

AN ASSESSMENT OF THE RELATIONSHIP BETWEEN EMPLOYEE WELLNESS AND OCCUPATIONAL SAFETY

by

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of the requirement for the degree
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WELLNESS AND OCCUPATIONAL SAFETY**

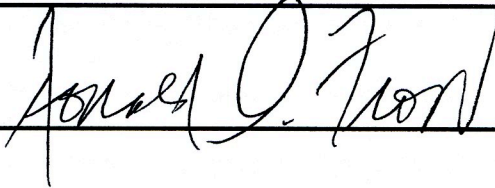
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ABSTRACT

Safety and employee welfare is monumental in companies today.

Employers and employees alike have a vested interest in the environment they provide and work in and how it affects safety records and welfare for the workers. Wellness among employees also has an impact on safety as well as internal training and awareness.

A study was designed to survey 60 employees in a folding carton manufacturing plant to determine what the underlying causes were to effective and ineffective safety records at the facility. The results revealed correlations and contrasts in labor requirements and its significance to safety awareness, perception and employee wellness. The frequent types of injuries by certain types of individuals working in specialized departments were also disclosed. The factor of employee perception as to how they believe the employer provides safe working conditions, encompasses the notion that safety is also an employee priority. The employees' lifestyle and physical well being was questioned for the relevance of defining what is expected of them at work and if they are in the physical condition to complete the tasks. This allowed the question to be asked whether employees' perception of safety awareness and training is justified. It also permits the query of how employees' lifestyles impact their ability to complete job functions without physical injury.

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CHAPTER 1

THE PROBLEM

Introduction

The issue of safety in the workplace is one of the highest priorities among corporations today. The establishment for monitoring safety incidents and to develop programs for healthier work environments in ACP Company is twofold.

One is the *Minimum Standard Safety Program*. This program consists of several practices such as management commitment, where management is responsible and accountable for preventing injuries. Safety policies and work rules are necessary to train all employees to work safely. The other is *Safety Meetings*, which encourage employee involvement and build plant safety committees. This program also encourages employees to adopt a healthier lifestyle by promoting a wellness program. Both of these programs will be investigated in this study to determine what the dominant variables are that contribute to occupational safety.

Training is necessary for employees to understand that it is their responsibility and advantage to work safely. There may be a correlation between the *Minimum Standard Safety Program* and *Safety Meetings* as to the perception of safety in the work place and employee welfare.

The logical rationale for this study is to determine the impact of and preventative measures to take in order to maintain safe working conditions for employees while at work and outside of work. The impact of lost production, penalties for non-compliance in safety regulations, rising costs in medical care and low employee morale are some of the causes for unhealthy employees and/or work environments.

Development of the Problem

Employers who are promoting safety through worksite health promotion programs have recently acknowledged the value of the prevention of illness and injury due to industrial or occupational causes (Collins, 1991).

Employers are initiating the improvement in safety processes in order to facilitate an increase in productivity (Material Handling Engineering, 1998). There is a close connection to work and well being and a major significance in work as it relates to human development and functioning. U.S. employers identify the adverse effects of unhealthy lifestyles on their employees' work performance. Some episodes of disorderly actions upset the operations of their factories (Kurzman & Akabas, 1993).

According to Rost & Connell (1990), there are predictors that need to be taken into consideration when investigating employee participation in safe practices. Examples of this are overtime employees, off-shift employees, accident history, age, frequency of exercise, sleep deprivation, and dietary conditions of employees, as well as the industrial environment and physical

demands placed upon them. The understanding of attentiveness and safety awareness while at work are important variables to consider as part of the investigation between employee wellness and occupational safety. What may surface is those employers and employees may have different views on how each feels safety is being addressed in the workplace.

Need for the Study

This study is needed to assess accident prevention and determine the causes for occupational injuries. With the various federal, state and other regulatory compliances required in manufacturing settings, the accountability of the employers is high for ensuring safe working conditions. The causes for these safety records derive from many elements. These elements may be good or poor management/employee relations, positive or negative union influences, high or low profitability, positive incentives or lack thereof, an unskilled workforce, or a motivated workforce. According to Kayafas (1989), the need for maintaining employee health is because:

Employees are among the most important assets of a business and should be preserved. Healthy employees produce more efficiently with better quality. It is morally right and humanitarian to preserve employee health. It will help employers to comply with applicable laws. It will minimize health costs. It will produce peripheral benefits such as employee and community goodwill and improved labor relations. It can help preserve our national human resources and reduce national health costs. (p.20)

Many workforces do not follow established safety procedures, for whatever reason, and the employees have the understanding that the

procedures must be followed, they just may not follow them (Cantarella, 1998).

This contradicts the proactivity to safety prevention employers try to capture.

According to Grant & Brisbin, (1992):

Traditionally, employer injury and illness prevention programs have concentrated exclusively on those factors, which relate directly to the duties being performed by the worker. However, many health problems, which begin outside the workplace, may also affect the ability of workers to perform their duties safely, or may be aggravated by the work being performed. (p.3)

The findings of this study may help determine why safety is at an all time high or low and how employers and employees at ACP Company can respond to those reasons. Another reason for employers to create a healthy workplace is for economic benefit such as lower health care insurance premiums and fewer health care claims.

A final objective for worksite health promotion is to increase productivity and efficiency. This investigation for identifying the relationship between employee wellness and safety will allow employers and employees the opportunity to make changes to improve safety, make changes to keep acceptable safety records, or make no changes in order to maintain what is already an acceptable safety record.

Purpose of the Study

The purpose of this research is to investigate the relationship between employee wellness and safety in the workplace at ACP Company. Both the employer and employees contribute to the factors associated with safety

records. A survey given randomly to 60 employees will provide an assessment on safety in a production environment. It will include safety requirements, awareness and results as they relate to employee perception, ability and welfare.

Research Question

What is the relationship between employee wellness and safety at ACP Company?

Definition of Terms

Bloodborne Pathogens/First Aid - pathogenic microorganisms that are present in human blood and can cause disease in humans including HBV and HIV. (ACP Company, 1996, p.21)

Confined Space Entry – a space that is: large enough and so configured that an employee can bodily enter and perform work: and has limited or restricted means for entry or exit (i.e., tanks, vessels, silos, storage bins, hoppers, vaults, pits and cyclones); and is not designed for continuous employee occupancy. (ACP Company, 1996, p.17)

Die – a rotary shaper for corrugated material. Dies are a piece of equipment used in cutting presses that have cutting heads and are enclosed in a cage or adjustable guard in the press. (Binford, Fleming, & Prust, 1975, p. 124).

Ergonomics – the scientific study of human work, the application of scientific information concerning human beings to the design of objects, systems and the environments for human use. (Pheasant, 1991, p. 4).

Hazard Communication - Material Safety Data Sheets or other similar data sheets provided to warn users of the hazardous properties they may be handling. (Kayafas, 1989, p.61)

Hazardous Waste Operation Emergency Response - a guideline and plan that identifies what hazardous substances are in the work area, how

employees recognize the signs of release, who is to be contacted (name and number) when release is detected, and how to identify the substance without exposing oneself to risk of injury, or, in some programs, how to contain the spill. (ACP Company, 1996, p.30)

Hearing Conservation – monitoring for and preventing the noise as being a sound that is not pleasant to hear, the excess of which can cause damage, either instantly, or over a long period of time depending upon how loud it is. (Kayafas, 1989, p.96)

Health Promotion – the modification of human behavior and environmental factors related to that behavior which directly or indirectly promote health, prevent illness, or protect individuals from harm. (Elder, Geller, Hovell & Mayer, 1994, p.376)

Lockout and Tagout Program - to establish a program and procedures for the protection of personnel in, on and around machines or equipment from injury due to unexpected energization, start up or release of stored energy of the equipment/process during repair, maintenance, set-up and other non-routine production work. (ACP Company, 1996, p.1)

MR (Make Ready) - in printing press, all work done prior to running; adjusting the feeder, grippers, side guides, and putting ink in the foundation. Also, in letterpress, the building up of the press form, so that the heavy and light areas print with correct impression. (Jackson, 1986, p. 124)

Occupational Safety and Health Administration (OSHA)- a federal safety and health agency created in 1970 to encourage reduction in job hazards, OSHA maintains and enforces standards of health and safety; establishes rights and responsibilities for employees and employers; maintains records on job-related injuries and illnesses; conducts research. (Department of Environmental and Community Medicine, 1989, p.199).

