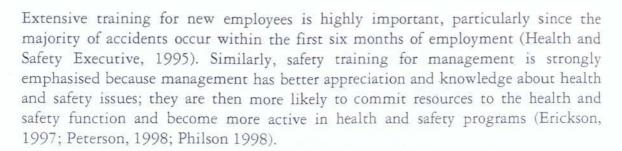
It should be noted that no work environment could possibly be completely risk-free, therefore, the enforcement of safety practices will go a long way to minimise the risk in the work environment. A workplace is said to be safe only when the worker feels he enjoys a total (or some) level of freedom from injury at the workplace (Yuvaraj, 2004). An employee will only be motivated to perform at his/her best when he/she feels a sense of safety and knows that he/she is not at risk.

Literature review

This paper reviews some industrial safety practices and their impact on workers' wellbeing and performance.

Safety training

Safety training provides new employees during orientation, prior to reassignment or procedural changes, with a program of ongoing education. Some programs focus on initial training of all new and transferred employees, others focus on training those employees facing dangerous situations, or who are repeatedly involved in accidents that lead to injury. So training is one of the ways in human resource practices to improve employee safety, improve workers wellbeing, reduce man-hour loss and cost of production. Safety training helps to establish a safety culture in which employees themselves help promote proper safety procedures while on the job. Training of employees will help them understand both the importance of safety to the organisation, as well as safe work procedures that will prevent injuries and thus ensure their wellbeing and improve their job performance. Training impacts employees by improving their skills and abilities, as well as communicating what is important. Thus, the employee's view of industrial safety is changed through the practice of simply offering training (Lauver and Lester, 2007).



Recruitment of skilled personnel

The selection process offers organisations the opportunity to socialise new employees in the organisation's safety rules (Lauver and Lester, 2007). Thus, selection is a primary way through which managers can convey to applicants what values are emphasised within the organisation or industry. Some jobs are noted as needing minimum physical standards, therefore, selection practices that screen for physical ability prevent employees from performing duties beyond their physical capabilities or identifying areas where employees need additional strength and conditioning training to ensure job performance and potentially reduce injuries (Sothmann, 2005). Anderson and Ostroff (1997) stated that selection activities provide anticipatory socialisation, offer information, influence candidate beliefs and affect candidate behaviour. Therefore, if an organisation selects for safety and discusses safety at the initial interview process, it signals to new employees the importance that the organisation places on safety. The socialisation that occurs during preliminary discussions between employers and applicants leads to a higher likelihood of employee's recognising, identifying and communicating potential safety issues to the organisation (Lauver and Lester, 2007).

Experience of skilled personnel is a factor in the reduction of occurrence of injury among employees because an employee's risk on a job is reduced overtime (Curry, Quinn, Atkins and Carison, 2004). An inexperienced employee may sustain an injury due to lack of knowledge and information, whereas an experienced employee may simply take precautions against risks.

Evaluation of safety performance

A number of measurements which can be used as indicators or predictors of safety performance include accident statistics, safety audit scores, counting of near misses, behavioural measurements, safety inspections, accident-free time, accident cost and attitudes (Budworth, 1996). Each measurement has its own advantages and disadvantages and when designing a measurement system, it is important to recognise that there is no one ideal measure of safety performance and thus no one measure should be used to the exclusion of all others.

Every member of an organisation's or industry's management (including CEOs and supervisors), should have specific written safety responsibilities, with specific objectives established to meet the responsibilities included in each individual's overall performance (Ronald, 1998). This practice is to guarantee the survival of both the organisation and the employees. Bailey (1993) emphasised the importance of using employee perception surveys and safety audits to measure and track safety performance.



Rewards/safety incentives

The purpose of tying rewards to safety is to raise employees' awareness of safety issues as well as emphasise the importance of safety behaviours within the organisation. Direct, consistent links between behaving safe and receiving rewards from the company reinforce safe behaviours and increase the perceived importance of safety within the organisation (Lauver and Lester, 2007). Safety incentives and motivational programs lead to improved safety performance in any industry which in turn enhances the wellbeing and improves job performance of employees (Ronald, 1998). Programs utilised by different industries to promote safety practices include awards and prizes for groups or individuals that reach pre-stated safety goals, keep tallies of accident-free hours, include safety performance in annual job performance appraisals (Ronald, 1998), goal-setting and feedback. Goal-setting and performance feedback have strong positive correlations to safety performance in both employees (to ensure their wellbeing and improve their performance) and management (Komaki, Heinzman and Lawson, 1980; Ray, Bishop and Wang, 1997; Gregory, 1996).

