

Assessment of Psychosocial Hazards among Workers at the University of Port Harcourt

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Abstract

Background: The nature of work as well as the working environment all plays important roles on both health and production at work places and in organizations. Workers often times are exposed to poor and unfriendly working environment, with resultant multiple work-related adverse health conditions, decreased motivation and low productivity. In spite of these, the issue of psychosocial hazards appears to receive little attention by management workplaces including the education and teaching sector, government and relevant regulatory bodies.

Aim: The main aim of this study was to assess the prevalence as well as the pattern of psychosocial hazards among University of Port Harcourt Workers.

Methodology: This study followed the standard ethical approval method used by the University of Port Harcourt, with appropriate computed sample size. The participants for this study duly gave their consent. A total of 600 study questionnaires were distributed to respondents who met the selection criteria. Data was collected on working days using the systematic random sampling. A multistage sampling method was adopted in the selection of participants, and study questionnaires administered to them. Subjects were assisted by making clarification where necessary. The participants for the study after successfully completing the questionnaires were given health education awareness. A Walk through Survey before the actual commencement of the study was done and the outcome was communicated to both staff and the management of the University in different meetings. The data were analyzed using the SPSS 20th edition software. The significance level was set at 0.05, and a 95% confidence interval was set for the study and 0.05 P value was considered statistically significant.

Results: The study revealed that there was prevalence of psychosocial hazards of 62.2% among workers at the University of Port Harcourt. Work place bullying was the most common and was represented by verbal abuse as the most prevalent (43.9%). Workplace abuse was the second group of psychosocial hazards with highest occurrence, of which being screamed or yelled at was (39.4%). Work-related stress was the most prevalent single hazards found in the study with a prevalence of 62.7%. For Work place related fatigue, environmental stress was most prevalent psychosocial hazard with 52.3% while unwanted sexual attention and sexual harassment in work place was (6.1%). Racial discrimination was, out of the seven (7) groups, the least prevalent psychosocial hazard among University of Port Harcourt workers with 7.0%. Work load had 98.2% and it was the most prevalent risk factor which the respondent perceived, and was followed by home-work interface with 82.0%. Further results showed that majority of respondents identified periodic in-service training (PIT) with 76.7%, as the most efficient and effective way to resolve and reduce psychosocial hazard in work place by University of Port Harcourt.

Conclusion: The study concluded that psychosocial hazards are common work place occurrence among University of Port Harcourt Workers. The respondents have identified few preventable risk factors as well as some remedial approaches to work place psychosocial hazards. The results also showed there is urgent need by University of Port Harcourt management to use appropriate health and occupational safety measures to reduce and curb the harmful incidences and occurrences of psychosocial hazards among workers in the University as well as improving the working environment and the overall wellbeing of workers for efficiency and adequate productivity.

Keywords: Psychosocial hazards; Depression; Environmental hazards; Globalization

Abbreviations: EU-OSHA: European Agency for Safety and Health at Work; WHO: World Health Organization; OHS: Occupation Health and Safety; CSDH: Commission on Social Determinants on Health; PIT: Periodic In-Service Training; EUW: Enlightenment of University Workers; OHSP: Occupation Health Safety Programme; ETS: Environmental Tobacco Smoke; PRIMA-EF: European Framework for Psychosocial Risk Management; MSD: Musculoskeletal Disorder; PTSD: Post Traumatic Stress Disorder; UNIPORT: University of Port Harcourt

Introduction

Background of the study

Rapid technological advancement and accelerated international

trade have no doubt jointly intensified the pressures of competitions among organizations. They aim mainly to exploit worker for more gains and reduce costs. This however, places a huge burden on employees of the need for high productivity and accountability for both

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private and public sectors, especially the public educational sectors, while the private sector often aimed at high output and to maximize profit. Nowadays, both private and public working environments have witnessed increased pressure on employees to execute and deliver services at consistently higher performance level. They sometimes even work for longer hours, with under staff numbers, with employment patterns that have no insurance or any form of workers' welfare or empowerment, coupled with unmatched reward system [1-5].

The aforementioned factors have been identified by many researchers as contributing factors in creating undue stress and an unfriendly work place, thus, increases the risk of occupational hazards and work place related psychological problems [1-4]. Thus stress is now recognized as one of the work related hazards and categorized as psychosocial hazard by the health and safety legislation [6,7]. Because the challenges of workplace related stress, and its effects on the employee's optimal productivity, performance, functionality and wellbeing, organizations, regulators, and occupational health and safety bodies have now placed a growing importance in the regard [5]. Though, psychosocial hazards could be referred to as the mental stresses in a work place, this may equally include the sources and areas of fatigue, as well as stress which are all nearly present in all work environment in both the private and public sectors. Psychosocial hazards are vital parts of the total stress characterized by work load, work structure, work design as well as the regulations in these workplaces, and therefore psychosocial hazards are an integral part of an overall risk assessment in the work places.

It is unarguably true that work provides a number of economic and other benefits. On the other hand, people at work face a variety of work related hazards owing to biological agents, chemicals, or physical factors, which may include an unfriendly or ill-defined ergonomic conditions, or allergens, or a series of complex safety risks, as well as other varied social (psychosocial) factors [8]. The nature of work and work place are all important contributors to worker's wellbeing and health [9], the wellbeing of the worker as well as his or her quality of life. The performance of any organization is as good as the health and wellbeing of its workers. The performance of the employees is the unit of measurement of the success of any organization.

The global socio-political developments have been observed to constantly tilt towards rapid globalization, free marketing system formation, the dynamic nature of the working environment, the significant demographic changes and its impact of the working environment, and advancement in ICTs, all exemplify a typical modern working environment in this present dispensation [10]. In the past few years, these important key variables, which are very much related to modern organizational management and their working environment, have no doubt resulted in the emergence of the new challenges and risks in occupational health and safety (OHS). Social (Psychosocial) hazards in the working environment have been identified as crucial work place related problems [11]. More issues like stress from work place and work related violence have now been recognized as major problems in occupational health and safety (OSH). The physical and psychosocial hazards within the working environment have been identified to pose potential threat and as such affect workers' health in both the developed and developing countries.

Cheng [12] succinctly, noted that though, there is currently dearth of research data on the nature of work related incidences, issues and challenges, and their impact on globalization, it is equally increasingly importance in addressing risk factors and other psychosocial stress arising from workplace and related environment in developing countries. It is essential to keep the developing countries in our sight,

considering that approximately 80% of the world work force resides in the developing world [13]. Psychological overload is caused by psychosocial risk factors. There is substantial evidence, and reasonable consensus, within the research community of industrialized countries of work aspects which are experienced as stressful and/or have the potential to harm [14].

Contemporary and emerging psychosocial risks, in recent studies have shown that workplace and related problems have gone beyond the traditional workplace-centered approach. Idris et al. [15] added that workplace problems may include other external factors such as globalization, increasing worker's vulnerability in the context of globalization, precarious nature of work contracts, that is, labour market being unsustainable and unstable, as well as job insecurity [16].

In general terms, the word 'psychosocial' simply refers to the interrelationships between individuals' their thoughts and behaviors as well as their social environment. In most literatures outside the Occupational Health and Safety (OHS) field, this term is often narrowly but diffusely viewed and refers to social environments such as family of origin, socioeconomic status and level of education. Whilst it is important to take cognizance of individual and non-work psychosocial factors and environment, in the OHS context, psychosocial hazards have come to refer only to hazards created by work, work design, work structure and regulation and the entire work environment.

Further light and explanation have been thrown on psychosocial hazards by an international policy document PRIMA-EF Guidance on the European Framework for Psychosocial Risk Management [17]. The document which is a part of the WHO's Workers' Health Protection Series states that:

Workplace psychosocial hazards focus on aspects of work design and management and its social as well as organizational contexts which have the tendency and potential for causing physical harm. Although the term 'psychosocial hazards' as appeared in many international policy documents, is mostly convenient as a comprehensive reference to specific occupational hazards such as harassment, stress, ethnic discrimination, bullying, occupational violence as well as work related fatigue.

Furthermore, the International Labor Organization (ILO) defined psychosocial hazards as interactions between the workers, his job content, work related organization and management. These include the social environmental and conditions which the organization presents, while on the other hand, it includes the worker's competencies, needs and experience. As such, the combination of these factors may be referred to as those interactions that have proven negatively or hazardously and affecting the worker's health both through his perceptions and experience. These continue to have far enormous hazardous impact on these workers, especially in their workplace. They have negative impact on the worker's health and safety of other employees which could extend to vibrancy and the healthiness of organizations in terms of, among other things, the quality of product, level of productivity, services and general organizational climate. Psychosocial hazards, thus, go hand in hand with the worker's experience in the workplace and the stress associated with it. Hence, work-related stress has also been looked at as the response of people who are loaded with long working hours, work pressures and other related demands which often are unmatched to their knowledge level, and their abilities, therefore, challenging their ability to meet up, cope and function efficiently, effectively and productively at the workplace [18]. It is imperative to note that psychosocial risks are often witnessed in all workplace, and they are ubiquitous, and may not pose a problem as long as they are properly

addressed and preventive action has been developed and implemented. However, they may pose a threat to the worker's health mostly due to lack of recognition of the risks factors (and consequent inaction), mishandling of such risks, poor prevention mechanism and, to an extent, continuous exposure to such work related risks. It is equally important to note that it is almost impossible to completely solve the problem of exposure of workers to psychosocial risks in any working environment, and their subsequent adverse effects [19]. It is in this regard that more studies such as this have become most imperative.

Statement of the problem

Almost all types of works, no matter the way they come, all have peculiar occupational risks. The changing socio-economic challenges have been reportedly associated with the shift in the types of risks workers encountered in the workplace, with new types of hazards being found in the workplace, combined with traditional ones. Traditional workplace risks can be broadly divided into physical risks, which include biochemical, biological, chemical as well as radiological risks. Emerging workplace risks may include among others psychosocial risks, and the exposure to new and unknown chemicals and their processes which may have severe adverse consequences to human health (that is, nanotechnology). There has been delay in controlling and management of these emerging modern work-related risks, particularly true in the developing countries, while others are still struggling extensively with the traditionally known occupational risks. However, in the industrialized countries, these problems and challenges are increasingly controlled, and this gives credence to how these countries give attention to hazards in modern working environment [16,20,21]. Psychosocial risks and hazards not only interact with one another in producing adverse effects, but may also cause physical harm to man and his work environment [22,23].

Psychosocial hazards have continued to show that they can cause enormous adverse effects on public health, workers' health as well as the healthy business environment. Lost hours and absenteeism from work due to occupational injuries, ill health and work-related mental health problems is of growing concern globally. There is however, enormous health impact on workers arising from both psychosocial risks and work-related pressure or stress. This could further affect ability to work effectively, thereby posing problems and challenges for their immediate families and business environment. Also workers' illness can relate to other possible outcomes such as having financial impact on the workers and its businesses. There are several variables which may include absences in work, sickness, as well as the unseen implication of being present at work while being very sick therefore performing below standard because one is not fully productive. The effects could extend visibly to national and international economical levels. Indeed, the global cost of the work-related loss as a result of ill-health and associated loss productivity represents about 4-5% of most country's Gross Domestic Product (GDP) [24].

There have been reliable relationships between work related hazards which include psychosocial hazards and optimal or effective functioning of the worker, as well as organizational productivity and the development of ill-health resulting from working environment. It is a proven fact that if a worker is placed in the right and functional working environment in an organization, he or she will be efficient and productive. On the other hand, the worker's ability to be efficient and productive can be adversely reduced if the working conditions or environment are hazardous. Such psychosocially hazardous workplace could make workers lack the needed motivation. The focus of many organizations and corporations has been how they can improve upon

or increase efficiency and productivity, and in many cases how to maximize profit, while spending less to improve and create a workable environment which will be most conducive and less stressful, for the overall benefit, optimal health and wellbeing of the workers.

Psychosocial hazards constitute enormous problems and challenges to OHS professionals. These challenges have brought about some complexities of research findings, the limitations of regulations, high media interest, unique skills required by OHS professionals who are working in this area, as well as the industrial perceptions of the issues. The issue of cumulative nature of impairment, illness outcome, affectation, and damages those are not just limited to one particular workplace event.

Furthermore, the WHO [18] explained that about 30-50% of workers in the world report exposure to various work related hazards ranging from biological, chemical as well as physical forms, and sometimes work overload or heavy physical work and other ergonomic factors create an unease working environment and contribute to worker's ill-health. Also, many workers have reported cases of psychological problems as a result of work related stress and other psychosocial symptoms. Globally, there is no evidence suggesting any form of improvement of work related stress and other psychosocial problem emerging from the workplace. In spite of the magnitude and psychosocial setbacks of work related stress and its psychosocial effects on productivity and profit maximization, so little has been done to handle these emerging challenges. There are arguments in some quarters that among others lack or insufficient funds, inadequate allocations, and the fact that health issues often conflict with occupational health are contributing factors to the poor international development of occupational health for workers and their wellbeing.

Some argued that the fact that most diseases emanating from physical or psychosocial hazards especially in working environment are not included in the definition of easily preventable diseases, substantially pose a major controversy. In fact, in the developed countries occupational health is believed to be connected to the people in upper class and the affluent in our society. This is shared-perception by many policy and decision-makers in the developed countries. This is the main reason there is lack of political will, poor data, and poor implementation and enforcement of occupational health and safety rules and regulations. These evolving trends are followed by the growing industrial services which have been linked with the occurrence of work-related stress and diseases.

Many studies have linked long time stress in the working environment with a wide range of negative physical, psychological as well as social challenges for workers. The challenges include among others anxiety, depression, anger, burnout, increased alcohol use, aggression, violence, poor family interactions, and disruption of marital cohesion [1,2,25-27], and musculoskeletal disorders (MSDs) and cardiovascular diseases, [28] as well as hippocampal impairment [2]. Workplace and other related hazards have also been linked to high staff absenteeism, poor turn over, or increased industrial accidents and insurance premiums, loss of productivity, decreased job performance, as well as reduce morale among workers [1,27,29,30].

Psychosocial hazards surpass other forms of hazards, because work related hazards are associated with both direct and indirect costs, contribution to ill health, and they significantly contribute to low quality businesses operations. The national Model for Work Health and Safety Act specifically described 'health' as phenomenon which included both physical and psychological components, which the regulatory space has clearly encompassed that psychosocial hazards is an extension of health.

In spite of the evidence that is available, the management and prevention of psychosocial hazards have not been accorded first-place and premium attention by organizations, corporations and the government. This is why the Commission for the Social Determinants of Health [31], was compelled to make the recommendation which considers the vitally important roles of OHS policies, and the need to expand the remit of OHS to include workplace and related stress as well as harmful behaviors within the working environment [31], and that the risk associated with work can and should be managed in the same manner other OHS risk or hazard are being managed as well.

However, it will be somehow difficult to discuss psychosocial hazard without taking a view from mental health standpoint. Though, it will be out of place, for one to think that psychosocial hazards can only be managed through mental health. As a matter of fact, the physical aspect of work related hazards are the first health outcomes that are witnessed by researchers and this still play a huge part in occupational risks on health of workers. Psychosocial hazards pose negative impact on workers' behaviors in organizations just like physical and mental health outcomes. Some of these outcome include absenteeism, poor engagement, turnover and productivity, and on team interrelation and team performance.

Reports have shown that psychosocial hazards are associated with delay in recovery from workplace and related illness/injury and therefore can have adverse effect on return-to-work outcomes. Sadly, most organizations especially in the developing countries do not pay adequate attention to these emerging psychosocial challenges in the workplace and their harmful effects which are often counter-productive. It has been clearly proven that workers who continue to work under sub-optimal environment persistently will carry the burdens of psychosocial hazards and will produce poor result mostly due to lack of motivation [32].

Although the shift towards modern technological means of production has been associated with higher productivity, and higher profitability for multinationals due to weak national regulatory systems [33,34], it must equally be stressed that the quest for profitability has unfortunately taken precedence over the improvement of workers' health and working conditions.

In addition, poor social and technical infrastructures in developing countries continues to hamper effective tackling of existing and new occupational hazards efficiently, as the situation on work-related injuries and diseases confirms. Occupational diseases indicate a pathological process caused by the repetition of a work-related activity, such as prolonged exposure to hazards at work, whose effects may only manifest after long periods of time. These illnesses may be deceptive in presentation as they are often slow and not clearly linked to work conditions. Moreover, they may have multiple potential sources, including lifestyle factors, which make it often difficult to establish whether or not the conditions are directly related to work [32].

Every year about two million people die worldwide as a result of work related (occupational) injuries or diseases [24]. Information technology (IT) and telecommunications turned out to be the largest sectors. The fastest growing sector is IT and researchers often study the impact of the expansion and increasing complexity of this sector in relation to work-related stress. Researchers realized that urgent action is required as the problem will only increase if nothing is done to combat it [35]. The IT and communication sectors are followed in exposure to psychosocial and work-related stress, hazards or even risk by finance, the public sector, and smaller sectors such as retail, utilities, hotels and leisure, transport and travel, and emergency services.

Findings implicate high job-related depression and anxiety, low job satisfaction, and insufficient use of skills.