They enforce federal safety and health laws, regulations, and standards. These are carried out by the agency and are mandates of the U.S. Congress. (Kayafas, 1989, p.25)

Personal Protective Equipment (PPE) – the basic means of protecting employees from excessive exposure to hazardous phenomena. This includes not only equipment such as respirators, hard hats, safety belts, safety lines, goggles, safety face shields, and hearing protectors, but also clothing such as safety shoes, gloves, impervious outer wear, boots, and hoods designed to protect the body from the harm that can be caused by hazardous substances. (Kayafas, 1989, p.165)

Plant Emergency Organization/Evacuation (PEO) - to outline the basic requirements of the PEO, its responsibilities, functions and duties, so it may function in an emergency to protect employees, the public, and company property. The PEO should be organized to react to fire, flooding, high wind damage, explosions and employee injuries. (ACP Company, 1996, p.37)

Worksite-a setting, influenced by organizational, cultural, and environmental factors, where work is performed and employee services are provided. (Cox and Hooper, 1998)

CHAPTER 2

LITERATURE REVIEW

Introduction

The topics which will be reviewed in this chapter are: an overview of OSHA and organizational intervention, an overview of worksite health promotion programs, employee participation of health practices and lifestyles, employer/employee demographics, night and shiftwork, industrial occupation and job requirements, employee accident history, employee perception on health versus safety training/conditions, and an overview of ACP Company.

OSHA and Organizational Intervention

There are two fields that claim to influence worksite health promotion. Those two are occupational safety and health and worksite health promotion professionals. According to Collins (1991), occupational health and safety pinpoints the need for workplace health promotion in that it leads to morale, productivity and quality improvement. This doctrine suggests that promoting wellness will prevent injury and illness from industrial or occupational causes.

The occupational health and safety field concerns itself with the work environment. The goal is to prevent work-related accidents. Those accidents,

which may cause injury or disease can be minimized if intervention occurs. The Occupational Health and Safety Administration (OSHA) encourages the use of personal protective equipment and work practices. This field is also more centered on regulatory compliance (Baker & Israel, 1996).

By law, OSHA sets a variety of published standards of safety and health programs to protect most American workers under the OSHAct. Those written specifications may describe a safeguard or establish an exposure limit in order to prevent accidents and hazardous exposures. OSHA also inspects worksites, issues citations and imposes penalties on employers if they are in violation of such standards, according to the Department of Environmental and Community Medicine (1989).

ACP Company's *Minimum Standard Safety Program* practiced by management and employees must be stated as committees that have to evaluate regulatory compliances for the facility.

Since the total responsibility for a company's safety and health program is often too much for one individual to handle, many industrial organizations have developed safety and health committees to detect unsafe plant conditions and health hazards in both union and nonunion establishments. (Department of Environmental and Community Medicine, 1989, p. 92)

Compliance's for ACP Company that are evaluated by internal committees are:

1. Lockout and Tagout Program
2. Hazard Communication
3. Confined Space Entry
4. Bloodborne Pathogens/First Aid

5. Hearing Conservation
6. Hazardous Waste Operation Emergency Response
7. Personal Protective Equipment
8. Safe Work Practices for Electrical
9. Plant Emergency Organization/Evacuation
10. Handling Plant OSHA Inspections

Worksite Health Promotion Programs

The other field, workplace health promotion, narrows the safety issues down to individual lifestyle behaviors. These professionals identify correlations between safety results and psychosocial, organizational, socioeconomic and physical variables. Worksite health promotion professionals tend to think of wellness programs as an investment in behavioral change, relationships and social support in order to better individual well being and as a measure of success (Baker & Israel, 1996).

Three approaches to summarize how worksite health promotion programs impact the outcome of employee welfare, productivity and profitability in the workplace are human resources, lifestyle change programs, and health benefits.

The first, human resources approach, focuses on selecting, evaluating and developing personnel programs and policies to assist in training employees and managers to adopt healthier professional and personal ways of dealing with stress, fitness and overall health (Collins, 1991).

The lifestyle change programs emphasize the involvement of behavior beyond the workplace. Behaviors of diet, lack of exercise, smoking, and other

components may promote such conducts that would impact on-the-job performance (Collins, 1991).

Finally, the health care benefits portion addresses the financial side to safety results. Health care insurance costs, claims, and the companies in need of wellness improvement, incur other expenses due to poor or nonexistent workplace health promotion programs. It was suggested that an integration of all three of these approaches will provide a strong support system when implementing a workplace health promotion program (Collins, 1991).

Elder, Geller, Hovell & Mayer (1994) offer several suggestions for improving staff performance through organizational levels of intervention on health promotion. The enhancement of worker safety has been done through economic incentives offered by employers to employees to alter behavioral and environmental factors related to health at the worksite. Cash, income including vacations or consumer goods, CPR and other health-related training and worksite competitions have been used successfully to motivate individuals to work safely "...the major reason for employers to encourage health promotion is to reduce costs for health benefits and increase productivity through reduction in sick time and inefficiency on the job" (1994, p.231). The balance of enhancement of physical, social and mental aspects of positive health, combined with the prevention of physical, mental and social ill-health is the goal of health promotion (Downie, Fyfe & Tannahill, 1990, p. 25).

Employee Participation in Health Practices and Lifestyle

The three types of factors affecting employee wellness are frequency and types of exercise, nutritional and diets patterns, and sleep, attentiveness and alertness. These all are directed from individual factors. Those factors of influence are biological, psychological and social. Employee participation of adopting health practices and lifestyles to better the safety behavior in the workplace begins with participant adherence. Biological make-up of individuals may determine who will adhere to health/fitness programs and succeed, as opposed to who will not.

According to Patton, Corry, Gettman & Graf (1986), people whose weight is in proportion to their height, are more lean and light, have less difficulty performing fitness exercises and are more apt to adopt a balanced diet and healthy lifestyle patterns that reflect safe behavior (p.211). There are also psychological factors to employee participation. People who are goal-oriented, self-motivated and committed to practicing healthy behaviors will be more successful with nutrition, weight control, substance-abuse cessation, stress management and exercise. Patton, Corry, Gettman & Graf (1986) also contend that social factors influence employee participation in health practices and lifestyle take the form of 'belonging' as stated in Maslow's chart of hierarchical needs (p. 211).

According to Petersen (1976), a study conducted by Dr. Hannaford about attitudes found that positive attitude toward safety foster safe working behaviors and practices. Dr. Hannaford stated three components of attitude (attitude =

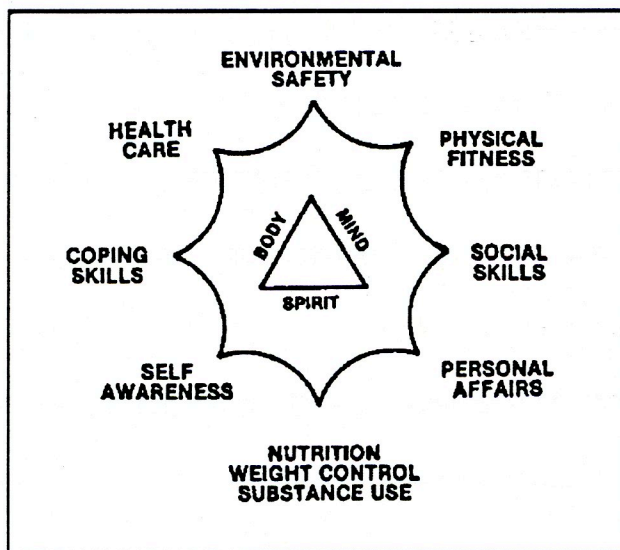
learned responses + habit + emotional set) and learned from studying 769 males from 47 companies who represented a cross-section of industries all with either excellent, average or poor safety records. The poorer the safety attitude among employees, the more lost-time accidents increased (p.85).

Attitudes tie together feelings, beliefs and behavior. That is why attitudes are important when trying to alter behavior. An attitude is a learned predisposition to think, feel and act in a particular way. This aspect coincides with cognitive components of attitudes. This aspect represents a person's own direct or indirect intellectual evaluation of the object or attitude, based on facts collected or acquired (Downie, et al., 1990).