Group compensation or reward is also used to improve the link between teamwork and safety practices. Since groups operate interdependently and perform tasks that affect others within the organisation, the interdependence occurs in safety too when individuals actively care about each other, reiterating safety values; hence, employees behave more safely with group safety rewards, since their actions affect several individuals (Bartol and Hagmann, 1992; Guzzo and Dickson, 1996; Hoffman and Stetzer, 1998; Lauver, 2007).

Employee wellbeing

Employee wellbeing is defined as the overall quality of an employee's experience and functioning at work. This is a combination of three core dimensions of wellbeing in an individual's work-life which include psychological, physical and social. Physical wellbeing has to do with the bodily or physical health of the employee. Physical health includes overall health, nourishment, shelter, healthcare, clothing, mobility and energy/stamina. Organisational researchers have shown the link between work and employee physical health in three ways: work is a potential source of injury or disease (Danna and Griffin, 1999); work can be a source of stress (Karasek and Theorell, 1990); and work is a source of benefits that allow, directly and indirectly, for the purchase of healthcare services (Adler, Boyce, Chesney, Folkman and Syme, 1993).

Psychological wellbeing includes the hedonic and eudaimonic components (Ryan and Deci, 2001). The hedonic component deals with subjective experiences of pleasure or the balance of positive and negative thoughts and feelings in an individual's judgement. In organisations, job satisfaction (hedonic approach) is defined in terms of employees' subjective judgement about their work situations (Weiss, 2002). The eudaimonic component of psychological wellbeing deals with fulfilment and the realisation of human potential (Grant et al, 2007). So in an organisation where industrial safety practices occur, the hedonic and eudaimonic components of workers are guaranteed.

Social wellbeing refers to the quality of one's relationships with other people and communities including employees (Bradbury and Lichtenstein, 2000). Unlike

psychological and physical wellbeing which are properties of individual employees, social wellbeing is in terms of trust, social support, reciprocity, leader-member exchange, cooperation, coordination and integration (Adler and Kwon, 2002; Gerstner and Day, 1997; Kramer, 1999), hence the need for proper industrial safety practices.

Employee performance

Attitudes drive behaviours and performance, thus, attitudes such as apathy, complacency, hostility, rebelliousness and over-confidence which may develop over time from poor working conditions or unsafe conditions could potentially lead to a decrease in employee performance (Gregory, 1996; Kelley, 1996; Simon, 1996; Krause, 1997; Peterson, 1997). The potential of increasing accident rates through the aforementioned attitudes could also affect the reporting of injuries or even the length of time required for recovery from an injury and consequently affect the job performance of such an employee. Organisations and industries should focus on ways to improve their working environment and workplace so as to encourage positive attitudes and relationships which would in turn improve employee performance (Ronald, 1998).

One way in which employers can improve employee morale and overall working environment which would in turn improve and enhance employee performance is through trust and open communication. Lack of trust and open communication are the primary barriers to an accident-free culture (Simon, 1996). Therefore, the key to a successful safety program (which would boost employee performance) is building a relationship based on trust and open communication between management and workers. When open communication is not encouraged, employees often complain to each other about hazardous conditions while never informing anyone with authority. This leads to morale problems, safety hazards and slow production. Thus, when employees feel comfortable reporting accidents, hazards or personal problems without fear of retaliation, problems will likely be more quickly identified and corrected (Philson, 1998), leading to effective performance and increased productivity.

Objective of the study

The health, wellbeing and safety of employees in an organisation are fundamental to the survival and success of the organisation. A variety of resources and practices that ensure industrial safety for employees which is needed to help them achieve a balanced state of wellbeing must be provided. It is against the foregoing that the study looked at safety practices in selected industries in Port-Harcourt, to ascertain the extent to which these practices are facilitating employees' performance and wellbeing. Two research questions are raised:

- 1. What are the joint and relative contributions of safety training, selection/recruitment of skilled personnel, evaluation of safety performance and reward/safety incentives to workers' performance?
- 2. What are the joint and relative contributions of safety training, selection/recruitment of skilled personnel, evaluation of safety performance and reward/safety incentives to workers' wellbeing?