There is high prevalent rate of emerging risks, combined with traditional risks among workers in the developing countries despite widespread awareness and knowledge about the negative effects of work related hazards and their preventive measures [36]. It is therefore, unfortunate that from a general standpoint, occupational health seems to have been neglected in the developing countries because of competing socio-economic and political challenges and interests [37]. Of course, one cannot rule out the effects and role poverty cycle plays in given a clear picture of the relationship between vicious cycle, ill-health, diseases, injuries, and hazards in the workplace in the absence of any form of Act for the protection of workers.

Reports have shown that about 80% of the global workforce lives in the developing countries [13], and majority of these workers have been subjected to working in an unhealthy and unsafe working environment [38]. More evidence has also showed that traditional risks are intrinsically linked to psychosocial risks in the workplace, since both have the traditional and psychosocial risks and all pose eminent threat to workers health; social, psychological and physical [34]. Therefore, psychosocial risks should be seen as the risks that affect workers health psychologically and physically [39].

Justification for the study

Strong relationships have been found to exist between workplace psychosocial hazards, occupational stress, workers' health and wellbeing and productivity [40,41]. Certain amount of stress is needed for improved performance and motivation. However, extreme stress or prolonged exposure to work stressors can have negative effects on health and wellbeing, and hence become counterproductive when the limit of resilience is exceeded (Yaw Dawson's Law). Although it has been disparaged for its non-transactional perception, however, it may be useful to deliberate on Selye's seminal 'general adaptation syndrome' theory, which depicts an early and clear understanding of the link between stress and ill-health.

These hazards negatively affect the health as well as functioning capacity of workers in profound manner. These in turn cause both government and corporate organizations huge losses both hidden and unhidden. It is important to note that despite what appears to be negligence or general indifference on the part of both government and organizations, workplace social hazards can be controlled if efforts and policies are directed towards them and if workers and organizations know the risk factors.

Given the variety of working conditions and the plethora of associated health hazards (which developing countries also face), a complex picture arises. Although many developing countries still struggle with traditional risks, they are obliged to address also emerging issues, such as psychosocial risks. Many differences exist between industrialized and developing countries in terms of economic, social and political circumstances, but also in knowledge, development and application of policies and interventions at different intervention levels.

Clearly further studies and efforts are required to address the work related stress arising from psychosocial factors and the important risk factors associated with it in the developing countries, OF WHICH Nigeria is one? One important question is, why is it that it is only so little that have been done in the developing countries in regard to occupational health and psychosocial risks arising from poor working

conditions in particular. Some experts claim that inadequate funding, impedes the development of occupational health, and at both national and international level, this is viewed as partly due to the fact that health issues interrelate occupational health [42]. Another challenge is the fact that occupational diseases which emanated from workplace are not included in defining and categorizing easily preventable diseases; neither are any psychosocial risks that are affecting workers' health.

These points are very relevant because workers around the world, despite differences in their environments, face practically the same types of workplace hazards in terms of chemical, biological, physical and psychosocial hazards [13]. In addition, the human reactions to stressors are universal, but the means at disposal to counteract these are unevenly distributed [42]. Hence, there are undoubtedly potential differences in addressing these due to different levels of awareness as well as knowledge about the management and prevention of workplace stress and other psychosocial risks.

Awoyemi and Kabir [43] reported that it was because of lack of awareness that most workplace incidences and other psychosocial hazards often go unnoticed or unattended to. The findings from this study will go a long way in helping to create the needed awareness and knowledge as regards to psychosocial hazards among various establishments and institutions including the University workers, as well as affording workers and organizations the ability and tools to avoid or reduce further occurrences of work related hazards.

Every worker seeks to work in a conducive environment. Findings from this study will also help to create a healthy and conducive working environment, enhance interpersonal working relationship among workers in the University of Port Harcourt. No doubt, the findings in this study will also add to body of knowledge, and equally add to the scanty data on workplace psychosocial hazards in this environment, particularly in the tertiary learning institutions. The study will also attempt to identify the possible risk factors or predispositions to psychosocial hazards and help proffer solutions.

Contributions of the study to public health

The study will contribute to Public Health in the following ways;

1. Knowledge of psychosocial hazards in workplaces will help provide measures for their control thereby improving the general health and wellbeing of the workers.
2. Will help raise workers' awareness, and therefore empower them to know their rights as prescribed by the Labour Law.
3. It will make government, organizations and even individuals avoid unnecessary expenditures on workers ill-health occasioned by workplace psychosocial hazards, making more funds available for care, development and public health of the citizenry.
4. It will save government, organizations and even individuals, both the hidden and real losses due to workers' poor productivity when they occur following workplace psychosocial hazards, making more funds available for care, development and public health of the citizenry.
5. It will increase the health status of the workers, thereby saving more funds to take care of their individual families including their health.

The aim and objectives of this study

General objective: The study was aimed at assessing social

(psychosocial) hazards of workers in the University of Port Harcourt.

Specific objectives:

1. To determine the prevalence of psychosocial hazards among Workers in the University of Port Harcourt;
2. To determine the pattern of social (psychosocial) hazards among the workers in the University of Port Harcourt;
3. To assess the factors that pose social (psychosocial) hazards or risks, if any, among the Workers in the University of Port Harcourt;
4. To proffer some solutions to the problems of social (psychosocial hazards) among the Workers in the University of Port Harcourt.

Literature Review

Definition of psychosocial hazards and risks

A hazard is anything with the potential to cause harm, while a risk is anything or the likelihood for harm to occur. A situation or workplace may be hazardous in itself, but once a human being is placed in the situation or workplace, it becomes a risk. The cumulative effects of psychological hazards on a worker give rise to psychological stress. Therefore, psychological hazards could aptly be described as psychological stressors.

Providing a precise definition of the concept of stress in the workplace will perhaps offer better understanding of the concept. Though, it seems much simpler than it appears; academics and researchers are yet to reach a consensus on the concept of workplace stress [44]. However, stress as a construct, have been given several explanations by different schools of thought, most among these thoughts are the lay persons, policy and decision makers, academics, as well as independent researchers [28,45]. This has brought too many overlapping concepts, theories and approaches to the definition at different levels. The macro level looks at multifaceted and vast aspects of the stress as a process which include ones personality, its working environment as well as their physiology, but at the micro level, the focuses are more on factors of stress, such as level of work load and demands [44]. Despite, the ambiguous nature compounding the meaning and concept of work place stress, studies on the topic have continued to expand [28], and several theories have evolved from stress in the last few years from more basic standpoints, to other much complex conceptual frameworks.

To be more specific, occupational stress can be defined as: the psychological and physiological responses of work overload by workers that feels that their work load and demands exceed their ability and/or to cope with such demand or workload [19,46]. There are three basic points to deliberate upon with regards to this definition. Firstly and foremost, is the fact that the definition captures work stress as a response. This response is multi-faceted, that is, it includes psychological (cognitive), physiological, as well as emotional. These responses could set stimuli that can lead to ill health among workers. Secondly, as noted earlier, stress as a phenomenon is not a disease but could be a pathway to disease condition and ill-health among workers. This condition or ill health could be physically or mentally. The ill-health arises from an imbalanced pathway which is the resultant effect of significant demands being placed on a worker who has limited resources to cope with these demands. Thirdly, and final aspect of the definition has to do with the workers perception of working characteristics which include their perceptions, skills and how important it is for them to meet up and cope with work. These characteristics produce the basic and important

aspect of stress definition. The workplace, its environment and the nature of work itself are all significant aspects of human health [47].

For the past five decades, psychological aspects of work had become topical issues for occupational health researchers [48,49]. Research in this regard became vitally important with the emergence of researches in occupational psychology and psychosocial aspects of workplace and related environment in the 1960s [48] with a focus from an individual standpoint to the adverse effect of certain aspects of the workers' health in the workplace [50].

The International Labour Organization (ILO) defined psychosocial hazards as the interactions among workers, job description, content, work management and organization as well as other organizational and environmental aspect of workplace. However, on the one hand, the workers' competencies, skills and needs are needed. These interactions are those forms of interaction that are hazardous and have influence over workers' health through their views, and experience. In addition, the issue of overloading which create burnout has also gained some level of importance as a result of continuous exposure to a poor psychosocial working environment and/ or other work-related experience resulting to/ or from stress. Burnout in workplace has been defined in various academic literatures as a state of physical, emotional and mental exhaustion as a result of long-term exposure to adverse or distressful conditions in the working environment leading to situations that are emotionally demanding [51].

Who is a worker?

Work is fundamentally a locus of production of commodities and value, via contractually recognized chains of command that involve the purchase and sale of people's physical and mental labor (as well as the extraction of surplus value) [52,53]. It is also more than this. Work necessarily is also a site of social engagement, within and across job categories [54,55]. For any given person in any given job at any given worksite, working entails interactions with permutations of peers, subordinates, and supervisors or superiors and, in some jobs, interacting also with external clients or customers, including the public at large.

Moreover, the "any given person" in any particular job is not simply a lump sum of "human capital" with a specified amount of experience, skill, and education. Instead, each employee is necessarily entrenched in his or her societal context. Thus he or she simultaneously brings to the work his or her social position in relation to key societal detachments involving power and property, including class, gender, sexuality, race/ethnicity, nationality, and citizen status, to name a few [56,57]. From this embodied perspective, as elaborated by eco-social theory [56-58], work is a locus not only of economic importance but also of social reproduction of society relationships. Therefore, a Worker is the Unit of the process of production.

In other words, "the worker" is not simply a "worker." It manifestly follows that worksites, like any other social domain, will be arenas in which these social relations are expressed and contested. The net implication is that, in a context of societal inequality, additional workplace hazards can plausibly include racial discrimination, sexual harassment, and workplace abuse—with the first two also encompassing experiences that occur both in and outside work [53,57,59-61]. A fuller analysis of workers' health and workplace hazards thus translates to a concern with not only job-specific hazards but also the broader societal context in which workers live their lives and do their work [62].

Historical background of social hazards at workplaces

From the 20th century, America and Australia were two countries

where psychological hazard arising from work were strongly believed to be outside the main scope of OHS regulation and legislation. Therefore, there was little or no attention actually given to the potential adverse effects of work related stress on the workers' health. Health issues, such as mental health emanated from work related hazards in particular, where workers were left to their fate. However, towards the end of the 20th century, much research evidence suggested that the health effects of workplace especially the psychosocial hazards began to build up. The Governments and organizations alike began to see in real terms, financial burden and human costs linked with continuous exposure to work-related psychosocial hazards. As these risks linked with the usual traditional aspects of OHS were being appreciated and managed better, while psychosocial hazards arising from the workplace becomes the new frontier to occupational health. Policy directions in many developing countries are now influenced by the WHO and their annual reports on social determinants of health [31]. Governments in developing countries such as Australia have now begun to make it precise the regulation on how to manage psychosocial risks by developing safety protocols, and references into the scope of OHS legislation, and releasing standards and codes of practice. This included the national model Work Health and Safety Act [18], which defines 'health' as inclusive of physical and psychological health.

Again, studies on how OHS regulations and regulators worked in some developed countries have showed from the responses to psychosocial hazards that there has been an increase in relevant implementations, interventions, campaigns, rules and guidance [63]. The development of studies and other evidence have suggested the importance of workplace psychosocial hazards which stems from large and/or separate bodies of literature, most notably, work organization, job content and design; occupational stress; work-related bullying and harassment, and other forms of negative work related behaviours (such as counterproductive behavior in the workplace, incivility in the workplace, mobbing, abusive supervision, workplace aggression and violence); stress, fatigue; as well as the application of the basic principles of risk-management to social and psychosocial hazards.

Types of work-related hazards

Hazards are basically typed according to the environment they occur.

1. Physical hazards
2. Biological hazards
3. Chemical hazards
4. Mechanical hazards
5. Social (psychosocial) hazards.

Types of social (psychosocial) hazards

There are different types of social hazards known to occur in work places. They include the following;

Workplace bullying (mobbing): Bullying in workplace simply means the repetition of unreasonable behavior which is directed towards a worker or group of workers that presents risk(s) to health or safety of these workers. These workplace risk(s) or hazards may include verbal abuse, excluding and/ or isolating particular workers, assigning tasks that are impossible for these workers to successfully complete, intimidating and harassing of workers, assigning fruitless and meaningless tasks which are mostly unrelated to the worker's job description, changing workers rosters deliberately, inconveniencing

particular workers, intentionally withholding relevant information that will prevent a worker to effectively do their job; and blackmailing of employees with threats of dismissal.

Though, a single incident does not necessarily constitute bullying, however, one-off incidents should not be neglected. Physical assault (or the threat of physical assault) is an occupational hazard which may be compounded by violence, should be dealt with accordingly. It has been known that work related bullying creates a working environment that is unsafe and uncondusive. Employers must be protective of their employees as far as it is rational, reasonable and practicable from any situation that poses risks to the health and safety of the employees, as such bullying can be reduced and/ or eliminated.

Workplace abuse: The most common form of workplace abuse, “being screamed or yelled at” was likely to be perpetrated by the participants’ boss, coworker, someone at a lower job level, or someone else (e.g., a customer). Coworkers were most likely to be identified as the perpetrators for “being subjected to a hostile or offensive gesture” or “being sworn at,” and other non-gender-specific abuse: “verbal aggression,” “disrespectful behavior,” “isolation/exclusion,” “threats/bribes,” and “physical aggression” with each of these types of abuse reported by about 15 to 20 percent of participants in all racial/ethnic-gender groups, except white men, for whom the prevalence was 25 to 35 percent [64]. By contrast, bosses were most likely to be reported as the perpetrator for “trying to control nonworking time” and for “treating participants unfairly in work assignments” and also for “asking someone to do work not part of her/his job” [64].

Substance use in work places: Psychoactive substances such as cannabis, hallucinogens, opioids, volatile substances, and stimulants and alcohol as well as cocaine could become an occupational health and safety problems. These may pose serious health challenges to employee’s ability to exercise judgment, due to impaired coordinative ability, motor control, alertness and concentration leading to decrease performance at the workplace. This situation could also lead to increase in work related injuries or other relative incidences sometimes, to the workers themselves or to others as well as decrease in productivity in the organization. Employees must therefore take absolute care of their own safety as well as health of their colleagues by not causing harm in the workplace. The level of alcohol consumption and used of illicit drugs of workers while they are at work. It is undeniable fact that alcohol and indeed other psychoactive substances if abused can lead to deplorable state including ill-health among workers, except when it has to do with any authorised and reasonable use at the place of work or on social functions. Workers should therefore, follow the safety rules, regulations and also present themselves for work and remain, while at work in a lucid state so that they can carry out their work duties effectively. Alcohol and other psychoactive drugs can predispose to a number of problems for the worker and it’s employers. While in some cases, the use of psychoactive substances could lead to loss of life, injury to employee(s) and/ or may cause damage to working equipment.

Environmental tobacco smoke (ETS) is described as the exposure to tobacco smoke from someone else’s cigarette, pipe or cigar. Those that breathe in ETS are described as passive smokers, second-hand smoker or involuntary smokers. Smoke from ETS consists of solid particles and gases that are carcinogenic. More than 4000 different chemicals have been reportedly identified in tobacco smoke. Many of these chemicals that are known are cancer causing agents in humans as well as animals in the range from 30 to 60. More so, the solid particles that make up about 10% of tobacco smoke include tar and nicotine. The vapors and gases that made up about 90% of tobacco smoke. The major gas present

in ETS is carbon monoxide. Other gases include among others acrolein, formaldehyde, ammonia, pyridine, hydrogen cyanide, nitrogen oxides, N-nitrosodimethylamine, vinyl chloride, and acrylonitrile.

Mainstream smoke is described as the smoke that is inhaled and then exhaled from the smoker’s lungs. Side stream smoke is described as the smoke that enters the air directly from the burning end of a cigarette, piper or cigar. The burning end of a cigarette is not usually hot enough for tobacco combustion completion to occur. Many of these chemicals are favored by incomplete burning; undiluted side stream smoke contains higher concentrations of several chemicals than the mainstream smoke inhaled by the smoker. These chemicals may include 2-naphthylamine, 4-aminobiphenyl, N-nitrosodimethylamine, and carbon monoxide.

Environmental tobacco smoke (ETS) contains both the side-stream and mainstream smoke. ETS is diluted by room temperature before it is inhaled and is; therefore, less concentrated than either mainstream or side stream smoke. Every person whether smokers or nonsmokers, if placed in the same room with ETS, will have similar exposure because nearly 85% of ETS in a room comes from side stream smoke. The smoker is likely to be exposed to mainstream smoke but the exposure will be limited to the amount of time it takes to smoke a cigarette. Exposure to ETS remains constant for the entire time both smokers and nonsmoker spent in that room.

Workers are often duty bound to ensure that, as far as it is practicable, workers are cautious so that they will not be exposed to any form(s) of hazards and risks that could arise as a result of impairment from alcohol and/or other psychotic drugs and, if this should occur, it is addressed through a systematic risk management process. It is equally important to note that the presence of other social hazards could predispose a worker to psychoactive substance use.