When dealing with the element of safety and wellness, people either want to behave safely or not because they see the effects safe behavior has on their well being, their work environment and the people around them. It is logically based. Affective components of attitudes are based on emotions. Employees may choose to adopt a healthier lifestyle for the simple reason that it makes them feel good physically and gives them a high confidence level mentally. A final aspect of attitude is conative components. This is behavior based and is carried out verbally or non-verbally, usually through the influence of consciously affected actions and physiological reactions within a range of environmental situations. Employees then may adopt a healthier lifestyle because they see the long-term benefits to physical and mental health, relationships with friends and family, personal and professional success and organizational contributions to safe practices, according to Downie, et al. (1990, p.102).

Gould & Smith (1988) illustrate in Figure 1, the balanced lifestyle components in which they also note "...historically, physical fitness has been viewed as the foundation of a healthy lifestyle and is often the component that receives the most attention" (Gould & Smith, 1988, p.142).

Figure 1. Balanced Lifestyle Components



Source: Gould & Smith, 1988, p.142

Frequency and Types of Exercise

Employees may participate in exercise for different reasons. It may be to enhance cardiovascular endurance, muscular strength or muscular endurance and flexibility, all which can be measured by body composition tests. A link to exercise, or lack thereof, is obesity. Those individuals who are obese may not necessarily eat any more than the non-obese, they have been shown to be far less active in physical activity (Patton, Corry, Gettman & Graf, 1986, p. 106).

The Washington Business Group on Health and the University of California Medical School at San Francisco conducted a study to report short-term results of employee fitness programs and their effect on work. This study reported steadily positive outcomes in reference to moderating disability and medical costs that employees have on employers. Almost all research reflected on employees who are more productive than those employees who do not regularly participate in health and fitness programs are. Those employees who do participate in health programs also expressed higher job satisfaction. Other programs have also stated declines in leave of absence and disability insurance payments (Pelletier, 1982).

Exercise can be directly linked to ergonomics at the workplace. According to Pheasant (1991) "...an effective match is one which optimizes working efficiency (performance, productivity), health and safety, and comfort and ease of use" (p. 4). How does ergonomics relate to exercise? If employees are given proper bioenergetics of exercise, which is the immediate energy source for muscular contraction, the individual's capacity to perform physically strenuous work by his or her maximum aerobic power is high. This can be measured by energy expenditure, which derives from certain types of exercise that can or cannot be performed (Pheasant, 1991).

The physiological classification of work activities has been shown in five categories of light, moderate, heavy, very heavy and extremely heavy. Individuals who mainly exercise for cardiovascular strength can successfully perform these classifications. This can be done by working with the arms and

legs to increase blood flow. This does not, however, strengthen muscles that may be exposed to repetitive motions that may cause fatigue, cramps, and musculoskeletal disorders. According to Pheasant (1991), "The dividing line between 'exercise' and 'trauma' is a very fine one," (p. 51).

Other types of exercise that may strengthen muscles to avoid resistance when performing physical tasks are walking or jogging, whether on a slight incline or on the level, cycling and lifting weights. These types of exercise require coordination that allows for optimal work efficiency. Work efficiency is motion economy which is the determination of physical work performed and output based on the kinetic and potential energies of each segment of the body (Pheasant, 1991). Therefore, if an individual has built up strength, whether it is cardiovascular or muscular, the less difficult it will be for that individual to perform physically demanding activities.

Nutritional and Diet Patterns

Nutrition education, and employer's effectiveness in the education, will play a large role in the acknowledgment of diet and health.

There is several other health risk factors that may be a result of nutritional and diet patterns. Calcium and potassium intake may increase the risk of hypertension and there may be a link between sodium consumption and high blood pressure (McCarron, Stanton, Henry & Morris, 1983). A national research council report has shown an increase in the levels of heart disease and cardiovascular disorders in relation to the consumption of certain dietary intake

of saturated fats (Cancer Research, 1983). High protein, Vitamin A and C intake as well as alcohol consumption and smoking are inversely related to cancers. Obesity also contributes to other chronic ailments such as diabetes (Bezold, Carlson, & Peck, 1986). The availability of food, poor eating habits, emotional factors, a stressful occupation and physically inactive lifestyle are other environmental factors leading to unhealthy diet patterns and may lead to obesity (Patton, Corry, Gettman & Graf, 1986, p. 106).

The emphasis on nutritional education in the workplace is advantageous to the employer and employees who are at an integral part of the intervention process of unhealthy nutritional patterns. Many employees consume two out of three meals a day in the workplace. Combining nutritional education with other health components, such as exercise and stress reduction programs, may reduce the frequency and/or potential of health risk incidents at the workplace (Patton, Corry, Gettman & Graf, 1986).

Sleep, Attentiveness and Alertness

Sleep disturbance is the disruption of a sleep pattern that interferes with one's own body rhythms. The two sleep stages are deep sleep and rapid eye movement (REM) sleep. The night shift (common in manufacturing industries) will displace sleep from its normal night time position, therefore the resulting sleep episode will usually be short (4-6 hours) and contain strongly reduced amounts of sleep stages 2 and REM (Haider, Koller & Cervinka, 1986, p.31). The quality of sleep one may have could depend on various factors of well

being. An individual's job, stress-level, personal lifestyle, physical health, and ability to relax after mental activity may show their ability to recover from fatigue through their day.

According to Pheasant (1991), mental workload, or attentiveness/alertness can be defined by the person's cognitive ability to either process information correctly, or be selective in what pieces of information are coming at the person, if overloaded, they may select to off-load (p. 152). In a manufacturing setting where repetition is common in daily tasks, choosing speed over accuracy may interfere with decision-making situations where a worker has not processed the information cognitively. Unfortunately, off-loading tends to contribute to behavior, which is error-prone, which in turn may create stress (Pheasant, 1991, p. 152).

There is also the element of short versus long term attention spans. Short term attention levels deal with the mental capacity one has to process information while new information is also being processed. Workers under complex situations must prioritize the demands placed upon them. If situations occur that allow the worker to exercise well-practiced patterns of behavior, the long-term memory is in effect. Pheasant (1991) suggests, however, that appropriate use of judgement by an individual, which is in the form of one's ability to cognitively decide how to process information, may be portrayed in concentration and performance levels.

Employer/Employee Demographics

The demographic characteristics for determining what type of employees are more likely to participate in worksite health promotion, according to Glasgow & McCaul (1993), in general, tend to be women. Men and blue-collar employees appear less likely to participate, except in fitness programs where somewhat higher rates were found for men. The white-collar employees also have a higher participation rate in wellness programs. Fielding and Piserchia (1989), report that:

Several variables often assumed to be associated with participation at the employee level, including a percent of blue-collar workers, male workers, workers younger than the age of 30 years, and whether workers are represented by a union, were not related to the probability of a worksite offering one or more health promotion activities. (Fielding and Piserchia, 1989, p.17).

In terms of worksite level predictors, the type of industry was also related to the existence of health promotion programs in certain workplaces. There was a 78% representation of industries that offered several health promotion activities. Those industries were defined as utilities, transportation and communication industries. Other data suggested that approximately two thirds of worksites with 50 or more employees offered at least one type of health promotion program. These worksite and employee level variables, when considered together in relation to one another, may establish how influential a worksite is on a health promotion program and to what extent employees will participate (Glasgow & McCaul, 1993).

Night and Shiftwork

The fundamental element of night and shift work is the recognition of individuals who are awake and operational during the irregular hours of the majority of society. This is important to note because of the sleep patterns that are adopted by individuals who work irregular shifts. "Shift work tends to increase fatigue and is maximal during the last half of the night work when sleep loss is at its maximum" (Haider, et al., 1986, p. 37). The determination of the type of person is made by circadian rhythms. These rhythms are the physiological processes of daily cyclic fluctuations. Basically, there are different types of people who perform most efficiently during certain hours of the day. The morning and evening types are most common. According to Pheasant (1991), the most extensive study performed on around-the-clock human performance was on meter reading errors performed by a Swedish gas works company. Over a 20 year period, observing 6 a.m., 2 p.m., and 10 p.m. shifts rotating once per week, some notable accidents resulting from errors committed during the 2-6 a.m. period were identified.

Sleep deprivation is common with the nightworker "...who is out of time with the rhythm of life which continues unabated around him. The quantity and quality of his sleep both suffer" (Pheasant, 1991, p.170).

Industrial Occupation/Job Requirements

Each department at ACP Company has safety policies appropriate for the physical demands and attention to particular equipment and surroundings. Plant-wide requirements are eye protection with side shields, steel-toed safety shoes/boots, and hearing protection. Figure 2 identifies tasks at ACP Company, what the potential hazards are in performing those tasks and what the Personal Protective Equipment (PPE) requirement is for performing those tasks.

