ISSN: 3482 - 4916
Volume 8, Number 2, 2023
International Journal of Accounting, Economics and Management

WORKPLACE SAFETY AND EMPLOYEE HEALTH IN OIL AND GAS SECTORS IN PORT HARCOURT METROPOLIS

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ABSTRACT

The study focused on workplace safety and employee health in oil and gas sectors in Port Harcourt Metropolis. The main objective was to determine the relationship between dimensions of workplace safety (physical and ergonomic safety) and measures of employee health (mental and social health). Four research questions and hypotheses were raised to guide the study. The target population was 5 selected oil and gas sectors through which 40 respondents were purposively taken as the sample size. The structured questionnaire was used to validate the instrument with 4 likert scale, analyzed through SPSS. The study revealed that physical and ergonomic safety correlates with mental and social health. Therefore, the study concluded that prioritizing workplace safety is crucial for the well-being of employees. Hence the study recommended that oil and gas sectors should develop and enforce a well-defined safety program that addresses potential hazards, including safety training for employees, and establishes clear safety protocols and procedures.

Keyword: Workplace safety, physical safety, ergonomic safety, employee health, mental and social health.

INTRODUCTION

Employee health is a critical aspect of oil and gas organization's success and productivity. It refers to the physical, mental, and emotional well-being of employees within the workplace. Recognizing the importance of employee health, oil and gas sectors are increasingly implementing comprehensive health programs to create a supportive and thriving work environment. Such programs aim to promote a healthy lifestyle, prevent illness and injury, and provide necessary support and resources to enhance overall well-being. By prioritizing employee health, organizations can not only improve individual employee satisfaction and engagement but also foster a positive and high-performing work culture. Jane (2018) and John (2020) have highlighted the significance of prioritizing employee well-being within the workplace. By focusing on the physical, mental, and emotional health of employees, organizations can create an environment that fosters engagement, productivity, and overall job satisfaction.

The well-being of employees has a direct impact on their performance, productivity, and overall organizational success. When employees are in good health, both physically and mentally, they are more likely to be motivated, focused, and energetic. Conversely, unhealthy employees may experience higher absenteeism rates, reduced productivity, and increased healthcare costs for the organization. By investing in employee health initiatives, organizations can effectively reduce these negative consequences while reaping the benefits of a healthy workforce. John (2020) emphasizes that promoting employee health not only improves individual well-being but also enhances the overall organizational culture. When employees feel supported and valued, they are more likely to be committed to their work, exhibit higher levels of engagement, and contribute to a positive and collaborative work environment. Moreover, an organization that demonstrates a genuine commitment to employee health can attract and retain top talent, as individuals are increasingly seeking employers that prioritize their well-being. Ultimately, prioritizing employee health is not only a moral imperative but also a strategic decision that can drive organizational growth and success in the long run.

Statement of the Problem

The health and well-being of employees in oil and gas sectors are critical factors that can significantly impact productivity, job satisfaction, and overall organizational performance. However, many organizations continue to face challenges in effectively managing and promoting employee health. One of the primary issues is the lack of awareness and understanding about the importance of employee health and its link with oil and gas firm's success. This knowledge gap hampers the implementation of comprehensive health programs and strategies, resulting in suboptimal employee health outcomes.

Another significant problem related to employee health in oil and gas sector is the absence of a holistic approach to addressing health issues. While some sectors may offer basic wellness initiatives such as gym memberships or sporadic health campaigns, there is often a lack of comprehensive and sustained efforts to support employees' physical, mental, and emotional well-being. This gap in implementing integrated health programs prevents organizations from effectively tackling the diverse health needs of their employees, leading to increased absenteeism, decreased productivity, and higher healthcare costs.

Despite the growing recognition of the importance of employee health in oil and gas sectors, there remains a significant empirical gap in understanding the specific factors that influence employee health outcomes. This gap in implementing integrated health programs prevents organizations from effectively tackling the diverse health needs of their employees, leading to increased absenteeism, decreased productivity, and higher healthcare costs (Johnson, 2019). While some studies have explored the general relationship between employee health and organizational performance, there is a lack of in-depth research that examines the unique organizational and contextual factors that impact employee health. This empirical gap makes it challenging for organizations to develop targeted interventions and policies to address employee health issues effectively.