The hazards related to alcoholism and other psychotic drugs in the workplaces, may pose greater threat depending of the type of work and the nature of the workplace. Such workers even when they return to a zero alcohol or drug level may still be impaired as a result of the ‘hangover’ effects which can pose risks in the work place. Hazards related to alcoholism or other psychotics drug abuse which increase worker risks to harm, may include; driving in the course of work, operation of machinery, jobs where motor coordination are heavily relied upon, jobs that entail the use of hazardous substance(s); and jobs that involve team work among others. In many cases, especially in specific occupations, workers who are impaired as result of alcoholism or abuse of other psychotic substances may be more likely to pose eminent threats to the health and safety of other workers, typical example in this cases, are drivers and pilots.

Several risk factors for abuse of alcoholic substances have been identified in many workplaces. These risk factors may include; alcohol abuse and/or use of other psychotic drugs in relevant social groups, alcohol consumption patterns and/or other psychotic drug consumption, the type and nature of workplace, the workplace culture, how readily available is alcohol and/or other psychotic drugs, how often one is isolated from both family and friends, work design and job description as well as training, poor supervision, overload in the workplace, and working for longer hours or doing multiple shifts in workplace, interpersonal factors and inadequate working conditions among others.

Occupational violence: Occupational violence is common in work places and they include incidences where workers are physically abused, attacked, harassed or threatened. It also includes any form of

statement or behavior that portends endangers to the lives of workers, or express such intends of workers being in eminent danger or concession of being attacked physically. Thus, the term 'occupational violence' deals with all forms of attacks including physical attacks on workers. This may include kicking, boxing, striking, scratching, spitting, biting, or any form of direct physical contact such as shoving, pushing, tripping, throwing of object, shouting, grabbing, using plank, or any form of weapon to attack, and any form of indecent physical contact (harassment). A 'physical attack' can occur in the workplace irrespective of the attacker's intent and may include situations where a worker is being attacked by another person without a premeditated intent, however, the presented behaviors can cause harm to others.

The Colombian Federation of Insurance Companies [FASECOLDA] found that 0.5% of occupational diseases are caused by stress arising from violence, and that violence is single most important causes of occupational related stress disorders in the country. Between 1994 and 2004, only 22% of diseases were considered work-related, a surprisingly low number actually reported work stress. This suggests that there is a lack of awareness of stress as a precursor to diseases [65], but also lack of knowledge about causes, consequences, assessment and management methods and their application. More recently, the WHO emphasized that world developments and research findings indicate a need for addressing psychosocial risks and work-related stress, and that these are of increasing concern globally [66].

Third party violence is a concern in the service sector. It refers to violence from clients, customers, patients or pupils [67]. Psychological harassment occurs when someone is exposed to persistent negative, humiliating, intimidating or hostile behaviors in the workplace. Fourth European Working Conditions Survey (2007) showed that 6% of the workforce was exposed to threats of physical violence, 4% to violence by other people and 5% to psychological harassment in the work over the past 12 months. In Australia, of a total sample of 4500 individuals 632 mentioned they had experienced bullying in the workplace, in particular by their supervisors or their co-workers.

Sexual harassment at work: Sexual harassment is another form of psychosocial hazards common in work places. It is equally prevalent in the educational sector. Sexual harassment at the work for the past years has been shown from studies to be 26% among women and 22% among men, with values of 20% or more in all ethnic-gender/racial groups other than Latinas and white men [68].

To measure experiences of sexual harassment in the worksite, a five-items tool adapted from two validated instruments which focused on the three major domains of sexual harassment: sexual coercion, unwanted sexual attention and gender-based hostility is adopted [69]. All three domains have to do with legal construct of sexual harassment, whereby the first corresponds to the most explicit "quid pro quo" form of sexual harassment (i.e., get rewarded if do and punished if do not have sex with the harasser), and the latter two constitute elements of a gender-specific "hostile environment" [69,70].

Work-related stress: Workers may become stressed when a worker is faced with work demands as well as pressures that are unmatched to their knowledge, experience and technical know-how and which poses serious challenge for these set of worker(s) to cope. Stress is aggravated when worker think, or feel they have little or no support from colleagues and supervisors, or little control or none over their work, absence of some measure of independence or how they cannot cope with level of work demands and pressures. While stress can gradually accumulate and build up over time, it may also occur following specific incidences involving bullying, harassment, threats

(threats of being sack), occupational violence and trauma; this is how the World Health Organization describes stress in its publication Work Organization and Stress [71].

Stress can lead to the following; frustration, emotional symptoms like distress, anxiety, fear and emotional exhaustion [43]; while physical symptoms such as fatigue, headaches, shortness of breath, tiredness, palpitations, indigestion, sweating, blurred vision, muscle tension or aching around neck and shoulders; behavioral changes may include irritability, difficulty in sleeping, excessive worrying and leaving work early and/or working late, absenteeism, taking work home, increased sickness, and confusion and difficulty to make or take appropriate decisions, poor attention to details and muddled thinking.

Work-related stress was one of the workplace issues that require urgent attention and African participants at worship most strongly perceived this emerging hazard as one that needs urgent attention (100%). They were closely followed by South-East Asian participants in this opinion, and least by Western-Pacific participants (32%).

Also work-related stress is not an emerging risk anymore, since it is not new and increasing (definition of emerging risks in EU-OSHA, 2005), but constitutes an established risk that is still increasing, given that it has been long recognized as a problem affecting the workforce of industrialized countries. Clearly, there is now considerable evidence, and reasonable consensus, within the research community of industrialized countries of work aspects which could be viewed as stressful and/or have the potential for inflicting physical or psychological harm [72-78].

Racial/Ethnic discrimination: Fully 58% of the workers of color (65% of the black participants, 45% of the Latino participants, and 63% of the participants of additional race/ethnicities), compared with 37% of the white participants, reported having experienced racial discrimination in at least one of the nine situations included in the survey instrument. The first three groups together, moreover, were 3.5 times more likely than the white participants to have encountered racial discrimination in three or more specified situations (36.7% vs. 10.2%), with black workers at greatest risk (4.3-fold).

Work-related fatigue: Fatigue is described as an acute or chronic state of tiredness that can affect worker (s) performance, health, safety as well as their wellbeing. It affects the physical and mental capacities needed for optimum work performance, increasing the risk of workplace incidents, mistakes of omissions and commission, and eventual decline in organizational productivity.

Fatigue can also add to workplace conflict, absenteeism, poor performance and mistakes that result in physical injuries or compromised client care [43]. When the brain is fatigue, the rate of assimilation and comprehension reduces, so the worker is unable to listen to and pay attention to details and directive from bosses. Similarly the capacity to recall simple and complex work steps and procedures reduces. All these make the work prone to making mistakes. Again, tolerance level of the employee decreases with increased irritability level. These often cause unnecessary disaffections among workers and disrupt interpersonal relationships. Work related fatigue affects not only workers' health and safety, but the health and safety of others as well. Many potential causes of fatigue are present in community services workplaces. These may include, mental and physical demand of work; long periods of staying awake (e.g., working for long hours or doing multiple shifts without breaks); lack of sleep or inadequate resting time (e.g., when 'on-call' no breaks); regular work at night; environmental stresses (e.g., noise, heat); and lack of working incentive or systems of reward (such as recognition or promotion) that provide

means for worker to cope with the longer and harder than may be safe.

The detrimental effects of prolonged fatigue on human health are felt on both physical and mental health. These include: sleep disorders; mood disturbances; gastrointestinal complaints; headaches; nausea; depression and other psychiatric disturbances, cardiovascular disease; irregular menstrual cycles; and problems associated with the disruption of medication regimes for medical conditions (for example, insulin for diabetes).

The concept of psychosocial risks and work-related stress

The definitions and the nature of psychosocial risks and work-related stress emphasizes primarily on the individual and the workplace. The three theoretical models upon which these definitions are based are significantly overlapping approaches to the study of stress [79]. The first approach conceptualizes work-related stress as simple, mechanistic and linear, derived from the discipline of engineering. Here the individual is viewed as a passive vehicle upon which noxious or aversive aspects of the work environment are enacted and which focuses on stress being a set of causes not symptoms. The concept of stress threshold emerged from this school of thought, with differences in stress being attributed to the resistance and vulnerability of the individual [79]. The approach has been named the engineering approach.

The second or physiological approach also saw the environment's aversive or noxious characteristics as stressors, but stress was understood as a dependent and not an independent variable as in the case of the engineering approach, or physiological response to such an environment. In the short term, physiological reactions to stress can prove to be beneficial; however prolonged or repeated elicitation of this physiological response can result in detrimental physical consequences [79]. The major distinction between the engineering and physiological conceptualizations of stress is that, in the physiological approach, stress is defined by what occurs within the person while in the engineering approach, it is characterized by what occurs to the person, although this does not account for existing data and ignores strong cognitive and contextual factors in the overall stress process [80].

The third or psychological approach overcomes many of the limitations of the two previous models. Stress is defined as a dynamic collaboration between and among individuals and their environment and is often conditioned by the existence of a problematic person-environment fit as well as the emotional reactions which underpin this collaboration [81]. Instrumental to the definition, is that environmental factors may play central role in the occurrence of work related stress, particularly the role played by psychosocial and organizational factors [79].

There are two main branches of the psychological approach: the transactional and interactional models. Transactional models are concerned with the processes by which by virtue of one working in an environment, in terms of the person's experience of demands, control, and social support initiates and maintains the experience of stress, the individual's reaction to it, their attempts at coping, and the effects on their health, wellbeing, behavior and performance [80]. Stress is viewed as an internal representation of a problematic transaction between the person and the person's fitness to his or her work environment [81]. The notion of 'transaction' implies that work-related stress is neither resident in the employee's work environment nor an expression of his or her reaction to that environment [82]. Rather, stress reflects the conjunction of a person with certain motives and beliefs with an environment whose characteristics pose harm, threats or challenges depending on these personal characteristics'.

Main challenges outlined with this approach include its complexity and lack of stability, which seems a long way away from the simple 'black box' linear mechanistic system that was described in earlier theories [80]. It has its origins in clinical psychology which places emphasis on the individuals. Studies have shown that the relationship between workplace psychosocial risks and their health outcome is mediated by a variety of factors [83]. Hence, the transactional model accounts for the multifaceted relationship by variations as well as differences in the stress process [81].

Subsequent developments conceptualized the stress appreciation process into the fundamental basis for the practical risk management approach developed at the organizational level by positioning the work-related stress process within a traditional health and safety framework. Additionally, the model views work-related stress process by developing a psychosocial taxonomy of stressors to facilitate risk assessment for the European Agency for Safety and Health at Work [82], the British Health and Safety Executive Management Standards initiative [84], and the development of the European Framework for Psychosocial Risk Management: PRIMA-EF [85].

Interactional models Interactional models focus on the structural aspects of the person's interaction with his work environment [81]. Perhaps the most influential model in this category has been the job-demand-control-support theory [86]. Effort-reward imbalance model is another influential interactional model [87]. The job-demand-control-support theory includes work pace, instruction, conflicting demands and decision latitude, including decision making authority, and skill discretion.

The model states that high decision latitude and low to moderate employee work load or job demands tend to ensure workers' health, but that the combination of high work demands and low decision freedom will often result to ill health, poor performance and below capacity delivery. For example, one reference study showed that exposure to high job demands for nurse managers and clinical directors had a significantly higher probability of high level of work stress. However, the available psychosocial resources inside and outside work taken together did not balance the experienced work stress in both groups [88], hence emphasizing the prominence of social support. In addition, a meta-analysis provides robust evidence for common mental disorder from prospective risk factors, such as high work demands and low decision latitude and (combinations of) low rewards and high efforts. This suggests that the workplace psychosocial environment is vitally important for mental health [75].

The effort-reward-imbalance model outlines that workplace stress can be caused by an imbalance between low rewards and high efforts by employers and organizations. Mental and physical problems may arise from an imbalance between high levels of effort spent at work, while receiving in return either no or only little recognition and reward, and, therefore, not matching the level of effort [87]. Rewards refer to extrinsic components such as income, career mobility, job security, esteem and respect. Direct evidence for the model has been found for physical health [87,89]. In terms of mental health impact, Siegrist found a high ratio of effort-reward imbalance to be associated with the level of burnout symptoms reported in bus drivers and hospital nurses. Burnout was also the outcome of an imbalance between effort and reward while dealing with clients [87].

Martins and Schinke [90] studied factors affecting job satisfaction and burnout levels, particularly financial and social factors and psychiatric and family/children workers. Both groups were particularly satisfied with the amount of praise delivered by supervisors but were

reportedly dissatisfied with salary levels and promotional opportunities. The study noted that these 3 factors were strongly associated with job satisfaction and burnout levels of workers [90].

Research not only indicates an impact on physical and mental health, but also adverse behavioural outcomes. Kouvonen et al. [91] reported that high effort-reward imbalance associated with high body mass index in a total sample of 45,810 male and female workers. One year later it could be demonstrated that women and men with high effort-reward imbalance were 40% more likely to have simultaneous three times higher lifestyle factors, such as smoking, drinking, physical inactivity, and high body-mass index, when compared to the control group with low effort-reward imbalance [92], which seems to indicate a higher level of general wellbeing.

The theoretical models presented here are important as they provide an explanation of the relationship between health and work. They select relevant components from the complex reality, they allow for generalizing beyond single observations and, lastly, they serve as a guide for health-promoting interventions at work. Industrialized country approaches are based on specific work-related stress theories, and, as indicated above, the definition of stress is intrinsically linked with theory. The extension of the paradigm beyond the individual, the workplace and even beyond a traditional health and safety framework may be necessary considering the impact beyond work, affecting the public health arena.

It is possible that the effort-reward-imbalance and the job demand-control support models may simply be different ways of cutting the same cake and may just offer two perspectives on the same system [80]. If not, they could be viewed as interconnected when considering the enormous adverse impact of work conditions [93]. However, importantly, both theories have revealed how work-related stress can contribute to negative health impact.

Considering the richness of the conceptual position, it can be inferred that the theoretical basis for workplace stress can be interactional and focused on the structural features of the person's interaction and possible blend with the work environment. The basis may also be transactional and focus on the cognitive process and emotional reactions governing person-environment interactions [94]. Evidently, psychosocial risk factors are changing and seem to be increasingly shaped by processes of globalization.

A recent European study indicates that contemporary workplace psychosocial risks are shifting and has indeed gone beyond the normal individual and/ or workplace centered approach. Issues such as unwarranted contracts in the face of the unstable labour market, heightened exposure of workers in globalized context, new methods of employment contracts, and the feeling that their job is insecure [16,95], point to a need for a larger paradigm beyond the individual and the workplace, even in industrialized countries. Clearly, the type, nature of work and condition for employment has also changed considerably in most industrialized countries. Research seems to distinguish though between effects depending on the socioeconomic status, indicating that the adverse working conditions related to the 'new' employment arrangements tend to be more common among lower socio-economic class with disadvantaged occupational positions [96]. Indeed, the lower the socio-economic position, the higher the risk of being exposed to adverse and stressful working conditions [74], and also more exposed to poorer health challenges [97].

In this context, the control-demand-support model holds that the impact of the burden results from lack of control an individual has

over the complex physiological coordination required in response to increasing demands [98]. Karasek and Theorell state in his stress-disequilibrium theory that physiological coordination has been pushed to extremes because of long-term exposure to stressors in the global economy [86]. Diminished capacity for physiological coordination is the social implication, which eventually leads to chronic disease. Chronic diseases belong to the category of non-communicable diseases (NCDs), which include cardiovascular diseases, depression, high blood pressure, obesity and others [18].

Risk factors for workplace psychosocial hazards

Several factors have been identified and known to increase the risks of workplace psychosocial hazards. Some of these risk factor include changes among the working population, job description, work time, workload, workplace and nature of work, pace of work, work schedule, multiple shifts, working for longer hours and overtime, level of control by workers on the job, the environment and equipment, the function and culture of organization, interpersonal relationships among workers and their employers, threat of violence, harassment and bullying at work, and home-work interface among others.

Several studies have noted the contributing factors to workplace psychosocial risks and other work-related risk and that factors such as stress has been found to be embedded within the work content and context. At organizational levels, work content includes the nature of job, tasks, level workload and the pace at which the work is being done, the hour put into the job as well as the level of participation and individual control over the workload and work processes. While, work context is the development of individual career, the utilization of opportunities, individual status, the level of payment, the role the individual play in organization and its level of interpersonal relationships (conflict, psychological harassment), the nature of the organizational function and culture, as well as the work-home interface in terms of support, conflicts and spill-over effects.

Organizational and workplace level, job content has been found to be very important workplace psychosocial risk factors. It includes monotonous, meaningless tasks; under stimulating, lack of variety as well as unpleasant tasks. Workload and work pace is when as worker has too much or too little to do and they are working under time pressures. Working hours refers to flexible and strict working schedules; unpredictable working hours; long and unsocial hours; and badly designed or multiple shift systems.

Poor control or participation has equally been implicated as workplace psychosocial stress. Lack of control (for example, over work methods, pace, hours, environment) and lack of participation in taking or making decision.

Role design in organization is a vitally important issue when determining workplace psychosocial risk factors. This is more so, because undefined role most at times results in conflict among workers within the same job or the job description as well as how individual respond to other workers. Obviously, the continuous dealing with other people and their problems inside and outside the workplace has all been found to be enormous psychosocial risk factors. Interpersonal relationships in terms of inconsiderate, unsupportive, poor relationships with co-workers, harassment, bullying, and violence (including sexual harassment); solitary or isolation in work; no agreed pattern, procedures or defined way of dealing with problems or complaints.