Most on-the-job injuries are caused by objects that fall from less than four feet, according to OSHA. This is where safety shoes that are impact-resistant become appropriate PPE. Lifelines and safety belts are necessary where there is a risk that a fall might occur on the job. Ear protection is essential for hearing preservation where employees are exposed to noise during an eight-hour day not exceeding 90 decibels under OSHA regulation. Employees who are at risk of falling objects may be required to wear helmets or some other type of head protection. The eye and face protection is important for workers who are near equipment that produces flying sparks, splashes or harmful particles. Respiratory protection is mandated when harmful vapors, fumes, gases, mists, dust or sprays enter a worker's breathing territory, according to the Department of Environmental and Community Medicine (1989).

Common approaches taken by ACP Company and other goods-producing industries to deal with safety issues are education and outreach, research, enforcement, and consideration of a regulatory proposal. Once the industry has determined what type of personal protective equipment should be used,

selection of the equipment and how workers are educated and trained on how to use it is essential, according to the Department of Environmental and Community Medicine (1989).

Figure 2. Tasks, Potential Hazards and PPE Required at ACP Company

TASK	POTENTIAL HAZARDS	PPE REQUIRED
All Position	Entanglement	Proper Attire Hair Restraint
Man Lift	Fall	Safety Harness
Banding	Lacerations	Gloves
Handling Offset Plates	Lacerations	Gloves
Cutting MR, Pre-MR, MR Repair, Die Work	Lacerations	Gloves
Maintenance/Welding	Burns/Eyesight Damage	Welding Gloves/Apron Welding Jacket/Helmet Long Sleeves/Pants Fire Watch
Maintenance/Repair	Falling Objects	Hard Hat
Maint/Compressed Air	Dirt/Duct Particles	Dust Mask
Maint/Cleaning	Chemical Exposure	Gloves, Long Sleeves Mouth/Nose Shield
Maintenance/Electrical	Electrocution	Rubber Gloves Insulated Mat/Tools Ground Fault Circuit Interrupters (GFCI) Low Voltage Drop Light Lock Out Lock
Maint/Battery Changing	Electrocution Chemical Exposure	Gloves Face Shield Apron Long Sleeves/Pants
Ladder Work	Electrocution/Fall	Appropriate Ladder Spotter

Source: ACP Company's Safety Management and Worker's Compensation Manual, 1999

Employee Accident History

An assessment of the employee's medical history may be beneficial to future safety successes if evaluated correctly. They state that participants should have knowledge about the types, causes, treatments, preventative techniques, suitable exercises and proper body mechanics that may prevent injuries and/or explain why an injury occurred (Patton, Corry, Gettman & Graf, 1986, p.192). Good posture impacts movement when lifting objects. It also supports muscle movement when stress is placed upon certain parts of the body. Body mechanics of individuals may explain the history of their safety records if evaluated as correct or incorrect in performance of such techniques. Techniques such as muscle movement, posture, range of motion, flexibility, abdominal and back strength, hip flexor motion and an individual's ability to deal with stress are all indicators of an employee's ability to perform safely at work. These indicators can be proactively measured by the employers by checking the employee's accident history as well as conducting physical agility tests and employee profiles (Patton, Corry, Gettman & Graf, 1986).

In accordance with medical history, employers may want to explore the history of unsafe actions through direct causes. According to Hoover, Hancock, Hylton, Dickerson & Harris (1989),

There are 11 types of major unsafe actions. They are operating without authority, failure to secure objects, failure to warn others or give proper signals, operating or working at unsafe speeds, making safety devices inoperative, using unsafe equipment or equipment unsafely, unsafe loading, carrying, and mixing, taking unsafe positions or postures, working on moving on dangerous equipment, distracting, teasing, or

startling other workers, and failure to use attire or personal protective devices. (p. 32-34)

In 1978, Work Injury Reports (WIR) were established to collect data on the description and identification of occupational injury and illness. WIR surveys published to date, according to Heath & Ferry (1990), noted that a large number of injured workers did not receive what little training they could have had from their current employers, and if they did, it was from fellow employees, not from supervisors. In addition, the training was more than a year old (Heath & Ferry, 1990).

Types of Injuries

According to Hoover, et al., (1989), there are basic accident types. The most common is the 'struck by' accident. This is unexpected contact of a moving object or substance on an employee. The 'struck against' accident is when either the object or substance and the employee are in motion and make contact. The 'caught between' accident can also take the form of 'caught in' or 'caught on' where an employee is either logged in, on or between an object. These three accidents account for the largest percent of industrial accidents (p.27). Others to mention are falls from above, falls at ground level, and strain/overexertion.

Employee Perception on Health vs. Safety Training/Conditions

Two concepts that have been identified among manufacturing environments to improve safety performance are collaboration and participation.

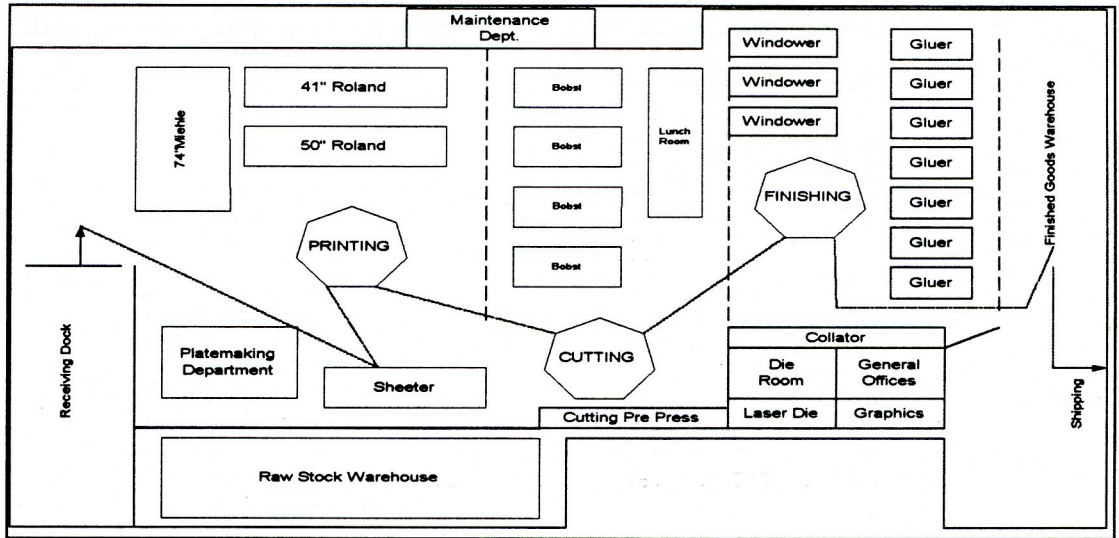
Collaboration, or active involvement, is allowed and encouraged for workers in order to: stimulate greater acceptance, energize a greater sense of community and corporate citizenship and react to resistance of individual forms of pressure that may disrupt changes and intensify positive relationships that build trust and understanding in the work place. These results tend to lead to collective goals that increase productivity, quality and safety performance (Sarkus, 1997).

Participation focuses on the decision-making element to undergo changes. Benefits of practical participation cultivate behavioral contributions from the workforce. Supervisors should facilitate participation in order to help employees overcome resistance to change, offer informal coaching and allow employees to give feedback. Employee input on particular events, programs or changes, builds trust and can be influential in the future. Participation, with the intent to clarify goal setting should also come from employees, if possible. In addressing safety, exploring employees' knowledge on equipment improvement, personal protective equipment and ergonomic changes can contribute effectively to the work environment with which they are most familiar. A meaningful insight into participatory approaches when dealing with employee safety is role-playing exercises. These exercises can illustrate specific procedures, which are valuable when influencing employee attitudes and actions in the work environment (Sarkus, 1997).