Conceptual Framework

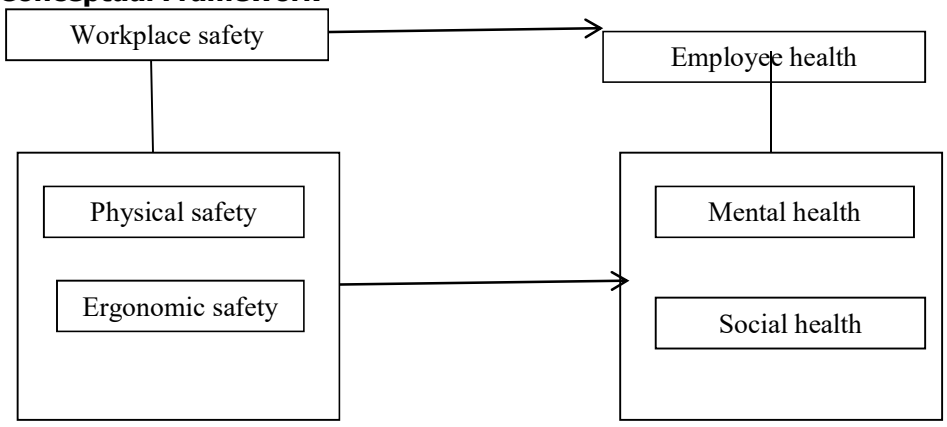

Figure 1.1: Conceptual framework on workplace safety and employee health.
Source: Adopted from literature reviews (2023).

Aim and Objectives of the Study

The main purpose was to determine the relationship that exists between workplace safety and employee health in 5 selected oil and gas sectors. But the specific objectives are:

1. To examine the relationship between physical safety and employee mental health in 5 selected oil and gas sectors in Port Harcourt metropolis.
2. To examine the relationship between physical safety and employee social health in 5 selected oil and gas sectors in Port Harcourt metropolis.
3. To examine the relationship between ergonomic safety and employee mental health in 5 selected oil and gas sectors in Port Harcourt metropolis.

4. To examine the relationship between physical safety and employee social health in 5 selected oil and gas sectors in Port Harcourt metropolis.

Research Questions

Below are the research questions guided the study:

1. What is the relationship that exists between physical safety and employee mental in 5 selected oil and gas sectors in Port Harcourt metropolis?
2. What is the relationship that exists between physical safety and employee social health in 5 selected oil and gas sectors in Port Harcourt metropolis?
3. What is the relationship that exists between ergonomic safety and employee mental in 5 selected oil and gas sectors in Port Harcourt metropolis?
4. What is the relationship that exists between ergonomic safety and employee social health in 5 selected oil and gas sectors in Port Harcourt metropolis?

Hypotheses of the Study

H_{01}: There is no significant relationship between physical safety and employee mental in 5 selected oil and gas sectors in Port Harcourt

H_{02}: There is no significant relationship between physical safety and employee social health in 5 selected oil and gas sectors in Port Harcourt

H_{03}: There is no significant relationship between ergonomic safety and employee mental in 5 selected oil and gas sectors in Port Harcourt

H_{04}: There is no significant relationship between ergonomic safety and employee social health in 5 selected oil and gas sectors in Port Harcourt

Literature Review

Workplace safety

Workplace safety refers to the conditions and practices that are established to protect employees from hazards, injuries, and illnesses in the work environment (Mark et al. 2019). Workplace safety encompasses the proactive measures taken to identify, assess, and control risks in the workplace to prevent accidents, injuries, and illnesses (David, 2017). Workplace safety refers to the efforts made by organizations to ensure that employees are protected from hazards, both physical and psychological, while performing their job duties (Stavroula & Robert, 2014). Workplace safety involves the systematic identification and management of hazards, as well as the implementation of preventive measures, to minimize the risk of injury or harm to employees (Author: 2005). Workplace safety refers to the organizational efforts and practices aimed at creating and maintaining a work environment that minimizes the risk of accidents, injuries, and illnesses for employees (David & Matthew, 2011).

Dimensions of Workplace Safety

For the purpose of this research, we consider physical and ergonomic safety.

Physical safety

Physical safety refers to the protection of individuals from physical harm or injury in their immediate environment (Hale, 2005). Physical safety encompasses the prevention of accidents, injuries, and occupational illnesses through the implementation of safety measures and the identification and mitigation of hazards (Hinze, 2002). Physical safety involves the establishment and maintenance of conditions and practices that ensure the well-being and protection of individuals from harm, including the prevention of physical violence and accidents (Kelloway et al., 2012). Physical safety refers to the provision of a secure and hazard-free environment, which minimizes the risk of bodily harm and promotes the well-being of individuals (Smith, 2010). Physical safety encompasses the protection of individuals from physical hazards and the promotion of a safe and healthy work environment through the identification, assessment, and control of risks (Haslam et al., 2005). Physical safety involves the implementation of measures and strategies to prevent accidents,

injuries, and occupational diseases, ensuring the physical well-being and security of individuals (Sharma et al., 2019).