There are several existing models both in Europe and other

developed countries where the assessment of risks related to work psychosocial hazards (termed psychosocial risks) and their adverse impacts on the health and safety of workers and the healthiness of organizations (in terms of, productivity, quality of services, or products and general organizational environment, among others) [45]. The more common these contributing factors, the more common the level of work related stress among the workers.

Epidemiology of work-related psychosocial hazards

Epidemiology is the study of the determinants, distributions and deterrents of a disease. Risks and hazards associated with work place result in physical, emotional and psychological illnesses. Psychosocial hazards at work places have become internationally recognized issues. Virtually all countries are affected, as long as there is production sector and a functional economy. All age group that is involved in rendering labour services in work places can be affected by psychosocial hazards. However, different countries define working age. Overall, the working age for most countries falls within 15-70 years.

Unskilled workers showed the highest prevalence of harassment and bullying, while managers had the lowest prevalence. Also, people that often work with things (such male-dominated works) and people that work with clients/patients (such female-dominated jobs) have showed high prevalence rate of harassment and bullying, than people who work with clients, symbols or customers. The study did not report any significant gender or age differences [98].

A study [99] documented the prevalence rate of work related abuse, especially sexual harassment in the workplace, and life time experience of racial discrimination were predominantly more among the black, Latino, and white women and men of low-income union workers, Boston, USA. Overall, 85% of the cohort reported to have been exposed to at least one of the three work social hazards; while those that have been exposed to all three had reached about 20-30% among black women and men in racial/ethnic groups, other than white, black, or Latino. Work related abuse in the past years, had shown to be slightly more than half the workers, and was commonly reported by the white men with 69% [99].

There is high level of exposure to racial discrimination which was reported by about 37% of the workers of color, when compared with 10% of the white workers, with black workers reporting the greatest exposure rate of 44% [68]. Together, the implication of these findings is that its combined experiences of race, class, and gender inequities and their associated assaults on human dignity are highly connected to analyses of workers' health.

The nature of and concerns for psychosocial hazards: In this section, key findings from the Delphi survey question about experts' understanding of work related psychosocial hazards as well as risk were examined. Participants' were meant to present their understanding of work psychosocial risks, and reiterate issues of work content and context as obtained from the interviews. The study was done in two rounds. The Delphi results are closer to the status of research in industrialized countries [100].

As concerns work content the priorities identified pertain to time pressure and high job demands, skills, discrepancies between abilities, job demands and expectations, lack of participation in decision-making and poor management practices. There is high consensus on job insecurity, which has been identified as a global psychosocial risk. Precarious employment (that is related to job insecurity) has resulted in relatively high consensus as well. Furthermore, high consensus has

been reached on a perceived imbalance on abilities, resources and support as a psychosocial risk. Interpersonal relationships present psychosocial risks, and with less pronounced consensus also poor physical conditions. Lastly, lack of control resulted in 30% for the first and 66% for the second round of the Delphi study [100].

Participants were made to present their result based on the six regions. Only results which reached 50% or more were taken into consideration for a better understanding of the most prevalent issues. In the African region, participants identified psychosocial risks as being particularly related to lack of control over work processes (56%), high job insecurity (56%), time pressure and high job demands (56%). In the Americas, the same perception prevails of lack of control over work processes (92%), but to a higher extent.

The highest perceived psychosocial risks in the Eastern Mediterranean region are lack of participation in decision-making (100%) and skills, discrepancies between abilities, job demands and expectations (100%). Participants also mentioned poor management practices (80%) and poor physical conditions (80%) and perceived imbalance between abilities, resources and support (80%). Other issues felt to be psychosocial risks were job insecurity (60%), conflict in interpersonal relationships (60%), and time pressure and job demands (60%). The psychosocial risk which the European participants rated highest was lack of participation in decision-making (63%). Time pressure and high job demands reached 50% and skills, discrepancies between abilities, job demands and expectations also 50% [100].

In the South-East Asian region, skills, discrepancies between abilities, job demands and expectations (82%) were rated highest followed by lack of participation in decision-making (70%), time pressure and high job demands (70%), poor management practices (70%), lack of control over work procedures (70%), and job insecurity (55%). Poor management practices (80%) and time pressure and high job demands (80%) are strongly understood as a psychosocial risk in the Western-Pacific. Further mentioned were lack of control over work processes (60%), job insecurity (60%), and conflict in interpersonal relationships (60%) [101].

Occupational sectors prone to psychosocial hazards: Incidences of psychological harassment and violence are more prevalent in the service sector, and indeed the risk of experiencing both threats of violence and psychological harassment is greatest in the healthcare sector, in public administration and defense. In the transport, communication, hotel and restaurant sectors and in education, the risk is found to be higher than the average [17].

In a study [100], participants were asked which occupational sectors you think are most affected by the impact of psychosocial hazard or risks and work-related stress in developing countries. They were to mention from manufacturing/industrial professions, healthcare professionals, informal economic sector, construction, education and teaching professions, Police, security forces, law enforcement, mining, agriculture, service sector, catering and hospitality.

Findings obtained from experts' knowledge about the sectors most affected by psychosocial risks and work-related stress from six region studied. Results from the study indicated that African participants felt that the following sectors were most affected by psychosocial risks and work-related stress: primary sector: construction (56%), informal economic sector (56%), and tertiary sector: education and teaching (56%). Participants from the Americas saw the following sectors as most affected: Primary sector: informal economic sector (58%); agriculture (58%), mining (50%), Secondary sector: manufacturing

(100%), Tertiary sector: healthcare (67%). The participants from the Eastern-Mediterranean chose the following sectors as high-risk sectors: Primary sector: healthcare (100%); informal economic sector (80%); agriculture (60%); mining (60%), Secondary sector: construction (100%), Quaternary sector: education and training (60%) [100].

In Europe, participants felt the following were high-risk sectors: Primary sector: informal economic sector (62%), Secondary sector: construction (82%); manufacturing (62%), Tertiary sector: healthcare (82%), Quaternary sector: education and training (55%) [100].

South-East Asian participants chose the following sectors as most affected: Primary sector: informal educational sector (62%), Secondary sector: construction (55%); manufacturing (73%), Tertiary sector: healthcare (82%); service sector (55%), Quaternary sector: educational and training (55%). In the Western-Pacific region, participants identified the following sectors: Primary sector: mining (0), Secondary sector: manufacturing (60%), Tertiary sector: healthcare (80%); service sector (80%) while police and security (60%) [100].

In this section, main findings concerning the most affected occupational sectors by psychosocial risks and work-related stress are presented based on the findings from the two Delphi rounds. The Delphi findings show that the informal sector was one of ten priority occupational sectors that require attention (42% and 60%) as well as agriculture (30% and 40%), and mining (26% and 43%). The secondary sector covered construction (34% and 55%) and the manufacturing and industrial professions (50% and 74%). The tertiary sector includes as priority occupational sectors healthcare professionals who were the most affected (62% and 74%). Education and teaching received quite high frequencies and very high consensus (57% and 51%). Police, security forces, and law enforcement had close consensus (47% and 45%), and equally did the service sector (42% and 40%). Catering and hospitality was the least stressful sector according to participants (27% and 19%) [100].

Psychosocial hazards and the education sector

The educational sector is one of the most important vibrant, dynamic and core sectors of any thriving economy. The education sector drives and cuts across virtually all other sectors. It is the breeding place for human resources for all other sector. As such it is tasked with enormous responsibilities, and so also are the workers. It caters for massive population of youths amidst depressed economy, increasing delinquency and social vices. This becomes more glaring when vied against the backdrop of globalization and modernization. As such however, it should be born in mind that in a growing economy, the effects of globalization are not significantly felt. In developing nations, like Nigeria, economy and infrastructures are mostly still rudimentary and workers often compensate for these by working with crude instrument, prolonged duration, and increased workload per worker. In the Delphi study, African participants felt that the education and teaching sector was one of the sectors most associated with psychosocial hazards as high as 56%.

Pathoetogenesis of psychosocial hazards in workplace

Exposure to physical and psychosocial hazards in the workplace may adversely affect the psychological and physical health of workers. The evidence suggests that such impacts on health could be arbitrated, at least, two processes; first, using a direct pathway, and secondly, using an indirect stress-mediated pathway [50]. These two mechanisms have been found to show complimentary explanations of the hazard-health (H-H) relationship, which shows to various extents during hazardous

situations, both in operation and interaction [85,101]. This further explained that both synergistic and additive interactions are possible. This may become greater, if one set of effects augments, facilitates or even enhances another, or it may be smaller, if one set attenuates and weakens another [50]. Stress could therefore, be presumed to be the resultant effect from a complicated sets of dynamic phenomena, and is not just as a consequence of a single external event, acting on an individual [19].

Psychosocial risks have been described previously as an integral element of the stress processes, in terms of the interaction among nature of work, job content, management, environmental and organizational conditions, on one hand, the workers' competencies as well as their needs and on the other hand, an interaction that can prove to be hazardous to workers' health through their experience and perceptions [81].

There is strong evidence to indicate an association between work-related health complaints and exposure to psychosocial hazards, or to an interaction between physical and psychosocial hazards, to an array of health outcomes at the individual level and at the organizational level [81]. Specifically, work related psychosocial risks in the work place have been demonstrated to have a possible detrimental effect on workers' health, mentally, physically, and socially [102-106]. In addition, a growing body of evidence indicates both the direct and indirect role of work related psychosocial working environment on the organizational health indices (such as productivity, sickness of absence, absenteeism, job satisfaction and intention to quit) [102-109].

Research on workplace hazards and their relationship to work-related stress and health has focused on both physical [16,20,110,111] and psychosocial risks [19,21,81,85]. The work related psychological effects of physical hazards reflect not only their direct act and action on the brain and their unpleasantness, but also workers' awareness, fear or suspicion that they could be exposed to harm, which can give rise to the experience of stress to various degree [81].

Research and practice teach us that short periods of pressure are an intrinsic part of all work and life. They can provide us with a challenge and keep us motivated. However, excessive long-term pressure at work can lead to stress, which undermines performance. This is costly to employers and affects health and wellbeing of the employee. The ability to cope may be reduced by a state of resulting illness which can both act as a significant source of stress, and may also sensitize the person to other sources of stress. Within these limits, the common conjecture of a relationship between the poor health and stress experience appears justified.

The incidence of post-traumatic stress disorder (PTSD) has been widely researched and documented. Thus, it suffices to note that PTSD in the work place often follows a violent events at work, which is relatively common, incapacitating, results in long-term stress, and the incidence is likely to increase if 'external' violence becomes more common [112-114]. Typical example, shows rising levels of drug abuse and addiction which has resulted in increased hold-ups of 'convenience' stores, or terrorist acts become commonly widespread. If the incidence of occupational violence increases as expected there will inevitably consequence of increased stress-related ill health becomes unavoidable. Hence, any stressful work situations can be exacerbated if workers are cannot control the risks associated with such work, for example when school teachers cannot expel students who has committed a crime [115].

Psychosocial hazards and policy development

The prevention and management of psychosocial risks has not

been accorded premium on the policy making age and in spite of available evidence. It seems, often policies that address the outcomes of psychosocial risks are embedded in existing national strategies. The WHO Global Plan of Action on Workers' Health [66] also addresses workplace health risks in a comprehensive manner, addressing the prevention of all risks present, be they physical, mental or social. Prevention has become the key approach to occupational and public health. It requires knowledge and actions to address determinants of health. Clarifying the link between psychosocial risk factors and disease outcomes and proposing effective interventions, justifies action to address these important determinants of health.

Ephraim [116] adds that the barriers to implementing occupational health provisions are lack of vision and political will. Furthermore, in South Africa, the implementation of occupational health and safety practices is impeded not only by lack of funds, expertise, and technological sophistication, but also by worker apathy and employer ignorance, such that there is no pressure on the Government even to enforce existing regulations [117]. Muchiri [118] further states that South Africa has some of the most recent legislation in occupational health and safety, while Uganda, Kenya and Tanzania are currently in the process of reviewing their legislation, but that many challenges remain. Particularly enforcement and compliance with safety and health standards are unknown in the informal sector in many developing countries [118].

Clearly, a major role of trade unions is to encourage development of and improvements in national legislation and policies that affect workers' well-being. However, the majority of developing countries lack the proper political mechanisms to translate scientific findings into effective policies. In addition, there is lack of governmental interest, lack of solid research, and weak enforcement of health and safety regulations [37]. LaDou [41] argues that the ILO through its conventions may be the proper forum for a standard proposal, but since it has no enforcement power, it alone is inadequate. Nuwayhid [37] adds that many occupational and health policy makers in developing countries perceive occupational health as a "luxury", and it is not clear to them that occupational health is clearly linked to a healthier and more productive labour force, and thus may be one tool to break the cycle of poverty as well, since healthier workers are more productive, which improves output, salaries, living conditions, and national economies at large.

To be effective in terms of addressing global developments and shifts, we increasingly require integrated and holistic approaches, taking into account the changing world of work, and preventing new and emerging risks together with traditional forms of hazards. Therefore, legislation in any given country has to provide a legislative framework for occupational health and safety promotion, and to provide guidelines to be implemented at the workplace level. If these elements are not in place, they need to be developed in collaboration between an industrialized and a developing target country, and to be modified according to the local and national conditions [119]. Much of the responsibility for promoting health in the workplace lies on the one hand with the companies themselves. Promotion of a healthy workplace must be pursued from within the company, since changing patterns of life; work and leisure have a significant impact on health [120].

On the other hand, governments should recognize that national and local policies and legal instruments need to address psychosocial and physical risks and health behaviors. Governments should also recognize that welfare programmes need to address psychosocial and

material needs, both being sources of anxiety and insecurity. Currently, the lack of inclusion of psychosocial risks and work-related stress in policy development globally has posed some difficulties for companies of all sizes to put into place effective control strategies to deal with these issues. Policies and activities to improve mental health, quality of life and well-being at work should indeed occur both at the national and organizational levels [121].

It has also been proposed, with a particular focus on the African region, that governments should establish inter-sectorial frameworks, which include the monitoring of new and emerging environmental threats in their activities and threats posed by new and emerging hazards. The same report proposes the development and implementation of awareness-raising campaigns, community sensitization and education activities on prevailing occupational risk factors. Networking at international and regional level has proven to be important to support these processes within the research and practitioner community. Examples at international level are the WHO Global Network of Collaborating Centers for Occupational Health, and at regional level the Latin-American research network. Whereas the WHO network focuses on a large array of occupational health issues, the Latin-American network focuses only on psychosocial risks, which researchers felt needed addressing due to the quite extensive health impact.

In addition, Holkeri [122] argued that legislation also needs to be flexible to meet the psychosocial needs of the workers, as well as technological, social and economic needs. Codes of practice should also be developed for each country, which would increase workers' awareness of the areas that need more attention, and would help to promote safety and health at workplaces. Most African countries have occupational health and safety legislation, but they lack the ability to deal with the current challenges of globalization. Developing countries will require increased consciousness and empowerment of workers that they are able to control the work process. They will need to support generating unbiased information about occupational health risks, as well as educate employers and policy makers to see occupational health as a powerful vehicle for business development and for socio-economic improvements.

In most instances it is the powerful multinationals that influence legislation in most countries. It is for this reason that engaging them is crucial in order to influence the way business is done for the development of society [123]. They may, therefore, present an important target group, together with workers and employers of SMEs and policy makers, to develop and implement policies and strengthen legislation. In terms of interventions, industrialized countries can provide some examples. But only at the highest level of development is the ground set for intervention by delineating policy and legislation with respect to occupational health and safety, and health promotion. This may include policy with respect to working hours, compensation, employee rights and codes of conduct [124].

It is recognized that the existence of a national, legislative framework with government commitment is critical before interventions lower down can be truly regulated. This is problematic for many industrializing countries who try to work with governments that do not fully support their occupational health programmers [120]. Moreover, in many developing countries it is difficult to put in place any control strategies specifically for psychosocial risks since there is either inadequate or simply lacking policy with relation to these types of risk [38].

Health effects of psychosocial hazards in the workplace

Health effects of workplace psychosocial hazards arising from work places are varied and enormous. They may include lack of concentration, fatigue, burnout, depression, anxiety, social and behavioral problems, other common mental disorders, and to physical ill-health such as cardiovascular diseases, musculoskeletal disorders, obesity, metabolic syndrome and diabetes.

The vital role of work as health determinant has been the matter of extensive research and debate and has been established by studies on the relationship between poor working conditions, ill health and poor performance [108,125-128].

In many economies, particularly developing ones, workplaces are often characterized by low wages, unstable jobs, sexual harassment, bullying, threats, long working hours, temporary and precarious contracts and subcontracting. All these make the work environment unhealthy.

Health consequences of stress and exposure to psychosocial risks can, for example, appear in the form of anxiety and non-communicable diseases such as depression [72,129], chronic diseases, such as coronary heart disease, which has an impressive evidence base [48,86,87,130-134] certain cancers [135,136], musculo-skeletal disorders [72,137], obesity [138], substance abuse [87,139,140], and violence [16,38]. Moreover, Quick, Horn and Quick (1986) confirmed that work-related stress can result in behavioral, medical and psychological problems.