Overview of ACP Company

ACP Company is a packaging corporation that converts paperboard into folding cartons. Figure 3 shows the plant layout and flow of activity. The involvement with this conversion is taking sheeted or roll stock of paperboard (weight of up to 3 tons) and coating the stock with ink. The maintenance of raw stock requires licensed Hilo-drivers, printing pressmen to oversee three printing presses with exposure to heavy machine operation, equipment, inks, other hazardous chemicals and heavy manual lifting. Printed sheets are transferred to the cutting department by way of licensed Hilo-drivers who expedite material to the cutting pressmen. The pressmen oversee four die cutters requiring die make-ready and heavy manual lifting of equipment. From the die cutters, the material is handled by the stripping department, which requires the use of air hammer operators to strip the good material from the scrap. Air hammers have an average weight of 18 pounds. The material is then expedited to the finishing department where it palletized. Material can be collated, fed through one of three window applicators and folded/glued on one of seven gluers. The finishing department handles material by licensed Hilo-drivers, using manual light and moderate lifting, and leg, back and arm motion as well as frequent wrist movement.

Figure 3. - ACP Company Plant Layout = 180,000 sq. ft.



Source: ACP Company's Safety Management and Worker's Compensation Manual, 1999

It is necessary to take into consideration the demands of labor, a comparison of variables about characteristics of employee history, lifestyles and perceptions to identify significance in safety. Those variables show the relationships of individuals who have experienced an injury with those who have a level of physical well being, and with those who have a high confidence level in safety training.

Summary

The topics reviewed were, the overview of OSHA and organizational intervention, overview of worksite health promotion programs, employee participation of health practices and lifestyle, employer/employee demographics, night and shiftwork, industrial occupation and job requirements, employee

accident history, employee perception on health versus safety training/conditions, and an overview of ACP Company.

CHAPTER 3

METHODOLOGY

Introduction

What variables have the greatest impact on the probability of injury incidents: safety training and awareness or the employee's perception and physical health? The purpose of this research was to investigate the relationship between employee wellness and safety in the workplace. Both the employer and employees have contributed to the factors associated with safety records. A survey given randomly to 60 employees has provided an assessment on safety in a production environment. It included safety requirements, awareness and results as they relate to employee perception, ability and welfare.

Research Design

This study utilized a descriptive research design to assess the relationship between employee wellness and occupational safety. The relevant characteristics of the descriptive research method that were used to research this topic to objectively explain the behavior of the employees about their lifestyles, work habits and perception of the work environment was through survey distribution. The employees were the source of research data and were

randomly selected to provide information to the researcher. The disadvantage is that behavior was unpredictable. The environment was uncontrolled by the researcher, therefore, the research was simply to indicate to the degree two events or phenomena are related, not give value to sets of relationships between events (Merriam and Simpson, 1995).

To define the parameters of the descriptive research design of this study, the components of the *Minimum Standard Safety Program* were compared to the *Safety Meetings* components to disclose what the impact safety training and physical health has on employee injury in the workplace. This was done through data collected by a survey. The survey was the procedure used to gather data on regulatory compliances, plant-wide requirements, and personal questions on health, lifestyle and perception of wellness of employees themselves and how ACP Company supports wellness. According to Harris and O'Donnell (1994):

In order to make the case for worksite health promotion programs and to monitor and manage them, health promoters should understand the nature of the evidence linking risks and health. One can then explore the evidence of differential risk for behaviors, environmental factors, physiological conditions, and psychosocial situations. (p.5)

Population and Sample

ACP Company has the following employment statistics as shown in Figure

Figure 4 ACP Company Employment Statistics

Hourly Employees	Salaried Employees
• 203 employees	• 30 employees
• Average age = 41.5 years	• Average age = 40.1 years
• Average seniority = 14.4 years	• Average seniority = 12.3 years

Source: ACP Company's Human Resource Department, 1999

The survey was given to hourly employees due to their frequent exposure to potential hazardous situations in the facility. Sixty surveys were randomly distributed to hourly employees by selecting employees by clock number. This identity shows no discrimination or prejudice based on age or gender, rather identifies employees by a number. This process was completed with the assistance of human resources personnel who maintained time clock information and cards. Cards were randomly pulled from a pile to determine which employees would participate in the survey. This process was successful with a response rate of 100% for all participants chosen to take the survey. Their work environment tends to be much more industrial than the salaried employees who work in an office type setting. Hourly employees are exposed to several safety situations on a daily basis as is true with any industrial environment.

Assumptions and Limitations

The 60 individuals were aware they were being studied, and it is assumed they responded honestly. The sampling of questions answered in the survey

were used to define relationships and distinguish correlations needed for ensuring the confidence level and accuracy of results.

Procedure

Management, the union and this researcher discussed the survey distribution and a verbal agreement was made to relieve the company from any liability (Appendix A). This agreement included the assumption that this researcher agreed to anonymity not only with survey participants, but also with the identification of the company as well. Once all parties consented to its distribution, the survey was edited and approved by the general manager of the production facility. The 60 surveys were then distributed during all three shifts by supervisors. The researcher allowed one day for survey completion and return. The participants were assured of anonymity and were informed that results would be accessible once determined.

Instrumentation

The 18-question survey developed by this researcher drafted questions ranging from age, work experience, lifestyle, diet, exercise, sleep habits, attentiveness, injury history and perception of safety awareness. Questions offered close-ended answers to allow the research more valid, indiscrepant data for interpretation purposes. When questions allowed for more than one answer, the participant was instructed to select all those answers that apply. The anonymity of the participants proposed more honest, reliable answers. The survey seemed most appropriate for collecting data on the topic. The 18-

question survey took less than 15 minutes to complete. Data compiled offered a wealth of unexplored, significant information about ACP Company, it's employees' health and perception of safety in the working environment.

Method of Analysis

Values assigned to each variable were computed on a percentage and frequency level. Correlation coefficient and gamma statistics were also included in the data translation to lead to a conclusion. This was done after the data was downloaded into SPSS statistical computer software that allowed crosstabulation distributions to be executed on variables. A comparison of those factors against age, work experience, lifestyle, diet, exercise, sleep habits, attentiveness, injury history, and understanding of safety awareness, indicated relationships between employee wellness and safety in the workplace.

CHAPTER 4

PRESENTATION AND ANALYSIS OF THE DATA

Demographics

To initiate the foundation of analysis, the frequency of employees who believe ACP Company provides all the necessary conditions to ensure the facility to be a safe working environment simply implies that 90.0% of individuals sampled agreed and 10.0 % disagreed. This is a 54 over 6 count of 60 total participants (Table 1).

Table 1.

SAFE CONDITIONS PROVIDED

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	STRONGLY AGREE	6	10.0	10.0	10.0
	AGREE	26	43.3	43.3	53.3
	MODERATELY AGREE	22	36.7	36.7	90.0
	DISAGREE	6	10.0	10.0	100.0
	Total	60	100.0	100.0	

This frequency is the end result of this research. By displaying it first, the data to follow will be supporting data leading up to why employees came to agree or disagree with ACP Company's attempts to provide a safe work environment as well as the employee's physical well-being, employment and training history as it relates to safety. Trends, patterns and discrepancies may

reveal the cause(s) of injuries and explore precautionary measures for preventing accidents.

The variable for constituting who has experienced work-related injuries can be seen in the crosstabulations of positions that employees hold with those who has filed a lost time accident. The results in Table 2 show 37.5 % of employees, or 6 participants, who work in the finishing department, have filed a

Table 2.

EMPLOYEE'S POSITION * LOST TIME ACCIDENT Crosstabulation					
			LOST TIME ACCIDENT		Total
			YES	NO	
EMPLOYEE'S POSITION	PRESSMAN-PRINTING	Count	4	14	18
		% within EMPLOYEE'S POSITION	22.2%	77.8%	100.0%
		% within LOST TIME ACCIDENT	25.0%	31.8%	30.0%
		% of Total	6.7%	23.3%	30.0%
	PRESSMAN-CUTTING	Count	4	10	14
		% within EMPLOYEE'S POSITION	28.6%	71.4%	100.0%
		% within LOST TIME ACCIDENT	25.0%	22.7%	23.3%
		% of Total	6.7%	16.7%	23.3%
	STRIPPING	Count	2		2
		% within EMPLOYEE'S POSITION	100.0%		100.0%
		% within LOST TIME ACCIDENT	12.5%		3.3%
		% of Total	3.3%		3.3%
	FINISHING	Count	6	20	26
		% within EMPLOYEE'S POSITION	23.1%	76.9%	100.0%
		% within LOST TIME ACCIDENT	37.5%	45.5%	43.3%
		% of Total	10.0%	33.3%	43.3%
Total	Count	16	44	60	
	% within EMPLOYEE'S POSITION	26.7%	73.3%	100.0%	
	% within LOST TIME ACCIDENT	100.0%	100.0%	100.0%	
	% of Total	26.7%	73.3%	100.0%	

lost time accident. This is higher than both the printing department, 4 participants, with a 25.0% lost time percentage and the cutting department, 4 participants, with a 25.0% percentage for recording a lost time accident. Also the stripping department rates low with a 12.5% lost time accident percentage with 2 participants.