Ergonomic safety

Ergonomic safety refers to the design and arrangement of workspaces and tools that promote the well-being and comfort of workers, minimizing the risk of musculoskeletal disorders and other work-related injuries (Mark, 2003). Ergonomic safety encompasses the identification, evaluation, and control of physical and environmental factors that may lead to discomfort, fatigue, or injury in the workplace, with the aim of optimizing human performance and well-being (Alan, 2008). Ergonomic safety is the application of ergonomic principles to prevent work-related injuries, by adapting work tasks, equipment, and the work environment to the capabilities and limitations of the human body (David, 2010). Ergonomic safety involves the systematic design and arrangement of work systems to ensure a good fit between workers and their tasks, taking into consideration human capabilities, limitations, and the physical demands of the job (Pascale, 2011). Ergonomic safety focuses on the prevention of physical and psychological strain caused by the interaction between individuals, their work tasks, and the work environment, with the goal of reducing the risk of injuries and promoting well-being (Esa-Pekka, 2012). Ergonomic safety entails the optimization of work conditions through the ergonomic design of workstations, tools, and processes, aiming to minimize the physical and mental burden on workers and enhance their productivity and satisfaction (Stavros, 2017).

Concept of Employee Health

Employee health refers to the physical, mental, and social well-being of individuals in the workplace, encompassing both the absence of illness and the promotion of positive health outcomes (Leka, et al., 2017). Employee health represents the state of an individual's physical and mental condition in relation to their work environment, including factors such as occupational hazards, job demands, and psychosocial stressors (Kouvonen et al., 2012). Employee health refers to the overall wellness and vitality of workers, taking into account their physical fitness, emotional well-being, and the absence of work-related injuries or illnesses (Biron, et al., 2015). Employee health denotes the multidimensional concept that encompasses the physical, mental, and social dimensions of well-being in the workplace, including factors such as work-life balance, job satisfaction, and access to healthcare (Hassard et al., 2018). Employee health signifies the extent to which workers are able to perform their job duties effectively and without harm to their physical or mental health, taking into consideration factors such as work-related stress, workload, and job control (Siegrist, 2008). Employee health encompasses the dynamic interplay between individual, organizational, and environmental factors that influence the well-being and productivity of workers, highlighting the importance of prevention, early intervention, and the promotion of healthy lifestyles (Nielsen, et al., 2017).

Measures of Employee Health

For the purpose of this research let consider mental health and social health of the employee been the measures of employee health.

Mental health

Mental health refers to a state of well-being in which an individual realizes their own abilities, can cope with the normal stresses of life, can work productively, and is able to make a contribution to their community (World Health Organization 2001). Mental health is defined as a state of emotional and psychological well-being, in which an individual is able to function effectively in society, maintain satisfying relationships, and adapt to change and adversity (Corey, 2002). Mental health involves the ability to think, feel, and act in ways that promote a sense of well-being, self-worth, and positive interpersonal relationships. It also encompasses the ability to handle stress and adapt to change (Jane & Thomas, 2004).

Mental health is defined as a state of psychological and emotional well-being that enables an individual to engage in productive activities, enjoy fulfilling relationships, and cope with the demands of daily life (Corey, 2005).

Social health

Social health encompasses the quality and quantity of an individual's social networks, support systems, and the sense of belongingness within their community (Cohen, 2004). Social health involves the ability to engage in reciprocal and mutually satisfying relationships, to adapt to different social situations, and to participate in activities that contribute to the collective well-being of society (Keyes, 2005). Social health is the degree to which individuals are integrated into a social network, experience positive interactions with others, and possess a sense of belonging and social cohesion (Putnam, 2007). Social health is the capacity to maintain meaningful and supportive relationships, exhibit empathy and compassion, and actively contribute to the social fabric of one's community (Lee & Robbins, 2015).

Relationship between the Variables; Physical safety and employee health

In the study of Kivimaki et al (2015) found that employees who perceived their work environment to be physically safe had lower levels of stress, better mental well-being, and higher job satisfaction, thereby indicating a positive impact on employee health. Even Clarke et al. (2006) discovered that a safe work environment positively influenced employee health by increasing their engagement in safety-related behaviors. When employees felt physically safe, they were more likely to actively participate in safety initiatives and comply with safety protocols, leading to improved health outcomes. Finally, Zohar and Luria (2005), the findings reveal the importance of physical safety in shaping the overall safety climate of an organization. When employees perceived their work environment as safe, it had a direct positive impact on their well-being and reduced the occurrence of work-related injuries, ultimately promoting better employee health.