Methodology

The research adopted the use of the descriptive survey research design. The population for the study consisted of all the employees in different departments (Administrative Managers, Human Resource Managers, Safety Officers and Technical Staff) in industries in Port-Harcourt, Rivers State. This population was studied because Administrative Managers and Human Resource Managers are the policy makers in the organisations, Safety Officers are the implementer sand also benefactors from the practice of safety practices and Technical Staff are mostly the employees who operate under the policies. Five industries, where industrial safety practices are part of policy thrust, were randomly selected in Port-Harcourt, namely: Shell Petroleum Development Corporation (SPDC), Multimesh Communication Limited, DSI Integrated Services Limited, African Oil Field Services and Total Nigeria Ltd. A sample size of 80 respondents, spanning different departments, were selected from each industry. Of these 80 respondents, 10 were Administrative Managers, 10 were Human Resource Managers, 30 were Safety Officers and 30 were Technical Staff. A total of four hundred (400) respondents were selected for the study. Six research instruments (Questionnaires) with an adapted four-point rating scale format of Strongly Agree (SA) - 4, Agree (A) - 3, Strongly Disagree (SD) - 2, Disagree (D) - 1, were used for data collection. The questionnaires were adapted from (a) Fujishiro, (2005), "Fairness at Work: its impact on employee well-being"; (b) U.S. Office of Government Ethics (OGE), 2008, "Annual Employee Survey results"; (c) Hall (2009), "Employee Health and Safety Survey results-March 2009"; (d) The work foundation (2006), "Work organisation and wellbeing. Draft Questionnaire". The adapted questionnaires were re-validated and their reliabilities were obtained through a testretest method that spanned over two weeks.

Detail on methodology:

- a. Safety Training Questionnaire. This consisted of 10 adapted items from the aforementioned scales. The adapted scale yielded a Cronbach value of 0.92.
- b. Recruitment of Skilled Personnel Questionnaire. This consisted of 10 adapted items from the aforementioned scales. The adapted scale yielded Cronbach value of 0.75.
- c. Evaluation of Safety Performance Questionnaire. This consisted of 10 adapted items from the aforementioned scales. The adapted scale yielded Cronbach value of 0.85.
- d. Rewards and Safety Incentives Questionnaire. This consisted of 10 adapted items from the aforementioned scales. The adapted scale yielded Cronbach value of 0.78.
- e. Employee wellbeing Questionnaire. This consisted of eight adapted items from the aforementioned scales. The adapted scale yielded Cronbach value of 0.86.
- f. Employee Performance Questionnaire. This consisted of nine adapted items from the aforementioned scales. The adapted scale yielded Cronbach value of 0.85.

Data collection: Of the four hundred (400) questionnaires administered, three hundred and twenty (320) were properly filled and found useable for the research. The

method of statistical analysis used was the Multiple Regression Analysis at 0.05 level of significance.

Results

Research Question 1: What are the joint and relative contributions of safety training, selection/recruitment of skilled personnel, evaluation of safety performance and rewards/safety incentives to workers' performance?

Table 1

Variables	F-Ratio	R	R ²	Adj.R ²	β	t	P
Safety training					.276	5.258	.000
Selection of skilled personnel					.184	3,603	.000
Evaluation of safety performance	48.556	.618	.381	.374	.176	3.152	.002
Rewards/Safety incentive					.208	4.170	.000

From Table 1 above, there is significant joint effect of safety training, selection/recruitment of skilled personnel, evaluation of safety performance, rewards/safety incentives on employee performance ($F_{(4,315)}=48.556$; $R=.681\ R^2=.381$; Adj. $R^2=.374$; P<.05). About 38% of the variation was accounted for by the independent variables while the remaining 62% was not due to chance. The relative effects of each independent variable showed that safety training contributed ($\beta=.276$; t=5.258; p<.05), selection/recruitment of skilled personnel contributed ($\beta=.184$; t=3.603; p<.05), evaluation of safety performance contributed ($\beta=.176$; t=3.152; p<.05) and rewards/safety incentives contributed ($\beta=.208$; t=.4.170; p<.05).