Findings by Rosengren et al. [141] show that several factors associated with psychosocial stress were associated with increased myocardial infarction and were relatively consistent across the different geographic regions, ethnic groups, and ages, both in men and women. Healthcare workers, civil servants, teachers, policemen, engineers, drivers, textile workers, railway workers, hotel workers, and airport workers were among the groups studied [141].

Effects on workers' health from psychosocial risks were explored through a European survey of self-reported work-related illness prevalence estimates, which indicates a significantly increased risk of work-related stress, depression and anxiety for those reporting higher workloads, tighter work deadlines, lack of support at work and being physically attacked or threatened at work [142]. A meta-analysis (2004-2005) indicated that particularly combinations of high demands and low decision latitudes as well as high effort and low rewards are associated with emotional disorders, such as depression and anxiety [75]. Effort-reward imbalance in particular has been noted to be associated with cardiovascular diseases, poor self-perceived health, and several mental disorders [74].

Findings from work-related stress research are also consistent with the more general life event stress literature showing that specific acute work-related stressful experiences contribute to depression and, more importantly perhaps, that enduring structural occupational factors, which may differ according to occupation, can also contribute to psychological disorders [75]. There are significant health implications for employees, their families, employers and indeed the wider community [143]. In particular, in times of financial uncertainty and economic crisis, effects such as increased suicides have been observed. This is, for example, the case in Latvia where the suicide rate increased by 15% from 2007 to 2008 [20]. In the same report, Norway suggested rather a negative health impact of unemployment, such as reduced life expectancy, cardiovascular diseases, anxiety and depression, and increased alcohol consumption, whereas the impact on suicide would remain unclear.

Also, repeated re-organizing, downsizing and expanding of organizations, has become very common and is related to established health effects among workers and employees [144,145] and the experience of job insecurity has been associated with poorer physical and mental health outcomes [146-150].

Sustained job insecurity due to precarious labor market position has been linked to poor health behaviors by way of declines in specific coping mechanisms. Some evidence shows that temporary employment is associated with increased death from alcohol-related causes and smoking-related cancers [139]. The WHO estimated that 400 million people around the world suffer from mental or neurological disorders or from psychosocial problems such as those related to smoking, drinking and drug abuse [77].

Temporary employment has also been associated with behaviors like over-compensating and sexual harassment [151]. A study identified self-perceived job insecurity as the single most important predictor of a number of psychological symptoms such as mild depression [152]. Hence, workers exposed to chronic job insecurity are more likely to report minor psychiatric symptoms as compared to those with secure jobs.

Research also indicates a potential link between the two most prevalent work-related problems, work-related stress and musculoskeletal disorders [153,154]. A dramatic rise in work-related musculoskeletal disorders in the Republic of Korea caused by work psychosocial factors, awkward working postures and repetitive body movements, has been observed since 2000 [154]. Study found increasing risk of work-related diseases and accidents in Southeast Asian countries which have experienced rapid industrialization [153].

A recent Korean survey revealed the most often reported work-related symptoms to be muscular pain (shoulder, neck, upper arms and lower extremities) (18.1%), followed by stress (17.9%), backache (16.8%), fatigue (16.7%) and headache (11.2%) [72]. In the Republic of Korea researchers have observed a significant increase in work-related cerebro-vascular and cardiovascular diseases since the mid-1990s [72,154]. Stress and increased risk of cardiovascular diseases represents one of the best established associations, as addressed lately by the INTERHEART Study [73], a multi-center, multi-regional (Asia, Europe, Africa, USA, Australia) investigation, which demonstrated excess risk of myocardial infarction associated with psychosocial stressors.

Several other studies demonstrate a strong positive association [155, 111], between work place stress and ill-health. Chandola and Jenkinson found that job stress is longitudinally associated with the incident of coronary heart disease, low physical activity, poor diet, and lower heart rate variability. In fact, 32% of the stress-coronary heart disease association is mediated through health behaviors [96]. Current estimates and scientific research reveal that in Germany around 20,000 cases of heart attacks have work-related causes. Ten thousand of these could be prevented by stress prevention at the workplace [87,156].

It has also been suggested that large-scale intervention studies are still required to advance our understanding of causality and means of prevention in the relationship between work-related stress and disease [92,157,158], although it would seem that the impact of the work content and context on physical and psychological health, and health behaviors, is a well-researched area in industrialized country contexts.

Depression is one of the most prevalent mental disorders found in the general community and in the workplace. Depression poses some diagnostic difficulty and can manifest as physical symptoms, such as

headache, back pain, stomach problems, or angina. Work stressors have also been linked to work related psychological disorders, such as depression, stress and anxiety [75]. Depression has also been related with occupational and work stress [159], and 8% of depression has been ascribed globally to environmental factors, in particular work related stress [78]. One consequence of long-term exposure to stress may be burnout. Burnout is often accompanied by insomnia, headaches, gastrointestinal symptoms, a variety of muscular and joint pains, lapses in memory, and depressive moods [18].

Iacovides et al. [160] reported in a study conducted in Japan, that among male industrial workers whose jobs are associated with high levels of stress had more than eleven-fold relative risk of depression. Indeed, depression is expected to account for 15% of the global burden of disease [161]. The WHO identified that in Europe, mental health problems and stress-related disorders are among the highest overall cause of early death [77]. WHO further stresses that the prevalence of depression, suicide and other stress-related conditions together with destructive life-styles and psychosomatic diseases, cause immense suffering to people and their families beyond Europe. In addition, specific phenomena, such as Karoshi (death by overwork and more recently 'death by suicide at work') have become social issues in Asian countries, in particular Korea, and Japan. Suicides particularly increase with the pressures of the economic crises [162].

Stress and depression as well as other related psychiatric problems are all major contributing risk factors to the burden of disease and the loss of quality of life within the European Union context. It was later outlined that these problems are common, contribute to human suffering and disability, and increase the risk of social exclusion, increase mortality and have negative significant implications to national economies. Ministerial Conferences on Mental Health were held by the WHO Regional Office for Europe in 2003 and in 2005. The latter had a session on mental health at work. The theme was 'there is no health without mental health'.

In addition, to date, the European Social Partners issued two framework agreements on work-related stress [163] and on psychological harassment and violence at work [164], after extensive but successful social dialogue. It has also been argued for the urgent need of stronger social dialogue structures given the global market pressures for organizations to meet competing demands by adopting short-term economic goals instead of long-term sustainable work systems that have the potential to balance competitiveness with quality of work life [17].

In 2008, a follow-up conference entitled "Together for Mental Health and Well-being" was held in Brussels [17]. Preparations are underway in Europe to strengthen the business case for tackling poor mental health at work, the high rates of absenteeism, reduced productivity, and premature withdrawal from the labour force due to mental health challenges related to work-related stress. The value of mental health and work is also recognized by the European Community Strategy on Health and Safety at Work for 2007-2012. This Strategy refers to the contribution of good health in guaranteeing that quality and productivity at work can promote economic growth and employment [164].

On 27 April 2009, the Member States of the European Union held a Round Table to Reduce the Psychosocial Impact of the Financial and Economic Crisis. Research findings reiterate the negative health impact on higher rates of anxiety and depressive disorders due to financial insecurity, the relationship between higher debt and increased prevalence of mental disorders, as well as an increased risk by factor

2-4 of suicide in the unemployed. The measures that require taking are clearly beyond the workplace and require engagement at political and economic levels as well as by civil society. For example, suggests that research that takes factors such as increasing risks of becoming unemployed or being required to change jobs, into account, will be well positioned to help make changes in the work environment and to ensure that new work environments are designed to enhance health from the start.

The Korean Government included a regulation concerning prevention of health problems due to job stress. The national policy for job stress management in Korea is connected to the policy for prevention of work-related cerebro-vascular and cardiovascular diseases and addresses particularly working populations that work long hours do shift work including night work, drivers and controllers. The duties of employers include risk assessment and management with respect to job stressors, their causes and health outcomes with a focus on cerebro-vascular and cardiovascular diseases, hypertension, stressing prevention and general wellbeing [72].

Tobacco smoke consists of solid particles and gases. More than 4000 different chemicals have been identified in tobacco smoke. The number of these chemicals that are known to cause cancer in animals, humans or both is reported to be in the range from 30 to 60 (WHO, 2001a). The solid particles make up about 10 percent of tobacco smoke and include tar and nicotine. The gases or vapors make up about 90 percent of tobacco smoke. The major gas present is carbon monoxide, while other gases include acrolein, formaldehyde, nitrogen oxides, ammonia, hydrogen cyanide, pyridine, N-nitrosodimethylamine, vinyl chloride, and acrylonitrile.

Impact of psychosocial hazards on work

Work necessarily is also a site of social engagement, within and across job categories [52-55]. For any given person in any given job at any given worksite, working entails interactions with permutations of peers, subordinates, and supervisors or superiors and, in some jobs, interacting also with external clients or customers, including the public at large.

Moreover, the "any given person" in any particular job is not simply a lump sum of "human capital" with a specified amount of experience, skill, and education. Instead, each worker is not necessarily embedded in her or his societal context, but simultaneously embodies and brings to the work place her or his social position in association with the key societal divisions involving power and property, including class, gender, sexuality, race/ethnicity, nationality, and citizen status, to name a few [56]. From this embodied perspective, as elaborated by economic theory [56,58], work is a locus not only of economic production but also of social reproduction of social relationships of the society at large. In other words, "the worker" is not simply a "worker."

Social relationships both at the place of work and outside are most commonly conceptualized as playing a regulating role, and detrimental effects of being exposed to other psychosocial hazards are more likely or more prominent when relationships become un-mutual, non-cordial and provide little help and support [165]. The net implication is that, in a context of societal equality, additional workplace hazards can plausibly include racial discrimination, sexual harassment, and workplace abuse, with the first two also encompassing experiences that occur both in and outside work [53,57,59-61].

Psychosocial hazards are therefore capable of disrupting internal equilibrium of social relatedness and interpersonal relationship at work place. The cumulative effects of these is lowering work efficiency,

low productivity and in most cases losses. A fuller analysis of workers' health and workplace hazards thus translates to a concern with not only job-specific hazards but also the broader societal context in which workers live their lives and do their work [62].

The impact of psychosocial risks on well-being can be demonstrated in many ways. Absences are one concrete consequence for businesses and economies at large. For example, a study from Rugulies and colleagues demonstrated that violence was a strong predictor of absence in human service workers. In particular bullying is likely to prevail in stressful working environments where workers are exposed to high levels of interpersonal conflict and noxious leadership styles, including those characterized by avoidance behaviors [166].

For example, between July 2007 and June 2008, an estimated 5.8 million scheduled working days were lost to sickness or injury, and women and part-timers working in the public sector were found to be most likely to be absent from work because of sickness or injury [167]. Interestingly, also those working less than 16 hours per week were less likely to be absent than those working over 45 hours [167], suggesting the impact of work context in terms of working hours as a psychosocial risk for illness. In 2008, the British Cabinet Office estimated the total cost of absences at £393 million.

Usually, industrialized countries enjoy a welfare system that provides a public "safety net", as a result of which the problem of unemployment is shared by the government [168]. In the absence of a welfare system that may protect workers who are unable to work, for example, workers in developing countries are likely to continue to work despite the challenges of disability or as a result of their mental illness, [168], however with reduced productivity. The negative impact on workplace productivity is, therefore, even overblown, and goes beyond the direct costs as a result of impairment in the workplace.

Statistics show that in many industrialized countries, 35-45% of absenteeism from work is due to mental health problems [71] and 40% of employee turnover is due to stress at work [169]. Mental health is often used interchangeably with emotional, spiritual and social, well-being [170]. There is now a strong belief that mental health problems and stress-related disorders are among major cause of premature death in Europe [77,171].

The level of related costs of not preventing work related psychosocial risks may eventually help to stimulate action in this area, as these costs can be enormous. Therefore, addressing psychosocial risks, also in developing countries, should be recognized as an important objective, particularly when statistics show that the collective cost of stress is high for national economies and at global level, in particular for mental health problems [169]. Although research [16] indicates that impact from psychosocial risks reaches beyond the workplace, Nuwayhid [37] argues that the internal domain of occupational health research, such as focusing on workplace hazards, work organization, exposure-disease spectrum, etc., works well in industrialized countries.

Principles of control of hazards

The real responsibilities for health and safety are placed on everyone in the workplace. The workers' main duty for health and safety at the workplace is complementary to the worker's job and they need to receive adequate instruction, information, training as well as supervision to fulfill it.

Psychosocial wellbeing can be promoted by the following actions instituted at work places; if all employees are contracted with the goals and tasks of the work community, division of work is fair and clear,

employees know what they must do and what they are responsible for, employees have the power to influence their own work, the flow of information is reciprocal and goes in many directions, employees get feedback and support and if the interaction between bosses and subordinates is open and confidence is holding.

In spite of the available evidence, has shown that the prevention and management of work related psychosocial risks have not been high on the contemporary global policy agenda. Consequently, the Commission for Social Determinants of Health recommended that while occupational health and safety (OHS) policies remain of vitally important, the results strongly revealed the need to increase the remit of OSH in order to include work-related stress as well as other harmful behaviors [31].

Some positive developments, however, include addressing psychosocial risks in the workplace stress not in legislation, but in specific policy frameworks in industrialized or industrializing countries, including Korea, Brazil, or South-East European countries. Currently, however, most developing countries do not even have any significant policies that address occupational health issues in general, even though many governments will claim that they are responsive to workers' needs [34].

This would also include a number of considerations. One such consideration, for example, would need to be that women's work is not protected adequately in a number of developing countries largely due to traditional norms and misperceptions of women's work as being less significant, supplementary or unskilled [37]. As a matter of fact, occupational health laws cover only about 10% of the population in developing countries.

Most small-scale industries in industrializing countries lack appropriate occupational health regulations and protective or control measures [41]. Theoretical and empirical research in the work-related stress literature has mainly focused on individual or job task domain causes of work-related stress [172]. At the same time, interventions at the workplace level may have a significant positive impact on the quality of life of workers and hence improve both socio-economic sustainability [173]. According to the logic of a hierarchy of causes, the 'causes of the causes' (referring to social context, social stratification, differential exposures and vulnerabilities and differential health outcomes) [174], the greatest impact should arise from targeting more distal causes, and interventions should focus at the organizational level.

Dollard and Karasek [97] stress that an intervention at enterprise level may include monitoring, and modifying working conditions and funneling resources, as well as building conditions that are conducive to healthy production. Interventions designed for the macro level, could also be applied at enterprise level to promote effective psychosocial risk management, especially where country systems to support the macro initiatives are not fully developed or lacking sophistication [175].

In some countries, primary healthcare services are provided through the workplace, which is an ideal setting for early interventions and for promoting and protecting the health of workers and their families [100]. The workplace may also become a setting for treatment, but foremost for prevention. Whilst health promotion in workplace and related settings has received significant attention in industrialized countries, but the main focus of mental health promotion has been on work related stress in general [173].

Materials and Methods

Study area

This study was conducted among workers at the University of Port

Harcourt (UNIPORT). The University of Port Harcourt (UNIPORT) was formally known as the University College Port Harcourt. It is among one of the Federal Tertiary Institutions of Higher learning. UNIPORT was formally established in the year 1975 by the Federal Government of Nigeria. The school was later given full University status in 1977 by the then military head of state, General Olusegun Obasanjo. UNIPORT motto is "Self-reliance and Discipline". The University of Port Harcourt is situated in Choba Town in Obio/Akpor Local Government Area, along the famous East-West Road, Port Harcourt. University of Port Harcourt Teaching Hospital (UPTH), is adjacently situated to the University of Port Harcourt. Port Harcourt, being the capital of Rivers State, the hub of oil exploration is highly industrialized and cosmopolitan in nature, harboring people of different ethnic backgrounds. The University of Port Harcourt, located within the outskirts of Port Harcourt metropolis, serves as a centre covering a large catchment area including the neighboring states.

Upon establishment the University used the schooling system, which was later changed in 1982 to faculties system. The University started with six schools, but today the University has grown to 11 Faculties, 1 College, and a Graduate school, and other Research Institutes and Centre, chief among them are the Institute of Petroleum Studies (IPS), Regional Centre for Biotechnology, Centre for Nuclear and Energy Studies, Emerald Energy Institute, and Institute for Natural Resource, Centre for Maternal and Child Health, Centres for Malaria and Phytomedicine, Health and Disease Prevention, Centre for Research and Development and Conflict Resolution, Environmental and Sustainable Development (INRES). The University of Port Harcourt has the College of Health Sciences, which housed Medicine and Surgery, as well as foundation schools of basics studies. The University also has business school of management. In addition to these, the University also runs the Regular programme, Part-time programme as well as the Sandwich programme.

Academically, the University of Port Harcourt is ranked 10th among Nigerian Universities, with staff strength of about 4,655 workers, and 60,000 to 70,000 students. The UNIPORT is a federal public educational institution and as such its work force reflects the federal character as constitutionalized in Nigeria. The staff is categorized into academic and non-academic staff. The academic staff include Professors, Associate Professors/Reader, Senior Lecturers, Lecturer I and II, Assistant Lecturers, and Graduate Assistants, while the non-academic staff are those working in Central Administration, Bursary department, Library Department, Works and Maintenances, University Security, School Transport Department, Laborers, Cleaners as well as Dispatchers. The academic staff members are all senior staff, while the non-academic staffs are categorized into junior and senior staff.