Ergonomic safety and employee health

The findings of the study revealed a significant positive correlation between ergonomic safety and employee health. Employees working in environments with higher ergonomic safety measures reported fewer musculoskeletal disorders, reduced levels of physical fatigue, and improved overall mental well-being compared to those in workplaces with lower ergonomic safety standards. Smith argues that providing ergonomic safety measures, such as adjustable workstations, proper lighting, supportive seating, and regular breaks, can contribute to a healthier workforce. By reducing the risk of physical strain and discomfort, employees are less prone to musculoskeletal injuries and related health issues (Smith, 2019).

Theoretical Review

This study anchored on The Health and Safety Climate Theory developed by Neal, Griffin and Hart (2000) and The Job Demands-Resources Model developed by Bakker and Demerouti (2007).

The Health and Safety Climate Theory (HSC) assumes that the perception of the workplace safety climate influences employees' behavior and their commitment to maintaining a safe and healthy work environment. According to this theory, if employees perceive that their organization places a high value on safety and health, they are more likely to engage in safe work practices and actively contribute to improving workplace safety. This theory emphasizes the importance of management commitment, leadership, and communication in creating a positive safety climate.

The Job Demands-Resources Model Developed by Bakker and Demerouti (2007)

The Job Demands-Resources Model (JD-R) assumes that the work environment comprises both job demands and job resources, which can influence employee health and well-being. Job demands refer to the physical, psychological, and social aspects of the job that require sustained effort and

may lead to strain. Job resources, on the other hand, refer to the physical, psychological, social, or organizational aspects of the job that can help employees achieve work goals, reduce job demands, and stimulate personal growth. According to this theory, a balance between job demands and job resources is crucial for promoting employee health, well-being, and workplace safety.

Methods

The study adopted cross sectional survey research design. The targeted population was 5 selected Oil and Gas sectors (Aftrac Limited, Ana Industries Limited, Atlantic Fluids & Integrated Services Ltd, B. G. Technical Limited and Drillpet International Limited) in Port Harcourt Metropolis which give the total of 40 seniors staff taken as respondent. The sample size was 40 through purposive technique. Given the fact 8 seniors staff from each firm. Besides, the instrument used was structured validated questionnaire with 4 likert scale strongly agree to strongly disagree through the use of SPSS.

Results and Discussions of Findings

H_{01}: There is no statistical significant relationship between physical safety and measures of employee health.

Table 1: Analysis of the effect of *physical safety* on mental health

Correlations

			Physical safety	Mental health
Spearman's rho	Physical safety	Correlation Coefficient	1.000	.402**
		Sig. (2-tailed)	.	.000
		N	40	40
	Mental health	Correlation Coefficient	.402**	1.000
		Sig. (2-tailed)	.000	.
		N	40	40

**. Correlation is significant at the 0.01 level (2-tailed).

Table 1 reveals that the Spearman Correlation coefficient is 0.402 which reflect a strong positive linear relationship between physical safety and mental health. And the Correlation test is highly significance at ($p<0.001$). Positive relationship means that as physical safety increases mental health tends to get better.

Following this finding, the study concludes that there is a relationship between physical safety and mental health. Therefore null hypothesis was rejected.

Hypothesis Two.

H_{02}: There is no statistical significant relationship between physical safety and second measures of employee health.

Table 2: Analysis of the effect of physical safety on *social health*

Correlations

			Physical safety	Social health
Spearman's rho	Physical safety	Correlation Coefficient	1.000	.479**
		Sig. (2-tailed)	.	.000
		N	40	40

	Social health	Correlation Coefficient	.479**	1.000
		Sig. (2-tailed)	.000	.
		N	40	40

**. Correlation is significant at the 0.01 level (2-tailed).

Table 2 reveals that the Spearman Correlation coefficient is 0.479 which reflect a strong positive linear relationship between Physical safety and social health. And the Correlation test is highly significance at ($p<0.001$). Positive relationship means that as physical safety increases social health tends to increase. Following this finding, the study concludes that there is a relationship between physical safety and social health. Therefore null hypothesis was rejected.

Hypothesis Three.

H_{03}: There is no statistical significant relationship between ergonomic safety and mental health.