Research Question 2: What are the joint and relative contributions of safety training, selection/recruitment of skilled personnel, evaluation of safety performance and reward/safety incentives programmes to workers' wellbeing?

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Table 2

Variables	F-Ratio	R	R ²	Adj.R ²	β	t	Р
Safety training	33.339	.545	.297	.289	.256	4.584	.000
Selection of skilled personnel					.062	1.131	.259
Evaluation of safety performance					.100	1.691	.092
Rewards/Safety incentive					.310	5.823	.000

From Table 2 above, there is significant joint effect of safety training, selection/recruitment of skilled personnel, evaluation of safety performance, rewards/safety incentives on employee wellbeing ($F_{(4,315)} = 33.339$; R = .545; $R^2 = .297$; Adj. $R^2 = .289$; P < .05). About 30% of the variation was accounted for by the independent variables while the remaining 70% was not due to chance. The relative effects of each independent variable showed that safety training contributed ($\beta = .256$; t = 4.584; p < .05), selection/recruitment of skilled personnel contributed ($\beta = .062$; t = 1.131; p > .05), evaluation of safety performance contributed ($\beta = .100$; t = 1.691; p > .05) and rewards/safety incentives contributed ($\beta = .310$; t = 5.823; p < .05).

Discussion of findings

From Table 1 above, it is observed that safety training, recruitment of skilled personnel, evaluation of safety performance and rewards/safety incentives had influence on employee performance at the workplace. Employees will perform better in their job when they have access to the safety training needed in order to work safely. Reduction in the number of accidents and injuries in the workplace as a result of safety training will enable employees perform better and more efficiently in their jobs. Without an effective safety training program, maximum performance of employees in their job will be hampered due to frequent occurrence of accidents causing injuries that would incapacitate the employee and lead to loss of several working hours. This affirms the finding of Dejoy et al, 2002; Harvey et al, 2001 and Zohar, 2002, that when employees are well-trained with regards to safety precautions, rules and procedures, their safety record improves and performance improves. Furthermore, recruitment of skilled personnel assures maximum performance of employees in safety and general performance without getting injured in the workplace. The selection of applicants or hiring of employees with increased knowledge of safety, based on their past safety performance and experience, and asking questions specifically regarding safety in the interview, has a positive association with organisational performance tied to safety.

Evaluation of safety performance has made employees put in more effort in performing better with respect to safety as well as productivity. In industries where safety is highly rated, employees are encouraged to perform better in terms of productivity. This finding is in line with Gregory (1996) that when individuals understand that they are being appraised on their performance on safety matters, they

will take those duties more seriously. Also, rewards and safety incentives enhance employee performance and productivity by reinforcing positive safety behaviours in employees, and reducing the occurrence of accidents and injuries. Safety outcomes together with employee morale are raised when they are adequately rewarded for acting safe, taking safety precautions and adhering to safety rules and regulations in the workplace. This finding corroborates Erickson (1997) that performance is higher when employee morale and overall job satisfaction are higher through safety incentives.

From Table 2 above, safety training rewards and safety incentives had significant relationship with employees' wellbeing. When employees are being adequately trained on accident prevention techniques and other issues that concern safety in the industry, their physical wellbeing is protected because fewer injuries are recorded. Safety training creates mental alertness and consciousness in employees about safety which help protect them from accidents and injuries that could jeopardise or negatively affect their physical, psychological and social wellbeing. This is supported by Dejoy, Searcy, Murphy and Gershon (2000), that the effectiveness of preventive action, through training, had a positive relationship with employee wellbeing via the reduction in injuries. Also, giving of rewards/safety incentives in the form of recognition, bonuses or awards, helps reinforce safe behaviours of employees in the workplace. Rewards/incentives which boost the morale of employees (with respect to safety issues) bring about a reduction in the number of recorded injuries in the workplace and guarantee psychological and physical wellbeing of employees. This is in line with Lauver (2007), that employee rewards for safety is important because it ensures safety in the organisation and reduction in the number of injuries.