Study design

This study adopted a descriptive cross-sectional approach.

Scope of the study

The study scope of this study was limited workers at the University of Port Harcourt. The scope of the study was limited to only participants who are either academic and non-academic staff of the University of Port Harcourt.

Study population

The study population consisted of permanent staff in the University of Port Harcourt. These staff were randomly selected from the various department which they work, and this was done for both junior and senior staff. They were permanent staff who have worked in their

respective Departments and Units for at least a period of two years. They consisted of both male and female. As University staff, majority of respondents have at least basic educational qualification.

Inclusion criteria:

1. Bonafide staff of the University of Port Harcourt.
2. All Staff who undersigned the consent form.
3. All adults who are aged 18-70 years.
4. Must have worked not less than 2 years in the University.

Exclusion criteria:

1. Casual staff
2. Below 18 years and above 70 years
3. Less than 2 years at the work place
4. Not willing to give neither information nor informed consent.

Sampling

The sample size was calculated using Araoye's the formula for proportional compares.

$$N = z^2 pq / d^2$$

Where,

N=minimum sample size

=normal stated deviation (this corresponds with the desired confidence level of the study for 95%

confidence interval which equals 1.96).

P=Proportion or estimated prevalence rate.

q=1 - prevalence

d=allowable error (it is the difference between the true population rate and the sample rate one wishes to tolerate), which is 5 percent within 95% confident limit.

Sample size for the study population: In 1995, the WHO explained that about 30-50% of workers report exposure to biological, physical, or chemical hazards or unreasonably heavy work overload in their workplace or other gonomical factors that may contribute to adverse or hazardous health effect on them which further affect their working capacity; and went further to say that an equal number of working people report psychological overload at work resulting in stress symptoms [176]. Similarly, in the Delphi study, African participants felt that the education and teaching sector was one of the sectors most associated with psychosocial hazards as high as 56%. From these two studies, the author decided to take a mid-position (prevalence) of 50%.

Substituting this overall prevalence rate of 50 percent into the equation:

$$N = z^2 pq / d^2$$

$$N = (1.96)^2 (0.50) (1-0.50) / (0.05)^2$$

$$= 384$$

This will be upgraded to 451 (addition of 20% of the calculated sample size) to make room for any attrition. However, the author chose to go beyond this minimum sample size, up to 600, for reasons of design effect. Furthermore, was to increase the power of the study and

also to make it more representative considering the staff strength of the university of Port Harcourt of 4655.

Method of sampling

This study utilized a multistage sampling method. First stage involves cluster sampling that categorized the workers in the University of Port Harcourt into academic or non-academic staff. Second stage involved a stratified sampling method for each cluster that helped categorized them into various departments. The third stage involved a systematic random sampling technique which was used to identify each subject from the various departments of University of Port Harcourt. At the end, groups from each clusters and departments identified and categorized along the following: for academic staff, The academic staff include Professors, Associate Professors/Reader, Senior Lecturers, Lecturer I and II, Assistant Lecturers, and Graduate Assistants, while the non-academic staff may include cleaners, dispatchers, computer/secretarial staff, technicians, accounting staff and administrative officers.

Study instruments

The following instruments were used in this study:

1. A self-structured questionnaire which includes open ended questions, socio-demographic characteristics and research questions: The questionnaire was written in simple and clear English and was divided into sections on such as the socio-demographic characteristics of respondents, psychosocial hazards, possible risk factors and suggestion of possible solutions.
2. A walk through survey was adopted. The study was conducted on the spot, using unannounced, uninformed, impromptu, and immediate assessment of workplace.

Pilot study

A pilot study was carried out among workers in the Rivers State University of Science and Technology (RSUST), Port Harcourt, with a sampled population to ascertain the reliability of the research instrument. It was only those that met the criterion set for this study that were selected in RSUST, however, it is imperative to note that these workers were not included in the main study. The pilot study was carried out to ascertain the ease with which the instrument would be administered, to determine the acceptability, clarity or ambiguity of the questionnaire items and identify logistic problems. The questionnaire did not require be translating and back translating as the predominant language was Pidgin English and the respondents were able to understand the English version of the instrument, majority been educated. The questionnaire was self-administered, however, for the lower cadre staff was not be able to complete, they were guided and assisted to complete the questionnaire. It took about 5 minutes each for the subjects to complete the socio-demographic questionnaire.

Procedure

Having computed the appropriate sample sizes, data was collected on working days using the systematic random sampling. Consecutive respondents were sorted out by the author based on the inclusion and exclusion criteria. Those who fulfilled the criteria were recruited and administered the study instruments. Clarifications were offered to the subjects on request. Consent was gotten from all participants. Health education and awareness was carried out for the participants after completing the questionnaires. A letter was written to the

Vice Chancellors of the Universities, asking for approval for a Walk through Survey before the study and seeking for audience to meet the management and staff, after the Walk Through Survey to relate to them of the outcome. The Walk through Survey is expected to afford the author the opportunity of physically assessing the working environment and conditions, to compare with the outcome of the study and also to guide possible recommendations. The study spanned through a period of 6 weeks (1st of August, 2015 to 16th September, 2015).

Data collection

The informed consent was first obtained from the subjects. Thereafter they completed the socio demographic and study questionnaires which were self-administered while lower cadre staff was assisted in completing the questionnaires. Two research assistants were trained and they assisted in the data collection.

Statistical analysis

Analysis of data was done using SPSS Software, version 20 (IBM Corporation, 2011). The mean descriptive statistics was used to analyze preliminary variables, while for continuous variables, the means, standard deviations (SD) and analysis of variance (ANOVA) were used to analyze them. For other categorized variables, mean descriptive statistics was used to analyze them including the numbers as well as proportions in each of the categories. Additionally, frequency distributions with tables were generated while chi-square test was used to compute the level significance for the study. The conventional 5% of level of significance was set. A 95% confidence interval was set for the study with and a P-value of less than 0.05 was considered statistically significant.

Data presentation

Data were presented using tables, figures and graphs.

Walk through survey (analysis or assessment)

A Walk Through survey to some Departments and Units of the University was undertaken. It is an on the spot, impromptu, unannounced, uninformed, immediate assessment of any work place, with the aim of identifying hazards and risks and proffering possible solutions to them. Most hazards and risks identified during a Walk Through can be directly or indirectly linked or associated with occupational diseases or work related ill-health.

Components of occupational walk through survey

Description of site: This involved the location, size of workforce, range of occupation and processes: The author looked at building patterns, location and allocation of offices, number of staff in each office, conditions of the offices, engineering workshops, and distances of workshops from offices, availability of protective girds at the workshops, level of noise generated, road network and accessibility.

Hazards identification: This was accomplished by logical grouping into different types of physical, chemical and psychosocial hazards.

Risk assessment: This involved identification of hazards or risks, quantification, characterization, identification of those at risk and further assessed how these could be contributory in adding to the stress of workers or making them more vulnerable to psychosocial hazards. The author looked at the work schedule, work content and work load per staff; shift, casual and annual leave schedule

Further investigations: This was done before making objective statements. The author visited more administrative offices, lecturers

offices, workshops of work department, transport offices, security posts, lecture halls and classrooms and there level of ventilation, presence of lift for high rising buildings, appointment and promotion criteria to assess its fairness, library and presence of e-library as this will reduce the workload on the library staff, presence of relaxation centers, the power station to ascertain its functionality, availability and location of conveniences.

Conclusion: It was reached after organizing meetings, first with the workforce, to clearly explain to them what have been found, second with the management and finally with both management and staff and then a report was written and handed over to the university management.

Ethical consideration

Ethical clearance to conduct the study was obtained from the ethical and scientific committee of the University of Port Harcourt. Every participant in the project was informed adequately about the nature, extent, and purpose of the research. They were required to sign a Consent Form. They were enlisted only after they had given their consent. Any affected staff or cases of negative finding during the Walk through Survey were treated with utmost confidentiality. Participants needed not disclose their identity and neither the identity of involved bosses and subordinates as perpetrators. Any such affected individual was offered counseling and other forms of psychosocial supports with informed consent.

Results and Discussion

Summary of main characteristics of study subjects=558

A total of 600 questionnaires were distributed to respondents who fulfilled the selection criteria, out of which 558 responded and were retrieved. Out of this, 77 (13.8%) were non-academic staff while 48 (86.2%) were academic staff. The most prevalent age group was 36-45 with 199 (35.7%). Out of the total respondents, 299 (53.6%) were male while 259 (46.4%) were female.

Married subjects dominated the respondents with 452(81.0%), the single was 49 (69%), Separated, 5 (71.4%) and divorced 12 (80%). The majority of the participants possessed tertiary level of education, with 501. Majority was Christians and many of the participants were indigenes of Rivers State. Twice as many of the respondents were living in urban area compared to the number that was residing in rural areas.

Senior staff constituted the majority with 516 (92.5%), while among the academic staff, the middle cadre comprising of Lecturers I and II formed the majority of the respondents. Those who have worked as long as 2-10 years as staff of the University were 301(53.9%) followed by those of 11-20 years with 190 (34.1%) (Table 1).

Socio-demographic characteristics and experience of psychosocial hazards

Variables	Frequency	% Experienced	% not Experienced	Analysis of Variance (ANOVA)
Age (Years)				
18-25	50	26 (52%)	24 (48%)	
26-35	101	69 (68%)	32 (32%)	df=5
36-45	199	136 (68.3%)	63 (31.7%)	p=0.041
46-55	148	98 (66.2%)	50 (33.9%)	
56-65	41	16 (39%)	25 (61%)	
66-75	19	6 (31.6%)	13 (68.4%)	
Gender				
Male	299	187 (62.5%)	112 (37.5%)	df=1
Female	259	209 (80.7%)	50 (19.3%)	P=0.972
Marital status				
Married	452	273 (60.4%)	179 (39.7%)	
Single	71	49 (69%)	22 (31%)	df=4
Separated	7	5 (71.4%)	2 (28.6%)	P=0.740
Divorced	15	12 (80%)	3 (20%)	
Widowed	13	8 (61.5%)	5 (38.5%)	
Level of education				
Primary	12	5 (41.7%)	7 (58.3%)	df=2
Secondary	45	34 (75.6%)	11 (24.4%)	P=0.001
Tertiary	501	308 (61.5%)	193 (38.5%)	
Religion				
Christianity	523	318 (60.8%)	205 (39.2%)	df=2
Islam	35	19 (54.3%)	16 (45.7%)	p=0.07
Traditional	-	-	-	
Tribe				
Ikwerre	117	77 (65.8%)	40 (34.2%)	
Ogoni	64	41 (64.1%)	23 (35.9%)	
Ijaw/Kalabari	59	33 (55.9%)	26 (44.1%)	df=4
Etche/Ogba	34	15 (44.1%)	19 (55.9%)	p=0.038
Others	284	181 (63.8%)	103 (36.3%)	
Living place				
Urban	245	136 (55.5%)	109 (44.5%)	df=2
Semi Urban	211	125 (59.2%)	86 (40.8%)	p=0.236
Rural	102	82 (80.4%)	20 (19.6%)	

Table 1: Socio demographic characteristics of respondents.

The most prevalent age group was 36-45 with 199 (35.7%). Of this figure, 136 (68.3%) had experienced psychosocial hazards. Of the total number of females, majority, 209 (80.7%) compared to the males, had experienced psychosocial hazards.

Married subjects dominated the respondents with 452(81.0%), however the single 49 (69%),

Separated, 5 (71.4%) and divorced 12(80%) appeared to have more proportion of those who have experienced psychosocial hazards. The majority of the respondents possessed tertiary level of education; however, those with secondary education have the highest proportion of those who have experienced psychosocial hazards, 34(75.6%) (=55) (Table 1).

Categorization of workers at the University of Port Harcourt

College of natural and applied sciences has the highest number of workers who had experienced one form of psychosocial hazards or the other with 47 (81%) n=58, followed by college of continuous studies with 31 (73.8%) n=42. Experience of psychosocial hazards was higher among non-academic staff with 54 (70.1%) as well as junior staff with 35 (83.3%) compared to academic and senior staff respectively. Those who have worked as long as 2-10 years as staff of the University were 301 (53.9%) followed by those of 11-20 years with 190 (34.1%), however, the latter group had the highest proportion of subjects who have experienced psychosocial hazards, 129 (67.9%) (Table 2).

Variables	Frequency	% Experienced	% Not experienced	Analysis of Variance (ANOVA)
Place of work				
College of health sciences	58	32 (55%)	26 (45%)	df=16 p=0.678
College of engineering	57	41 (72%)	16 (28%)	
College of natural and applied sciences	58	47 (81%)	11 (19%)	
College of continuous education	42	31 (73.8%)	11 (26.2%)	
Faculty of law	35	19 (54%)	16 (46%)	
Faculty of humanities	37	18 (49%)	19 (51%)	
Faculty of education	37	16 (43.2%)	21 (56.8%)	
Faculty of management	36	21 (58.3%)	15 (41.7%)	
Faculty of social sciences	35	21 (60%)	14 (40%)	
Faculty of agriculture	34	17 (50%)	17 (50%)	
School of graduate studies	29	16 (55.2%)	13 (44.8%)	
School of basic studies	34	18 (52.9%)	16 (47.1%)	
Central admin	51	42 (82.4%)	9 (17.6%)	
Bursary	5	2 (40%)	3 (60%)	
Information and communication studies	4	3 (75%)	1 (25%)	
Security	4	1 (25%)	3 (75%)	
Works	3	2 (66.7%)	1 (33.3%)	
Employment rank				
Academic	481	283 (58.9%)	198 (41.2%)	df=1 p=0.968
Non academic	77	54 (70.1%)	23 (29.9%)	
Category of academic staff				
Graduate assistant	36	17 (47.2%)	19 (52.8%)	df=8 p=0.668
Assistant lecturer	61	34 (55.7%)	27 (44.3%)	
Lecturer ii	122	85 (69.7%)	37 (30.3%)	
Lecturer i	132	98 (74.2%)	34 (25.8%)	
Senior lecturer	96	36 (35.5%)	60 (62.5%)	
Reader	9	4 (44.4%)	5 (55.6%)	
Professor	17	7 (41.2%)	10 (58.8%)	
Contract staff	5	2 (40%)	3 (60%)	
Staff on sabbatical	3	0 (0%)	3 (100%)	
Category of non-academic staff				
Cleaner	15	11 (73.3%)	4 (26.7%)	df=7 p=0.618
Technician	5	3 (60%)	2 (40%)	
Dispatcher	10	6 (60%)	4 (40%)	
Computer operator	20	15 (75%)	5 (25%)	
Secretariat staff	-	-	-	
Account staff	-	-	-	
Admin staff	12	10 (83.3%)	2 (16.7%)	
Senior admin staff	15	9 (60%)	6 (40%)	
Category of staff				
Junior staff	42	35 (83.3%)	7 (16.7%)	df=1 p=0.985
Senior staff	516	312 (60.5%)	204 (39.6%)	
Duration of employment				

2-10	301	194 (64.5%)	107 (35.5%)	df=5 p=0.944
11-20	190	129 (67.9%)	61 (32.1%)	
21-30	53	21 (39.6%)	32 (60.4%)	
31-40	14	3 (21.4%)	11 (78.6%)	
41-50	-	-	-	
>50	-	-	-	

Table 2: Various categorizations of workers in the University of Port Harcourt.

Prevalence of social (psychosocial) hazards among the workers in the University of Port Harcourt

From available literature, similar psychosocial hazards were grouped together under broad headings. Therefore, from Table 2 below, among the psychosocial hazards that form workplace bullying as well as verbal abuse has the highest proportion with 245 (43.9%), closely followed by assigning meaningless tasks unrelated to the worker's job with 230 (41.2%), then intimidation and harassment with 193 (34.6%), while isolating or excluding particular workers was 78 (14.0%).

For the psychosocial hazards that form work place abuse, being screamed or yelled at with 220 (39.4%), followed by Disrespectful behavior with 209 (37.5%), then Verbal aggression with 136 (24.4%), while Threats / bribes was the least with 35 (4.4%). Under occupational violence, physical attack was the sole psychosocial hazards studied and the prevalence was 9.9% (n=55). For psychosocial hazards that make up Sexual Harassment, unwanted sexual attention has the highest prevalence with 34 (6.1%), followed by gender-based hostility with 3.8% (n=21) while Sexual coercion was the least with 2.9% (n=16).

Next was work-related stress, which had the highest prevalence of all the psychosocial hazards studied with 62.2% (n=349). Ethnic discrimination was studied as a one-item psychosocial hazard and it had the least prevalence with 7% (n=39). For psychosocial hazards that fall under work related fatigue, environmental stress had the highest occurrence with 312 (56%), followed by mentally and physically demanding work with 190 (34.1%), while regular work at night was the least with 4.8% (n=27) (Table 2).

Frequency of occurrence of social (psychosocial) hazards among the workers in the University of Port Harcourt

The assessment of the occurrence among respondents' psychosocial hazards, the section was categorized into 4 headings, very regular, regular, occasional as well as rare(almost does not occur).