In Table 3, the sampling of men and women who work in certain departments signifies a possible correlation with gender, departmental positions and lost time accidents.

Table 3.

SEX OF EMPLOYEE * EMPLOYEE'S POSITION Crosstabulation

			EMPLOYEE'S POSITION				Total
			RESSMAN-PRINTIN	RESSMAN-CUTTIN	STRIPPING	FINISHING	
SEX OF EMPLOYEE	MALE	Count	12	14	2	8	36
		% within SEX OF EMPLOYEE	33.3%	38.9%	5.6%	22.2%	100.0%
		% within EMPLOYEE'S POSITION	66.7%	100.0%	100.0%	30.8%	60.0%
		% of Total	20.0%	23.3%	3.3%	13.3%	60.0%
	FEMALE	Count	6			18	24
		% within SEX OF EMPLOYEE	25.0%			75.0%	100.0%
		% within EMPLOYEE'S POSITION	33.3%			69.2%	40.0%
		% of Total	10.0%			30.0%	40.0%
Total	Count		18	14	2	26	60
	% within SEX OF EMPLOYEE		30.0%	23.3%	3.3%	43.3%	100.0%
	% within EMPLOYEE'S POSITION		100.0%	100.0%	100.0%	100.0%	100.0%
	% of Total		30.0%	23.3%	3.3%	43.3%	100.0%

The finishing department has the highest employment placement of the other three departments, and of the men and women ratio, 75.0%, 18 participants, are female.

Perhaps in Table 4 the revelation of employees on the 1st shift, 10 participants, are the most apt to not file a recordable injury with a 50.0% representation rate over the other two shifts, 4 participants on 2nd shift and 4 participants on 3rd shift.

The 2nd shift was rated second to incur recordable accidents out of the three represented with a 77.8% affirmative rate.

Table 4.

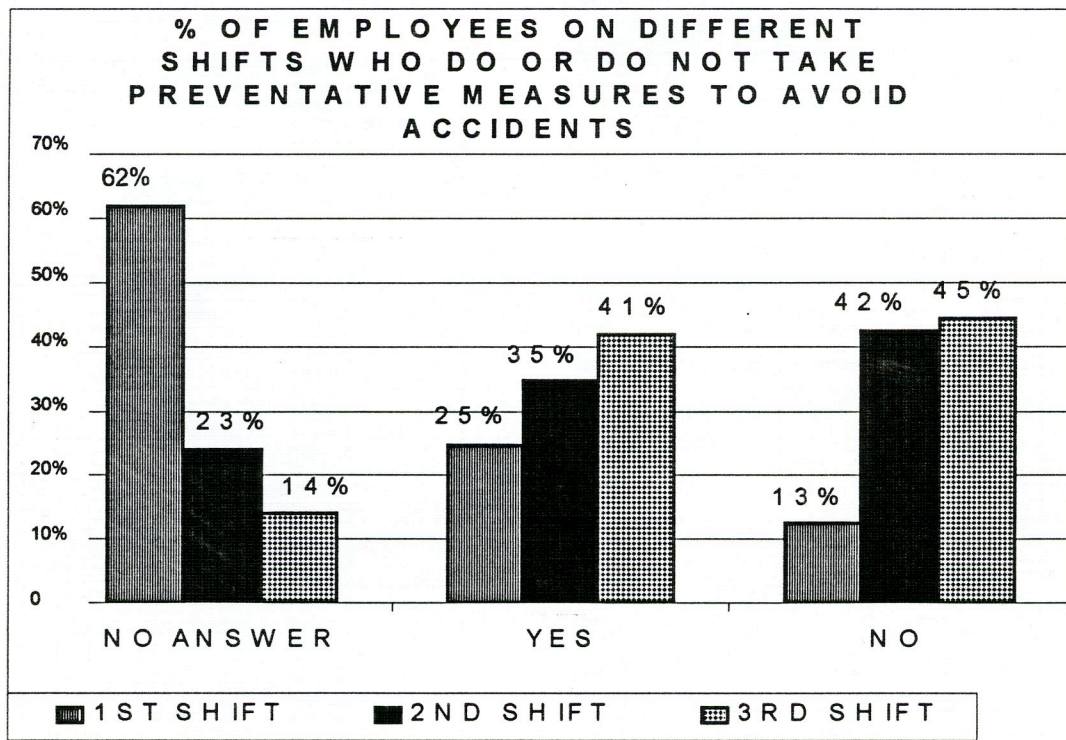
RECORDABLE INJURY * SHIFT EMPLOYEE WORKS Crosstabulation

			SHIFT EMPLOYEE WORKS			Total
			1ST SHIFT	2ND SHIFT	3RD SHIFT	
RECORDABLE INJURY	YES	Count	10	14	18	42
		% within RECORDABLE INJURY	23.8%	33.3%	42.9%	100.0%
		% within SHIFT EMPLOYEE WORKS	50.0%	77.8%	81.8%	70.0%
		% of Total	16.7%	23.3%	30.0%	70.0%
	NO	Count	10	4	4	18
		% within RECORDABLE INJURY	55.6%	22.2%	22.2%	100.0%
		% within SHIFT EMPLOYEE WORKS	50.0%	22.2%	18.2%	30.0%
		% of Total	16.7%	6.7%	6.7%	30.0%
Total	Count	20	18	22	60	
	% within RECORDABLE INJURY	33.3%	30.0%	36.7%	100.0%	
	% within SHIFT EMPLOYEE WORKS	100.0%	100.0%	100.0%	100.0%	
	% of Total	33.3%	30.0%	36.7%	100.0%	

Nonetheless, reinforcement of safety policies, and focus on the job is more perpetual on all the shifts. However, the most prevalent shift that claims to have experienced injuries and has not taken preventative measures to avoid such accidents is 3rd shift.

Figure 5 identifies that 3rd shift was the highest rated shift to lack preventative measures to avoid accidents experienced by individuals with that of 1st shift and 3rd shift. Such injuries that could have been prevented but were recorded as prevention measures not taken may direct the question of why employees may not have taken precautionary measures in several areas to deter such incidents?

Figure 5.



Lost time injuries are injuries that have been recorded by OSHA, may be workman's compensation and require the employee to not attend work until well. As we identify individuals by job description to their perception of how well they believe their health to be, Table 5 shows that 40% of employees who work in the finishing department believe that based on their diet, hours of sleep, and overall physical well-being, they need some improvement, and 57.1% of the employees need little improvement. Most of the employees in the finishing department also believe that "yes" they consider themselves to be in good health/shape.

Table 5.

IN GOOD HEALTH? * EMPLOYEE'S POSITION Crosstabulation

		EMPLOYEE'S POSITION				Total
		PRESSMAN-PRINTING	PRESSMAN-CUTTING	STRIPPING	FINISHING	
IN GOOD HEALTH?	Count		2			2
	% within IN GOOD HEALTH?		100.0%			100.0%
	% within EMPLOYEE'S POSITION		14.3%			3.3%
	% of Total		3.3%			3.3%
NEEDS MUCH IMPROVEMENT	Count		4		2	6
	% within IN GOOD HEALTH?		66.7%		33.3%	100.0%
	% within EMPLOYEE'S POSITION		28.6%		7.7%	10.0%
	% of Total		6.7%		3.3%	10.0%
NEEDS SOME IMPROVEMENT	Count	10	6	2	12	30
	% within IN GOOD HEALTH?	33.3%	20.0%	6.7%	40.0%	100.0%
	% within EMPLOYEE'S POSITION	55.6%	42.9%	100.0%	46.2%	50.0%
	% of Total	16.7%	10.0%	3.3%	20.0%	50.0%
NEEDS LITTLE IMPROVEMENT	Count	6			8	14
	% within IN GOOD HEALTH?	42.9%			57.1%	100.0%
	% within EMPLOYEE'S POSITION	33.3%			30.8%	23.3%
	% of Total	10.0%			13.3%	23.3%
YES	Count	2	2		4	8
	% within IN GOOD HEALTH?	25.0%	25.0%		50.0%	100.0%
	% within EMPLOYEE'S POSITION	11.1%	14.3%		15.4%	13.3%
	% of Total	3.3%	3.3%		6.7%	13.3%
Total	Count	18	14	2	26	60
	% within IN GOOD HEALTH?	30.0%	23.3%	3.3%	43.3%	100.0%
	% within EMPLOYEE'S POSITION	100.0%	100.0%	100.0%	100.0%	100.0%
	% of Total	30.0%	23.3%	3.3%	43.3%	100.0%

There may be a correlation between individuals who do not physically take care of themselves and the rate at which these individuals are filing accidents. Perhaps these employees have a tendency to encounter accidents due to the physical stress placed on them while simultaneously not being physically prepared for the demands. The researcher ran a cross-tab and gamma statistic on employees who do attempt to prioritize physical fitness into their lives and those people with the types of injuries experienced. As shown in Table 6, there is a substantial increase in the percentages of those *who do exercise and experience no injuries* just as there seems to be a substantial drop

in the percentages of *those who do not exercise and have filed an accident claim.*

Table 6.