Recommendations and conclusion

Good leadership in industrial settings should genuinely consider the safety and wellbeing of employees and not just productivity alone. When employees are aware that safety is paramount in the industry or organisation (through industrial safety practices), employees are able to develop a sense of belonging which enables them to exhibit positive safety practices which ultimately leads to better performances in their job.

Since performance is lower when management blames employees for accidents and injuries, this is due to the fact that blame evokes defensive behaviours which interfere with objectivity, and hinder cooperation. Therefore, rather than apportion blame, management, supervisors, industrial social workers and accident investigators are encouraged to promote open communication/dialogue in order to explore causative mechanisms, such as: Was the employee properly trained? Did production pressures exceed the employee limitation? Was he/she mentally and physically able to perform the task? Was he/she working overtime? Was a thorough, detective investigation conducted rather than emphasising a proximal cause?

Industrial social workers should be involved in giving employees the confidence required to make suggestions and voice concerns to management about safety issues and practices. This will help employees feel valuable and respected, and feel that management is truly interested in their opinions, welfare and wellbeing. Where management listens to employees' suggestions or concerns, employees quickly

recognise that management cares about their opinions or wellbeing and consequently put in more performance effort for the sustenance of the organisation. The feelings of alienation, demoralisation and dependency which could manifest as behaviours such as apathy, non-commitment to the organisation and/or risk-taking will also be removed.

Management should provide a good channel for reporting unsafe situations or minor injuries by employees because it would serve as a preventive safety measure. It is only when employees report their injuries that management will be able to examine the unsafe situations and conditions; and thus take appropriate steps to enhance safety training for all employees. Employees should report all safety issues, through social workers, supervisors and other channels, including near misses and minor injuries, in order to prevent major injuries and illnesses that affect wellbeing. Thus, the wellbeing and performance of employees to a large extent is enhanced when there is a decrease in the occurrence of injuries.

In conclusion, the workplace has become a major factor in individual health and wellbeing. The way people interact with their families and friends and their anxiety about the future as well as how they feel about themselves is influenced by the experiences they have at the workplace, since a huge portion of a person's life is spent in the workplace. Organisations, leaders and supervisors should be committed to protecting the health and safety of each employee as an overriding priority of their corporations' set goals. There should be no compromise of an individual's wellbeing in anything they do, for apart from affecting the employees themselves, employee health and wellbeing significantly affects organisational performance.

References

Adler PS, Kwon SW. Social capital: Prospects for a new concept. Academy of Management Review 2002, 27(1): 17-40.

Adler NE, Boyce WT, Chesney MA, Folkman S, Syme SL. Socioeconomic inequalities in health. No easy solution. Journal of the American Medical Association 1993; 269(24): 3140-3145.

Anderson N, Ostroff C. Selection as socialization. In Anderson N, Herriot P, eds. International handbook of selection and assessment. Chichester, UK: John Wiley, 1997; 413-440.

Bailey C. Improve safety program effectiveness with perception surveys. Professional Safety 1993; 38(10): 28-32.

Bartol, KM, Haggman LL. Team-based pay plans: a key to effective teamwork. Compensation and Benefits Review 1992; 24(6):24-29.

Bradbury H, Lichtenstein BMB. Rationality in organisational research: exploring the space between organisation science 2000;11(5): 551-564.

Budworth N. Indicators of performance in safety management. Safety and health practitioners 1996; 14(11), November: 23-29.

Cooper D. Treating Safety as a Value. Professional Safety 2001, 46: 17-21.

Curry DG, Quinn RD, Atkins DR, Carison TCG. Injuries and the experienced worker. Professional Safety 2004; 49: 30-34.



Danna K, Griffin RW. Health and well-being in the workplace: A review and synthesis of the Literature. Journal of Management 1999; 25(3): 357-384.

DeJoy DM, Searchy CA, Murphy LR, Gershon RRM Behaviour-diagonistic analysis of compliance with universal precautions among nurses. Journal of Occupational Health Psychology 2000; 5: 127–141.

Fujishiro K. Fairness at Work: its impact on employee well-being. USA: Graduate School of the Ohio State University, 2005. Doctor of philosophy thesis.

Gerstner CR, Day DV. Meta-analytic review of leader-manager exchange theory: correlates and construct issues. Journal of Applied Psychology 1997;82: 827–844.