For very regular, the psychosocial hazard that occurred with the most frequency was environmental stress with 0.9% (n=5), followed by threats/bribes with 0.7% (n=4), while Mentally and physically demanding work, inadequate amount of quality sleep, isolation / exclusion and substances use in work place were 0.4% each.

For regular, environmental stress was the most regular in occurrence with 9.9%, which is closed followed by the assignment meaningless tasks unrelated to the worker's job with 9.1%, work related stress with 8.7%, being screamed or yelled at with 7.7% , intimidation or harassment with 5.6% and verbal aggression with 5.4% (Table 3).

Pattern of perpetrations of social (psychosocial) hazards among the workers in the University of Port Harcourt

The results shows that majority of the social (psychosocial) hazards were committed by bosses. The assigning of tasks that is impossible for the workers to successfully complete attracted the highest proportion with 98.70%. Others, equally committed by bosses were changing work roasters with the intentionally in order to cause inconveniency for

particular worker (96.02%), threats of dismissal (96.84%), verbal abuse (97.07%), being screamed or yelled at (96.09%), mentally and physically demanding work (96.93%), harassment and intimidation (96.14%), verbal aggression (94.09%), threats /bribes (86.67%), disrespectful behavior (83.25%) and Physical Attack (82.89%). The study equally found high levels of perpetration by subordinates in the following psychosocial hazards; sexual coercion (46.15%), gender-based hostility (44.12%), substance abuse (40.51%), unwanted sexual attention (38.96%), racial discrimination (36.11%), isolation and excursion (18.37%), physical attack (17.11%) and disrespectful behavior (16.75%) (Table 4).

Social (Psychosocial) hazards among academic and non-academic staff at the University of Port Harcourt

Out of 481 (100%) respondents of academic staff in the study, about 283 (58.84%), had experienced one form of social (psychosocial) hazards or the other, while out of the 77 non-academic staff studied, 54 (70.13%) of them had experienced social (psychosocial) hazards at their working environment inside the University (Table 5 and Figure 1).

Assessment of the likely risk factors for social (psychosocial) hazards among the workers in the University of Port Harcourt

From the study, the most prevalent risk factors for social (psychosocial) hazard as supposed by employees at University of Port Harcourt was workload with 548 (98.2%), followed by home-work interface with 458 (82.0%), lack of possibilities to advance forward 392 (70.1%), lack of career development 327 (58.7%), work content with 329 (60%) while constant state of alertness (CSA) was the least with 98 (17.6%) (Table 6 and Figure 2).

The possible suggestion and solutions that could reduce social (psychosocial) hazards in workplaces within the University of Port Harcourt

From the study, respondents who indicated that periodic in-service training (PIT) would be an appropriate solution or preventive measure for reducing prevalence of psychosocial hazards in the University were highest with 428(76.70%), followed by enlightenment of University workers with 386(69.18%) and then those who mentioned introduction of occupational health and safety programmes (OHSP) with 293(52.40%) (Table 7).

Results of walkthrough survey

The University of Port Harcourt is located along the East-West Road, Choba Town in Obio-Akpor Local Government Area, adjacent the University of Port Harcourt Teaching Hospital, both in Rivers State of Niger Delta Region, Nigeria. Port Harcourt, as the capital of Rivers State and the hub of oil exploration, is highly industrialized and cosmopolitan in nature. The City harbors people of different ethnic backgrounds. The University of Port Harcourt, located within the outskirts of Port Harcourt metropolis, serves as a centre covering a large catchment area including the neighboring states (Table 8).

The University of Port Harcourt has three adjoining campuses

S/N	Psychosocial hazards n=558	% Of people who have experienced psychosocial hazards	% Who have not experienced psychosocial hazards	Of the number who has experienced psychosocial hazards	
				Junior Staff n=42	Senior Staff n=516
1	Workplace bullying				
	a. Verbal abuse	245 (43.9)	313 (56.1)	39 (92.9)	206 (39.9)
	b. Excluding or isolating particular employees	78 (14.0)	478 (85.7)	26 (61.9)	52(10.1)
	c. Harassment or intimidation	193 (34.6)	365 (65.4)	41 (97.6)	152 (29.5)
	d. Assigning meaningless tasks unrelated to the employee's job	230 (41.2)	328 (58.8)	37 (88.1)	193 (37.4)
	e. Assigning tasks that are impossible for the employee to successfully complete.	154 (27.6)	404 (72.4)	31 (73.8)	123 (23.8)
	f. Changing work roasters with the deliberate intention of inconveniencing particular employee.	135 (24.3)	423 (75.8)	27 (64.1)	108 (20.1)
	g. Threats of dismissal	97 (17.5)	461 (82.6)	22 (52.4)	75 (14.5)
2	Workplace abuse				
	a. Being screamed or yelled at.	220 (39.4)	338 (60.0)	34 (81.0)	185 (35.9)
	b. Being sworn at.	113 (20.2)	445 (79.7)	16 (38.1)	97 (18.8)
	c. Verbal aggression.	136 (24.4)	422 (75.6)	33 (78.6)	103 (20.0)
	d. Disrespectful behavior	209 (37.5)	349 (62.5)	12 (28.6)	197 (38.2)
	e. Isolation/exclusion	37 (6.7)	521 (93.4)	15 (35.8)	22 (4.3)
	f. Threats/bribes	35 (4.4)	523 (93.7)	31 (73.8)	4 (0.8)
	g. Physical aggression	51 (9.2)	507 (90.9)	26 (61.9)	25 (4.8)
	h. Substances use in work place.	60 (10.8)	498 (89.2)	15 (35.7)	45 (8.7)
3	Occupational violence				
	a. Physical attack	55 (9.9)	503 (90.1)	16 (38.1)	39 (7.6)
4	Sexual harassment				
	a. Sexual coercion.	16 (2.9)	542 (97.1)	14 (33.3)	2 (0.4)
	b. Unwanted sexual attention.	34 (6.1)	524 (93.9)	22 (52.4)	12 (2.3)
	c. Gender-based hostility.	21 (3.8)	537 (96.2)	13 (31.0)	8 (1.5)
5	Work-related stress				
	a. Work-related stress	347 (62.2)	211 (37.8)	41 (97.7)	306 (59.3)
6	Racial discrimination				
	a. Racial discrimination	39 (7)	519 (93.0)	29 (69.0)	10 (1.9)
7	Work-related fatigue				
	a. Mentally and physically demanding work.	190 (34.1)	368 (65.9)	31 (73.8)	159 (30.9)
	b. Long periods of time awake.	47 (8.5)	511 (91.6)	41 (97.6)	6 (1.2)
	c. Inadequate amount of quality sleep.	43 (7.7)	515 (92.3)	36 (85.8)	7 (1.3)
	d. Regular work at night.	27 (4.8)	531 (95.2)	19 (45.2)	8 (1.5)
	e. Environmental stress.	312 (56)	246 (44.1)	38 (90.5)	274 (53.1)

Table 3: The prevalence of social (psychosocial) hazards among the workers in the University of Port Harcourt.

namely Choba campus, where the University took off from, Delta Park which is separated from the former by the busy East-West road and the Abuja campus which is the permanent site of the University.

The University of Port Harcourt has four Colleges, nine Faculties and four Schools. The Colleges include health sciences, natural and applied sciences, engineering and continuous education while the faculties include those of humanities, pharmaceutical sciences, management sciences, social sciences, law, agriculture, basic medical sciences, clinical sciences and education. The University of Port Harcourt has the schools of basics studies, science laboratory, and business school of management and graduate studies. In addition to these, the University also has a number of functional and high performing institutes and centres. Among them are institutes of Petroleum studies, maternal and child health, centres for malaria and phytomedicine, health and disease prevention, child development and communication disorders, research and development and conflict resolution. The University runs the Regular, Part-time as well as the Sandwich programmes.

The University as at the time of this research has staff strength of about four thousand six hundred and fifty five (4655) workers who cater for a student's capacity of between 60,000 to 70,000. The University of Port Harcourt, being a federal public educational institution, its work force has been made to as much as possible reflect the federal character principle of Nigeria. The staff categories are along academic and non-academic staff. The academic staff includes graduate assistants, assistant lecturers, lecturers 1 and 2, senior lecturers, readers and professors, academic contract staff and those on sabbatical leave. The non-academic Departments/Units include those of Central Administration, Bursary, Library, Works, Security, Transport, Cleaners and Dispatchers. All academic staff is senior staff while the non-academic staffs are made up of both Junior and Senior staff.

The University also has some facilities like medical centre, nursery, primary and secondary schools, two filling stations, senior staff club, a gym, information and communication technology centres, a drama theater, swimming pool, a mosque and two chapels for worship. The

S/N	Psychosocial hazards		Very Regular	Regular	Occasional	Rare (does not occur)
1.	Workplace bullying					
	a. Verbal abuse	558	0 (0.0)	27 (4.8)	218 (39.1)	313 (56.1)
	b. Excluding or isolating particular employees.	556	0 (0.0)	12 (2.2)	66 (11.8)	478 (85.7)
	c. Harassment or intimidation.	558	0 (0.0)	31 (5.6)	162 (29.0)	365 (65.4)
	d. Assigning meaningless tasks unrelated to the employee's job.	558	0 (0.0)	51 (9.1)	179 (32.1)	328 (58.8)
	e. Assigning tasks that are impossible for the employee to successfully complete	558	0 (0.0)	18 (3.2)	136 (24.4)	404 (72.4)
	f. Changing work rosters with the deliberate intention of inconveniencing particular employee	558	2 (0.4)	20 (3.6)	113 (20.3)	423 (75.8)
	g. Threats of dismissal	558	2 (0.4)	7 (1.3)	88 (15.8)	461 (82.6)
2.	Workplace abuse					
	a. Being screamed or yelled at.	558	0 (0.0)	43 (7.7)	177 (31.7)	338 (60.0)
	b. Being sworn at.	558	0 (0.0)	18 (3.2)	95 (17.0)	445 (79.7)
	c. Verbal aggression.	558	0 (0.0)	30 (5.4)	106 (19.0)	422 (75.6)
	d. Disrespectful behavior	558	1 (0.2)	24 (4.3)	184 (33.0)	349 (62.5)
	e. Isolation/exclusion	558	2 (0.4)	2 (0.4)	33 (5.9)	521 (93.4)
	f. Threats/bribes	558	4 (0.7)	4 (0.7)	27 (4.8)	523 (93.7)
	g. Physical aggression	558	0 (0.0)	7 (1.3)	44 (7.9)	507 (90.9)
	h. Substances use in work place	558	2 (0.4)	10 (1.8)	48 (8.6)	498 (89.2)
3.	Occupational violence					
	Physical attack	558	0 (0.0)	7 (1.3)	48 (8.6)	503 (90.1)
4.	Sexual harassment					
	a. Sexual coercion.	558	0 (0.0)	1 (0.2)	15 (2.7)	542 (97.1)
	b. Unwanted sexual attention.	558	0 (0.0)	3 (0.5)	31 (5.6)	524 (93.9)
	c. Gender-based hostility.	558	0 (0.0)	2 (0.4)	19 (3.4)	537 (96.2)
5.	Work-related stress					
	Work-related stress	558	0 (0.0)	48 (8.6)	299 (53.6)	211 (37.8)
6.	Racial discrimination					
	Racial discrimination	558	0 (0.0)	7 (1.3)	32 (5.7)	519 (93.0)
7.	Work-related fatigue					
	a. Mentally and physically demanding work	558	2 (0.4)	14 (2.5)	174 (31.2)	368 (65.9)
	b. Long periods of time awake	558	0 (0.0)	11 (2.0)	36 (6.5)	511 (91.6)
	c. Inadequate amount of quality sleep	558	2 (0.4)	9 (1.6)	32 (5.7)	515 (92.3)
	d. Regular work at night	558	1 (0.2)	3 (0.5)	23 (4.1)	531 (95.2)
	e. Environmental stress	558	5 (0.9)	55 (9.9)	252 (45.2)	246 (44.1)

Table 4: The frequency of occurrence of social (psychosocial) hazards among the workers in the University of Port Harcourt.

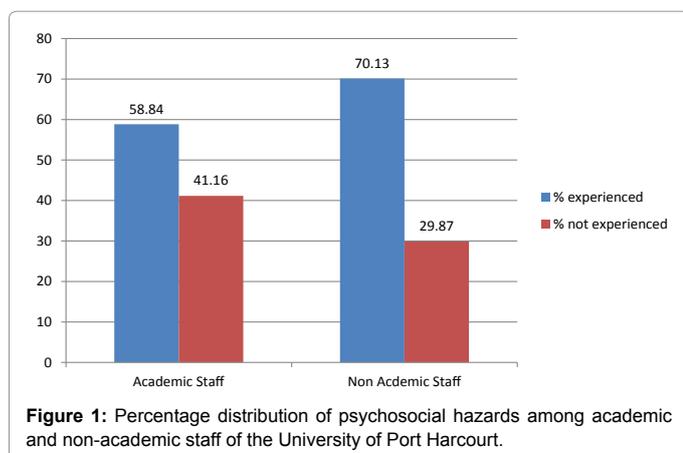


Figure 1: Percentage distribution of psychosocial hazards among academic and non-academic staff of the University of Port Harcourt.

University is also equipped with five different banks spread across the three campuses that cater for the financial transaction needs of both students and workers. There is also a food stuff and general commodities Choba market adjacent both Choba and Delta Park campuses. The benefits of all these facilities will include among others

to ease life around and within the campuses, reduce the stress of having to travel long distances to access these facilities and services.

The author found work schedule, guidelines for staff appointment and promotion and ascertained its fairness. Some of the offices have air-conditioners while a good number do not have. Almost all the classrooms and lecture halls were without air conditioner and most of the ceiling fans have broken down. The number of classrooms and lecture halls are still not adequate relative to the number of students and the different programmes being run by the University. Many of the general administrative and academic staff offices were occupied by average of 5 staff per office. However, offices of the principal and very senior staff of the University were adequately furnished and made conducive. There were a number of high rising buildings but none of them has lift facilities.

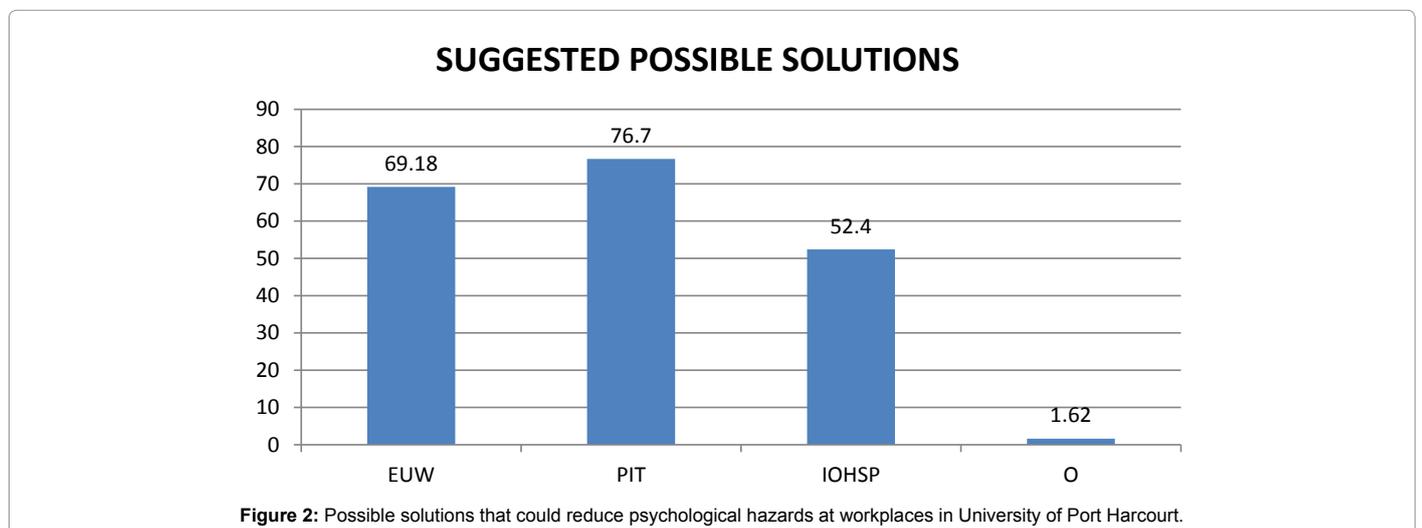
Many of the staff interviewed during the work-through survey remarked that power supply in the University is still inadequate and as a result they work under hot and unfriendly atmosphere. Majority of the internal roads were good while very few were in deplorable conditions. All the gates leading to the three campuses are mounted by security official. Cleaning is equally contracted to a private security firm.