Symmetric Measures

TYPE OF LOST TIME INJURY * TYPE OF EXERCISE Crosstabulation

			TYPE OF EXERCISE						Total
			NO EXERCISE	WALK	JOG	BIKE	OTHER	MULTIPLE EXERCISES	
TYPE OF LOST TIME INJURY	NO LOST TIME INJURY	Count	8	16		2	2	12	40
		% within TYPE OF LOST TIME INJURY	20.0%	40.0%		5.0%	5.0%	30.0%	100.0%
		% within TYPE OF EXERCISE	80.0%	66.7%		100.0%	100.0%	60.0%	66.7%
		% of Total	13.3%	26.7%		3.3%	3.3%	20.0%	66.7%
	BACK STRAIN	Count	2	4				4	10
		% within TYPE OF LOST TIME INJURY	20.0%	40.0%				40.0%	100.0%
		% within TYPE OF EXERCISE	20.0%	16.7%				20.0%	16.7%
		% of Total	3.3%	6.7%				6.7%	16.7%
	OTHER	Count		4	2			2	8
		% within TYPE OF LOST TIME INJURY		50.0%	25.0%			25.0%	100.0%
		% within TYPE OF EXERCISE		16.7%	100.0%			10.0%	13.3%
		% of Total		6.7%	3.3%			3.3%	13.3%
	MORE THAN ONE LOST TIME	Count						2	2
		% within TYPE OF LOST TIME INJURY						100.0%	100.0%
		% within TYPE OF EXERCISE						10.0%	3.3%
		% of Total						3.3%	3.3%
	Total	Count	10	24	2	2	2	20	60
		% within TYPE OF LOST TIME INJURY	16.7%	40.0%	3.3%	3.3%	3.3%	33.3%	100.0%
		% within TYPE OF EXERCISE	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
		% of Total	16.7%	40.0%	3.3%	3.3%	3.3%	33.3%	100.0%

The correlation *types of exercises* has with *lost time accidents* is $-.022$ in

Table 7. It seems that the more physically demanding the exercise (walking being the lowest level of activity, biking/jogging and other being the middle level of activity and multiple exercises being the highest level of physical activity) the greater probability of no injuries.

Table 7.

Correlations

		LOST TIME ACCIDENT	FREQUENCY OF EXERCISE
LOST TIME ACCIDENT	Pearson Correlation	1.000	.022
	Sig. (2-tailed)	.	.870
	N	60	60
FREQUENCY OF EXERCISE	Pearson Correlation	.022	1.000
	Sig. (2-tailed)	.870	.
	N	60	60

The final comparison of variables to eliminate characteristics of employee history, lifestyle and perception will identify significance in safety as it shows relationships to those individuals who have experienced an injury, have a level of physical well being, and a confidence level in safety training. This multivariate analysis in Table 8 shows a pattern in increased percentages for those who are physically in good health who believe the company also has their best interest in mind by providing a safe working environment. This is on the basis of considering the result of recordable injuries. There is a higher allocation of employee's health to be the concern and the underlying link to injuries as opposed to the lesser variable of ACP Company not providing the employees a safe and comprehensive working atmosphere.

In Table 8 this is presented with a 50.0% representation of people to need some improvement in their health with those having a 43.3% positive perception about the job ACP Company is doing in providing for a safe work place.

Table 8.

SAFE CONDITIONS PROVIDED * IN GOOD HEALTH? Crosstabulation

			IN GOOD HEALTH?				Total
			NO	NEEDS MUCH IMPROVEMENT	NEEDS SOME IMPROVEMENT	NEEDS LITTLE IMPROVEMENT	
SAFE CONDITIONS PROVIDED	STRONGLY AGREE	Count		2	2	2	6
		% within SAFE CONDITIONS PROVIDED		33.3%	33.3%	33.3%	100.0%
		% within IN GOOD HEALTH?		33.3%	6.7%	14.3%	10.0%
		% of Total		3.3%	3.3%	3.3%	10.0%
	AGREE	Count	2		10	6	26
		% within SAFE CONDITIONS PROVIDED	7.7%		38.5%	23.1%	100.0%
		% within IN GOOD HEALTH?	100.0%		33.3%	42.9%	43.3%
		% of Total	3.3%		16.7%	10.0%	43.3%
	MODERATELY AGREE	Count		2	14	6	22
		% within SAFE CONDITIONS PROVIDED		9.1%	63.6%	27.3%	100.0%
		% within IN GOOD HEALTH?		33.3%	46.7%	42.9%	36.7%
		% of Total		3.3%	23.3%	10.0%	36.7%
	DISAGREE	Count		2	4		6
		% within SAFE CONDITIONS PROVIDED		33.3%	66.7%		100.0%
		% within IN GOOD HEALTH?		33.3%	13.3%		10.0%
		% of Total		3.3%	6.7%		10.0%
	Total	Count	2	6	30	14	60
		% within SAFE CONDITIONS PROVIDED	3.3%	10.0%	50.0%	23.3%	100.0%
		% within IN GOOD HEALTH?	100.0%	100.0%	100.0%	100.0%	100.0%
		% of Total	3.3%	10.0%	50.0%	23.3%	100.0%

CHAPTER 5

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Summary

The purpose of this research was to investigate the relationship between employee wellness and safety in the workplace at ACP Company. Both the employer and employees contribute to the factors associated with safety records. A survey given randomly to 60 employees to provide an assessment on safety in a production environment. It included safety requirements, awareness and results as they relate to employee perception, ability and welfare.

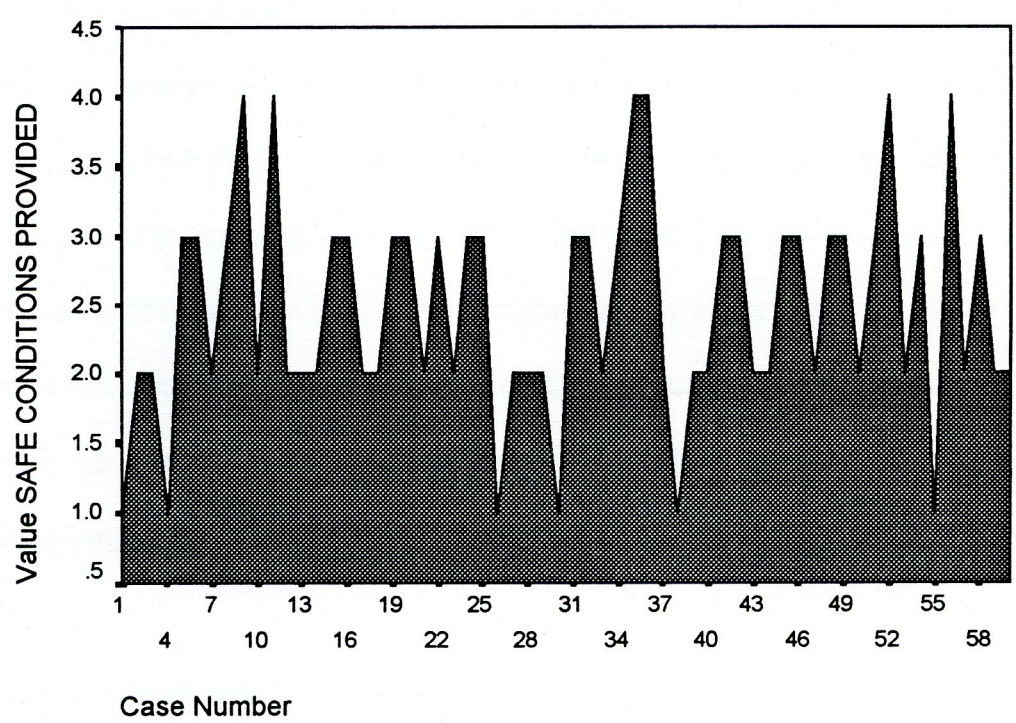
This process was successful with a response rate of 100% for all participants chosen to take the survey. The survey developed by this researcher included items on age, work experience, lifestyle, diet, exercise, sleep habits, attentiveness, injury history and perception of safety awareness. The method of analysis was to assign values to each variable and computed on a percentage and frequency level. Correlation coefficient and gamma statistics were also included in the data translation to lead to a conclusion. A comparison of age, work experience, lifestyle, diet, exercise, sleep habits, attentiveness, injury history, and understanding of safety awareness, indicated relationships between employee wellness and safety in the workplace. More specifically, the primary

candidates most apt to file a lost time accident were females on 3rd shift working in the finishing department. The reasons for filing those types of accidents were employees not maintaining the physical proficiency required to do the work, and not taking preventative measures to avoid such injuries.