Table 4.7: Analysis of the effect of *ergonomic safety* on *mental health*

Correlations

			Ergonomic safety	Mental health
Spearman's rho	Ergonomic safety	Correlation Coefficient	1.000	.571**
		Sig. (2-tailed)	.	.000
		N	204	204
	Mental health	Correlation Coefficient	.571**	1.000
		Sig. (2-tailed)	.000	.
		N	204	204

**. Correlation is significant at the 0.01 level (2-tailed).

Table 3 reveals that the Spearman Correlation coefficient is 0.571 which reflect a strong positive linear relationship between ergonomic safety and mental health. And the Correlation test is highly significance at ($p<0.001$). Positive relationship means that as ergonomic safety increases mental health tends to increase.

Following this finding, the study concludes that there is a relationship between ergonomic safety and mental health. Therefore null hypothesis was rejected.

Hypothesis Four.

H_{04}: There is no statistical significant relationship between* ergonomic safety *and social health.

Table 4.8: Analysis of the effect of ergonomic safety *and social health.*

Correlations

			Ergonomic safety	Social health
Spearman's rho	Ergonomic safety	Correlation Coefficient	1.000	.598**
		Sig. (2-tailed)	.	.000
		N	40	40
	Social health	Correlation Coefficient	.598**	1.000
		Sig. (2-tailed)	.000	.

	N	40	40

**. Correlation is significant at the 0.01 level (2-tailed).

Table 4 reveals that the Spearman Correlation coefficient is 0.598 which reflect a strong positive linear relationship between ergonomic safety and social health. And the Correlation test is highly significance at ($p<0.001$). Positive relationship means that as ergonomic safety increases social health tends to increase. Following this finding, the study concludes that there is a relationship between ergonomic safety and social health. Therefore null hypothesis was rejected.

DISCUSSION

For the first finding in table 1 and 2; there is strong relationship between physical safety and measures of employee health (mental and social health). Given the fact that, Implementing safety protocols and providing necessary safety equipment significantly reduces the risk of accidents, such as slips, trips, falls, and collisions. Fewer accidents mean fewer injuries and less time off work, leading to improved employee health. However, Knowing that their workplace is designed with their safety in mind can alleviate stress and anxiety among employees. Feeling physically secure at work can positively influence mental and social health, leading to better focus, reduced stress, and improved overall job satisfaction. These findings agreed with David and Alex (2017).

Then table 3 and 4; there is strong relationship ergonomic safety and measures of employee health (mental and social health). Proper ergonomic design helps prevent workplace injuries and musculoskeletal disorders (MSDs) such as back pain, carpal tunnel syndrome, and neck strain. By aligning workstations, chairs, keyboards, and other tools with the natural movements and postures of the human body, the risk of repetitive strain injuries is minimized. An environment that supports ergonomic principles can help reduce stress and mental fatigue, leading to higher job satisfaction and lower rates of burnout. By prioritizing ergonomics in the workplace, organizations can create an environment that fosters physical comfort, mental well-being, and overall job satisfaction, leading to improved productivity and reduced health-related costs. These argeed with Ron et al. (2007).

CONCLUSION

Prioritizing workplace safety is crucial for the well-being and productivity of employees. By implementing robust safety measures and providing adequate training, organizations can create a secure and healthy work environment. This not only protects employees from physical harm and reduces the risk of accidents but also fosters a culture of trust and care. When employees feel safe, they are more likely to be engaged, motivated, and perform at their best, leading to increased productivity and overall organizational success. Moreover, a focus on workplace safety demonstrates a company's commitment to its workforce, enhancing its reputation and attracting top talent. Therefore, investing in workplace safety is not just a legal and ethical obligation but also a strategic decision that yields long-term benefits for both employees and the organization as a whole.

RECOMMENDATIONS

The following were the recommendation made:

1. Oil and gas sector should develop and enforce a well-defined safety program that addresses potential hazards, includes safety training for employees, and establishes clear safety protocols and procedures.
2. Oil and gas sectors should regularly inspect the workplace to identify potential hazards and address them promptly.
3. Oil and gas sectors should provide adjustable furniture, ergonomic tools, and educate employees on proper posture, stretching exercises, and regular breaks to reduce the risk of injuries caused by repetitive motions or prolonged sitting.
4. Oil and gas sector should foster a culture of open communication where employees feel comfortable reporting safety concerns, near misses, and accidents without fear of reprisal.

5. Oil and gas sector should ensure that employees receive comprehensive training on safety procedures, emergency response protocols, proper use of equipment and machinery, and any specific hazards associated with their roles.
6. Oil and gas sector should recognize the importance of mental health in the workplace and provide resources and support for employees.

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