Grant AM, Christianson MK, Price RH. Happiness, health, or relationship? Managerial practices and employee well-being tradeoffs. Academy of management perspectives 2007; 21: 51–63.

Gregory ED. Building an environment that promotes safe behaviour. Professional Safety 1996; 41(10) October: 20–27.

Guzzo RA, Dickson MW. Teams in organisations: recent research on performance and effectiveness. Annual Review of Psychology 1996; 47: 307–308.

Hall R. Employee Health and Safety Survey results — March 2009. Warwick District Council Corporate Health and Safety Annual Report 2009.

Health and Safety Executive; Human Factors in Reliability Group. Improving compliance with safety procedures: reducing industrial violations. Health and Safety Executive: UK. 1995.

Harvey J, Bolam HD, Gregory D, Erdos G. The effectiveness of training to change safety culture and attitudes within a highly regulated environment. Personnel Review 2001; 30: 615–646.

Hoffman DA, Stetzer A. The role of safety climate and communication in accident interpretation: implication from negative events. Academy of Management Journal 1998; 41: 644–657.

Karasek RA, Theorell T. Healthy work: Stress, productivity, and the reconstruction of working life. New York: Basic Books. 1990.

Kelly FR. Worker psychology and safety attitudes. Professional Safety 1996; 41(7), July: 41–17

Komaki J, Heinzman AT, Lawson L. Effects of training and feedback: component analysis of a behavioural safety program. Journal of Applied Psychology 1980; 65:261–270.

Kramer RM. Trust and distrust in organizations: Emerging perspectives, enduring questions. Annual Review of Psychology 1999; 50(1): 569–598.

Krause TR. Trends and developments in behavioural-based safety. Professional Safety 1997; 42(10), October: 20–25.

Lauver KJ. Human Resource Safety Practices and Employee Injuries. Journal of Managerial Issues 2007; 19(3): 397-413.

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Lauver KJ, Lester SW. Get safety problems to the surface: using human resource practices to improve injury reporting. Journal of Leadership and Organisational Studies. 2007; 14(2): 168–179.

Manoharan P. Safety Management. Industrial safety and Risk Management. In Nedumaran B, ed. India: Sri Venkateswara College of Engineering, Sriperumbudur, 2004; 59–65.

Newman J, Grigg D. Workplace Safety is a wise investment. The Vancouver Sun. November 25, 2006.

Peterson D. Accountability, culture and behaviour. Professional Safety 1997; October: 45.

Philson CS. Workplace safety accountability. Occupational Health and Safety 1998; 67(4): 20–24.

Ray PS, Bishop PA, Wang MQ. Efficacy of the components of a behavioural safety program. International Journal of Industrial Ergonomics 1997; 19: 19–29.

Ronald LA. Identifying the elements of successful safety programs: A Literature Review. Report for the Prevention Division, Workers Compensation Board of Britain Columbia 1998.

Ryan RM, Deci EL. On happiness and human potentials: A review of research on hedonic and eudaimonic well-being. Annual Review of Psychology 2001; 52(1): 141–166.

Simon RA. The trust factor in safety performance. Professional Safety 1996; October: 28–33.

The work foundation, Cabinet office, Department for Work and Pensions and HSE. Work organisation and well-being. Draft Questionnaire. Ministerial taskforce on health, safety and productivity. The well-managed organisation. Diagnostic tools for handling sickness absence. September 2006. http://www.dti.gov.uk/er/consultation.htm, http://www.acas.gov.uk

U. S. Office of Government Ethics (OGE) Annual Employee Survey results 2008. http://www.fhcs.opm.gov/2008/reports/. Accessed 2 December 2009.

Weiss HM. Deconstructing job satisfaction: Separating evaluations, beliefs, and affective experience. Human Resource Management Review 2002; 12: 173–194.

Yuvaraj J. Safety in Automobile Industry Industrial Safety and Risk Management. In Nedumaran B, ed. India: Sri Venkateswara College of Engineering, Sriperumbudur, 2004.

Zohar D. The effects of leadership dimensions, safety climate and assigned priority on minor injuries in work groups. Journal of organisational behaviour 2002; 23: 75–92.