Conclusions

ACP Company must emphasize the meaningful significance of a good safety record. It is essential for companies such as this to be a world-class organization in the industry as well as promoting safe and healthy lives for its staff while at work and at home. Figure 6 shows a close split of employee's view of how well ACP Company is doing by providing safe working conditions. Of the 60 cases shown on the axis, the value of 2.0 is of employees who moderately agree ACP Company provides safe working conditions for them. The value of 1.0 is of employees who disagree that ACP Company is doing its job of providing a safe workplace. The values of 3.0 and 4.0 are reflective of agree and strongly agree responses. The value of 2.0 and 3.0 were the most popular responses. This can be interpreted as a 50/50% of how ACP employee's perceive the working conditions to be. Although other aspects of an employee's life and experience with this company may have influenced the answer to this question. Nonetheless, ACP Company has much work to do to strive toward standards of excellence. Perhaps a goal to make this variable a 60-40 split followed by a 70-30 split in the direction of improvement.

Figure 6.



As the information presented expresses particular variables of significant value in defining the cognition and causes for unsafe occurrences, the profile of ACP Company employees is as follows:

who the employees are has been narrowed down to *females*

where the injuries are occurring is the *finishing department*

what is the most frequent phenomena is the *lost time accident*

when the incidents happen is on *3rd shift*

how remains on several levels of:

not taking preventative measures (wearing safety

equipment/practicing safety behavior) to avoid injuries

not maintaining the physical proficiency required, demanded and placed upon them.

What variables have the greatest impact on the probability of injury incidents: safety training and awareness or the employee's perception and physical health? ACP Company may assume from the data presented that the physical health and well being of employees has the greatest impact on the probability of injury turn out. ACP Company or any other company however should not adopt this assumption, as a safety record excuse. It merely states that, of several variables, employee alertness and health status for physical on-the-job requirements is in need of much improvement.

Recommendations

ACP Company may strategize approaches in other areas that also need improvement. Suggestions for improving the safety record may be: encouraging employees to participate in the company-paid health club memberships offered, a cash or other type of incentive for no injuries or sick days recorded, periodic health evaluations (such as hearing tests), appropriate job restrictions, a competitive gain-share program for outstanding work performance, and/or continued safety education in all areas of environmental surroundings and personal health.

In private companies, the bottom line is profit. More importantly, safety must come first in order to obtain that profit. Safety must not only be a priority with the company, but with its employees. The company must make all efforts

possible to advocate and secure the welfare of its employees, that being the most essential standard of excellence.

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APPENDIX A

SURVEY MEMORANDUM

MEMO

Date: July 12, 1999
To: ACP Employees
From: Kay Ferguson
Re: Research Collection

To those of you who have been selected to participate in answering this survey, thank you. The information you provide will be used to compile data and translate the value of your answers into comparisons, relationships, causes and results about the phenomena of employee wellness and how it relates to occupational safety. The selection of participants was random with a close-to-equal representation of men and women, and 1st, 2nd, and 3rd shift employees. The identity of the individual participants and their responses to the survey will be anonymous. The reporting of the data will be done in summary format only for the respondents as a whole. The survey completion should only take a few minutes and will be collected by your supervisor. They will be returned to me in an envelope to ensure anonymity. Once again, thank you for your time and consideration.

APPENDIX B

SURVEY

PLEASE CHECK THE BOX NEXT TO THE ANSWER(S) THAT APPLY TO YOU. Please show answers to reflect your work history at *this* company. Please do not write your name.

1. _____ What sex are you?

MALE

☐

FEMALE

☐

2. _____ What age category do you fall under?

18-24 YEARS

☐

25-34 YEARS

☐

35-44 YEARS

☐

45-54 YEARS

☐

55 AND OVER

☐

3. _____ What shift are you currently working? Choose only one.

1ST SHIFT

☐

2ND SHIFT

☐

3RD SHIFT

☐

4. _____ What position do you currently have? Choose all that apply.

PLATEMAKING

☐

SHEETING

☐

PRESSMAN - PRINTING

☐

DIE MAKING

☐

PRESSMAN - CUTTING

☐

STRIPPING

☐

FINISHING

☐

SHIPPING/ RECEIVING

☐

5. What physical actions does your position require you to do? Choose all that apply.

HEAVY LIFTING ☐

MODERATE LIFTING ☐

LIGHT LIFTING ☐

HILO-DRIVING ☐

HEAVY MACHINE OPERATION ☐

MODERATE MACHINE OPERATION ☐

LIGHT MACHINE OPERATION ☐

HAND/ARM MOTIONS ☐

BACK SUPPORT ☐

LEG MOTION ☐

OTHER _____ ☐

MULTIPLE ACTIONS ☐

6. Do you participate in the health club memberships offered? Choose

only one.

YES ☐

NO ☐

7. How often do you exercise? Choose only one.

DO NOT ☐

1-3 TIMES A WEEK ☐

4 OR MORE TIMES A WEEK ☐

8. If you do exercise, what type of exercises do you do? Choose all that apply.

- NO EXERCISE ☐
- WALK ☐
- JOG ☐
- BIKE ☐
- SWIM ☐
- WEIGHTLIFTING ☐
- AEROBICS ☐
- OTHER ☐
- MULTIPLE EXERCISES ☐

9. Considering diet, hours of sleep, and overall physical well-being, would you consider yourself to be in good health/shape? Choose only one.

- NO ☐
- NEEDS MUCH IMPROVEMENT ☐
- NEEDS SOME IMPROVEMENT ☐
- NEEDS LITTLE IMPROVEMENT ☐
- YES ☐

10. Do feel you are alert and attentive when you are at work? Choose only one.

- NEVER ☐
- SOMETIMES ☐
- ALWAYS ☐

11. Do you feel you are focused on your work and in tune to safety measures while on the job? Choose only one.

NEVER ☐

SOMETIMES ☐

ALWAYS ☐

12. Do you feel you have been properly trained in all the necessary safety areas? Choose only one.

YES ☐

NO ☐

13. Have you ever had a recordable injury or injuries? Choose only one.

YES ☐

NO ☐

14. If so, what type of injury or injuries? Choose all that apply.

NO RECORDABLE INJURY ☐

LACERATION ☐

SHOULDER STRAIN ☐

BACK STRAIN ☐

LEG STRAIN ☐

CARPAL TUNNEL ☐

OTHER _____ ☐

MULTIPLE INJURIES ☐

15. Have you ever had a lost time accident or accidents? Choose only one.

YES ☐ NO ☐

16. If so, what type of injury or injuries resulted? Choose all that apply.

NO LOST TIME INJURY ☐

LACERATION ☐

SHOULDER STRAIN ☐

BACK STRAIN ☐

LEG STRAIN ☐

CARPAL TUNNEL ☐

OTHER ☐

MORE THAN ONE LOST TIME INJURY ☐

17. If you have experienced an injury/accident, were you taking preventative measures (wearing protective equipment/practicing safety behavior) to avoid such an incident? Choose only one.

NO ANSWER ☐

YES ☐

NO ☐

18. I feel this company provides all the necessary conditions to ensure the facility to be a safe working environment for the employees.

Choose only one.

STRONGLY AGREE ☐

AGREE ☐

MODERATELY AGREE ☐

DISAGREE ☐

STRONGLY DISAGREE ☐

Thank you for your time.

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