SL. no	Social Hazards	Perpetrators	
		Boss	Subordinate
1	Workplace Bullying		
	a. Verbal abuse	364 (97.07%)	11 (2.93%)
	b. Excluding or isolating particular employees	136 (93.79%)	9 (6.21%)
	c. Harassment or intimidation	224 (96.14%)	9 (3.86%)
	d. Assigning meaningless tasks unrelated to the employee's job	313 (94.43%)	5 (1.57%)
	e. Assigning tasks that are impossible for the employee to successfully complete	227 (98.70%)	3 (1.30%)
	f. Changing work roasters with the deliberate intention of inconveniencing particular employee	217 (96.02%)	9 (3.98%)
	g. gender-based hostility	153 (96.84%)	5 (3.16%)
2	Workplace abuse		
	a. Being screamed or yelled at.	295 (96.09%)	12 (3.91%)
	b. Being sworn at.	144 (91.72%)	13 (8.28%)
	c. Verbal Aggression	175 (94.09%)	11 (5.91%)
	d. Disrespectful behavior	169 (83.25%)	34 (16.75%)
	e. Isolation/exclusion	40 (81.63%)	9 (18.37%)
	f. Threats/bribes	26 (86.67%)	4 (13.33%)
	g. Physical aggression	62 (84.93%)	11 (15.07%)
	h. Substances use in work place	47 (59.49%)	32 (40.51%)
	i. Physical Attack – O V	63 (82.89%)	13 (17.11%)
3	Sexual harassment at work		
	a. Sexual coercion.	21 (53.85%)	18 (46.15%)
	b. Unwanted sexual attention	47 (61.04%)	30 (38.96%)
	c. Gender-based hostility	38 (55.88%)	30 (44.12%)
4	Work-related stress		
	Work-related stress	359 (96.77%)	12 (3.23%)
5	Racial discrimination		
	a. Racial discrimination	23 (63.89%)	13 (36.11%)
6	Work-related fatigue		
	a. Mentally and physically demanding work	221 (96.93%)	7 (3.07%)
	b. Long periods of time awake.	28 (82.35%)	6 (17.65%)
	c. Inadequate amount of quality sleep.	24 (85.71%)	4 (14.29%)
	d. Regular work at night	15 (88.24%)	2 (11.76%)
	e. Environmental stress	272 (84.74%)	49 (15.26%)

Table 5: Pattern of perpetrations of social (psychosocial) hazards among the workers in the University of Port Harcourt.

Category of Staff	Frequency	% who have experience	% not experience
Academic staff	481	283 (58.84%)	198 (41.16%)
Non-Academic Staff	77	54 (70.13%)	23 (29.87%)

Table 6: Percentage distribution of psychosocial hazards among academic and non-academic staff of the University of Port Harcourt.



S/N	ITEMS	Frequency	Percentage
1	Changes in the working population (CWP)	315	(56.5)
2	Job content (JC)	329	(60.0)
3	Work pace (WP)	284	(50.9)
4	Work load (WL)	548	(98.2)
5	Work schedule : shift work, long work hours and overtime (WS)	296	(53.0)
6	Forced pace of work (FPW)	232	(41.6)
7	Environment and equipment (EAE)	306	(54.8)
8	Control (c)	216	(38.7)
9	Interpersonal relationships at work (IRW)	357	(64.0)
10	Organizational culture and function (OCF)	275	(49.3)
11	Role in organization (RIO)	251	(45.0)
12	Violence, threat of violence and bullying at work (VTB)	281	(50.4)
13	Home-work interface (HWI)	458	(82.0)
14	Lack of career development (CD)	327	(58.7)
15	Working alone or night work (WANW)	121	(21.7)
16	Repetitive or monotonous work (RMW)	189	(33.9)
17	Social work load (SWL)	203	(36.3)
18	Constant state of alertness (CSA)	98	(17.6)
19	Too high expectations or goals (THEG)	258	(46.2)
20	Too busy (TB)	241	(43.1)
21	Lack of job and workplace orientation (LJWO)	270	(48.4)
22	Lack of possibilities to advance (LPA)	392	(70.1)
23	Uncertainty of employment (UE)	113	(20.1)
24	Lack of job descriptions and responsibilities (LJDR)	267	(47.8)
25	Poor working atmosphere (PWA)	219	(39.2)
26	Poor management or organization (PMO)	304	(54.5)
27	Lack of social support (LSS)	182	(32.6)
28	Lack of interaction (LI)	167	(29.9)
29	Lack of possibilities to influence decision making (LPIDM)	269	(48.2)

Table 7: Likely risk factors of psychosocial hazards among workers at the University of Port Harcourt.

S/N	ITEMS	Percentage responses (%)
1	Enlightenment of University workers (EUW)	386 (69.18%)
2	Periodic in-service training (PIT)	428 (76.70%)
3	Introduction of Occupational Health and Safety programmes in the university (IOHSP)	293 (52.40%)
4	Others (O)	9 (1.62%)

Table 8: Percentage suggested possible solutions that could reduce psychosocial hazards at workplaces in the University of Port Harcourt.

The University operates some welfare packages including overtime and leave bonuses, travel allowances for principal officers, Christmas packages, staff biological children admission concession, small scale credit loan facilities and conferences sponsorship for staff. However, some of the welfare package shaves not been consistent and very effective.

After the work-through survey, separate meetings were held with the representatives of the University management, staff union, and a third meeting with both groups. During the meetings, a detail report of the work-through was presented. In the meeting with the staff representative, purpose of the meeting, aim of the study and the need for the work-through were all explained to the attendees. They made their contributions, commendations and pointed out areas of short falls as well as displeasures.

In the meeting with the management of the University, the author commended the University for All the Developmental Strides, but however pointed out the few areas that more efforts have to be made to improve the working environment and making it more conducive and productivity friendly [86,177]. The author clearly pointed out the need to improve the working conditions, adding that workers can never be efficient working in an adverse and unfriendly environment [97]. The author equally noted that some physical and chemical hazards can as

well predispose the workers, making them rather vulnerable to various forms of psychosocial hazards.

In the joint meeting, the need for both staff and management to work in harmony, good interpersonal relationship, and hard work and reward for hard work, commitment, and improvement in staff welfare were all stressed. Workplace bullying makes for a harsh and an unhealthy working environment [75,178], and this often may be responsible for most of the poor performances observed among workers in workplaces.

Discussions

Socio-demographic characteristics of respondents and psychosocial hazards: From the study, the age group that had the highest prevalence of psychosocial hazards was age of 36-45 years, and this was followed by that of 26-35 years. This also constituted the age groups that were most represented in the study. This is expected because this age ranges make up the most active and vibrant age of labor with possibly the highest experience and as such, they may be saddled with the responsibility to perform and deliver. It is equally important to mention that most employers make this age range a criterion for employment [76]. The study noted a statistically significant relationship between age and experience of psychosocial hazards ($p=0.041$).

From the study, males pre-dominated. This finding agrees with

previous study [61,179]. This may also as well reflect the recruitment pattern of the University. However, more females appeared to have experienced psychosocial hazards reflecting reports in available literature [124,180]. This relationship however was not statistically significant ($p=0.972$). Despite the fact that majority of the respondents were married, subjects who were not married appeared to have recorded the highest prevalence of experiences of psychosocial hazards. This may indicate the fact that singlehood may confer some higher vulnerability to the different forms of psychosocial hazards [181]. However, the study found no statistically significant ($p=0.740$) relationship between marital status and experience of psychosocial hazards. Majority of the respondents had acquired tertiary education reflecting the fact that the University of Port Harcourt is a tertiary institution of learning, and to this end most of the recruitments would necessarily make the possession of a tertiary level degree a requirement.

The study noted that those who possessed lower level of education (lower academic qualification refers to primary and secondary education) experienced higher prevalence of psychosocial hazards compared to those with higher academic qualification. This may be a reflection of the fact that higher educational qualification will naturally go with higher position with the tendency to play the role of bosses and possibly give order and command, sometimes in an unfriendly manner to their subordinates. The relationship between level of education and experience of psychosocial hazards was found to be statistically significant ($p=0.001$). This finding is in line with previous studies which have indicated that experience of psychosocial hazards is more prevalent among those with lower socioeconomic occupations or disadvantaged occupational classes [52,96]. It noted that indeed, the lower the socioeconomic position, the higher the risk of exposure to adverse and stressful working conditions [54,74], and also more vulnerable to poorer health [96].

Majority of the respondents were Natives of Rivers State. This may simply reflect the fact that the University is situated in Rivers State. However, there was a statistically significant relationship between ethnicity and experience of psychosocial hazards in this study ($p=0.038$). This finding agrees with earlier documentation that for minority groups, ethnic discrimination is a stronger predictor of health and psychosocial outcomes than are traditional job stresses [99].

Both the duration of employment as well as category of staff did not show any statistically significant relationship with experience of psychosocial hazards. However, the study noted that psychosocial hazards were more experienced by workers with shorter duration of employment than the longer staying staff. A possible explanation to this observation could be that the younger staff may still be new to their job, with little or experience. This may make them more prone to making mistakes that may warrant yelling, coupled with the fact that they may not have known their rights adequately [24], and at such may be vulnerable to undue intimidation and harassment.

Pattern and prevalence of psychosocial hazards among workers at the University of Port Harcourt: Workplace bullying is defined as repeated unreasonable and harsh behavior directed towards an employee or group of employees that creates a risk to health or safety of the worker [98]. Verbal abuse, a form of bullying, was found to be common among the workers and in majority of cases, was being perpetrated by their bosses. Poor performances, nonchalant attitude, laziness, poor attention to work, late coming, absenteeism and outright mistakes on the part of the employee may all warrant verbal abuses. Most times, a worker may experience burnout when over worked, and may begin to show inefficiency due exhaustion, poor attention

and concentration, accompanied by diminishing return [51,182]. This may also trigger verbal abuse. Excluding or isolating particular employees does occur but the rate of occurrence was low. Harassment or intimidation was found to be common among the workers and were also mostly perpetrated by bosses.

Work place bullying could equally be a reflection of the personality of the perpetrators [98]. Anger prone individuals or a perfectionist most often may be quick to unleash verbal abuses on workers especially their subordinates. Very rarely, younger staffs have out of accumulated anger, frustration or perceived victimization, being verbally abusive to a boss. Often, this may in turn lead to intimidation, threat of or outright dismissal. In either way, it is clearly identified as psychosocial hazard.

From the study, assigning or delegating near difficult tasks to the employee, changing work schedule with the deliberate intention of inconveniencing particular employees, and threats of dismissal were also found among the workers. All these could serve as instruments of victimization by bosses. Excluding particular employee by a boss or an employer was also found from the study. This commonly occurs where a more experienced staff wants to hoard a particular knowledge or skill from a younger or newly engaged employee. Even though a single incident does not constitute bullying, one-off incidents should not be taken for granted, as the tendency for subsequent occurrences may be high.

Interestingly, occurrence of one form of workplace bullying or abuse can fuel or trigger the occurrence of another [183]. For instance, a boss who perceives that a particular younger worker is disrespectful to him or her can decide to exercise any of the forms of bullying to the affected younger staff.

Psychosocially unfriendly and adverse working environment can predispose the worker to other physical illnesses particularly cardiovascular disorders including hypertension, coronary heart diseases [22,111,132,133] and myocardial infarction. For instance, strong relationship has been established between depression and anxiety and occurrence of cardiovascular disorders [184]. This is due to amplification of the sympathetic system.

Earlier study has remarked that stress resulting from verbal abuse is particularly common in work places [99]. The same study estimated that at least 10% of European workers are currently subjected to bullying at work places. Exposure to workplace bullying has been linked to anxiety, depression, sometimes with suicidal ideation, insomnia and stress [99,102]. This is also in line with another study that found significantly greater proportion of respondents in the high stress group agreeing that they had been physically or emotionally affected by bullying at their work places [185]. This may be responsible for the poor performance of some employees, as depression slows down thinking capability, psychomotor activity, memory, alertness, decreases energy and ultimately reduces performance and productivity [102,106,143,186], while anxiety causes restlessness, feeling on edge and poor attention and concentration [184].

A study had earlier indicated that up to 40% of subjects who were experiencing bullying in a large scale Norwegian survey had thoughts of suicide [178]. The contemplation of suicide may come as a result of declining performance and productivity, tendency to making mistakes, forgetfulness occasioned by the stress of bullying and or anxiety or depression and to worsen it all, threat of dismissal may follow all these cascades. So, is like a vicious cycle experienced by the employee.

Ironically, some employers erroneously believed that some forms of bullying are meant to improve the performance of employee.

Employers should try as much as possible and so far as is reasonably practicable, that risks to health and safety of the worker from bullying are eliminated or reduced. Employees equally have some obligations under the OHS Act 2004 to take reasonable care of their own and other's health and safety and to cooperate with their employers in accordance with steps that must be taken to comply with a requirement under that Act.

Work place abuse among workers at the University of Port Harcourt was also studied. From the findings in the study, for the psychosocial hazards that form work place abuse, "being screamed or yelled at" had the highest prevalence, followed by disrespectful behavior, then verbal aggression while threats / bribes was the least. Substance abuse at work place and "isolation/exclusion," occur with lower prevalence. Being screamed or yelled at, isolation and exclusion, verbal aggression, being sworn at and threats/bribery were mostly perpetrated by bosses. These have all being identified to make the work environment unsafe and conducive [75]. On the other hand, disrespectful behaviors were mostly perpetrated by subordinates. Substance use at work places and physical aggression were almost equally perpetrated by both bosses as well as subordinates.

These findings were consistent with findings from other studies which have earlier identified that the most common form of workplace abuse, "being screamed or yelled at was likely to be perpetrated by the participants' boss, coworker, someone at a lower job level, or someone else (e.g., a customer) [64]. Repeated screaming or yelling at a subordinate could occur due to the personality of the perpetrator, as a natural instinct or due to poor work performance on the part of the subordinate. Studies have identified most perpetrators of verbal aggression as people who have poor anger control and/or management [64]. However, verbal aggression has being identified to follow sometimes repeated corrections or warnings to a staff. In few instances, subordinates have being found to be verbally aggressive to their bosses.

Threats/bribes had the lowest prevalence. This may be due to the fact that workers are aware of the repercussion that such behavior may attract if a staff is found to be culpable. This is same for physical attack that was equally low compared to the other forms of work place abuse. Substance abuse is generally high outside the work place [60]. However, the low occurrence at work place observed in this study may be due to the fact that workers may not be permitted to use any of the psychoactive substances in their workplaces particularly during working hours. Alcohol is a sedating psychoactive substance and as such could render the worker drowsy on his or her work, making it obvious [184]. For this reason, many workers who use alcohol may choose to take it after work.

Physical aggression may equally have being low in this study because workers may be aware that it carries very fierce punishment including dismissal. For both physical attack and verbal aggression, and indeed all other forms of workplace abuse, calls have been made for a thorough employment selection measures including detailed personality assessment and possibly mental health evaluation as part of the pre-employment and pre-placement medical examinations [187].

Under occupational violence, physical attack was the only psychosocial hazards studied and the prevalence was 9.9% (n=55). Verbal and physical aggression and physical attack all form a continuum and can occur in fast progression by a perpetrator, who may have the same line of personality traits [188-191]. Some scholars have opined that 'physical attack' can occur regardless of the attacker's intent and includes situations where an employee is attacked by a person who may not be able to form intent, but their behaviour is capable of causing

harm [112]. In the community services sector, the main threat of violence is from clients or residents. However, violence in the workplace can be perpetrated by co-workers at any levels (including managers, supervisors or employers), people known to the organization (such as family members of people in care) and intruders [190,191].

The finding from this study relating to occupational violence is similar to other report which also stresses that 6% of the European workforce had been exposed to threats of physical violence, 4% to violence by other people and 5% to psychological harassment at work over the past 12 months [183]. Violence and psychological harassment at work are considered psychosocial risk factors [164]. In fact, poor interpersonal relationships have been demonstrated to be a significant antecedent of the stress process when they are characterized by behavior that is harassing or abusive [183,192].

From the study, however, majority of the respondents said occurrence of occupational violence among workers in the university was rare. These findings may be due to the fact that there exist regulatory sanctions for perpetrators of violence in any work place including the University of Port Harcourt [116,193]. These may include various forms of punishments ranging from suspension with or without pay, demotion to dismissal/ termination of work. The fear of these forms of punishment may propel workers to control their anger and not allow it to degenerate to violence. This finding is in agreement with earlier study in which all regions which participated in the study saw violence and harassment at work as important headed by the Eastern-Mediterranean participants (80%), but Africans perceive this as the least important issue to be addressed (32%) [100]. The stress that results from occupational violence has been estimated to contribute between 10% to 30% of workers' compensation claims [99].

For psychosocial hazards that make up sexual harassment, unwanted sexual attention has the highest prevalence, followed by gender-based hostility while sexual coercion was the least. Sexual coercion may actually be more than the prevalence found in this study. However, due to cultural reasons and stigma, a number of people may have reservation to divulge such information despite the promise of utmost confidentiality by the researcher. Secondly, it is the fact that many workers naturally would like to exercise restraint knowing fully the consequences of such behavior [193]. More so, most cases of sexual coercion are likely to be perpetrated by the bosses, and some subordinates who are naive and who are not fully informed of their right [24], may not want to expose their boss for fear of further victimization

A good number of studies have remarked that women are constantly vulnerable and exposed to these forms of psychosocial hazards [100]. The Delphi results from a study to determine if men and women are equally vulnerable to psychosocial risks and work-related stress noted that the highest prevalence of issues affecting the female workforce pertains to work, family, social responsibilities and multi-tasking [100,179]. It has been noted that gender considerations play a significant role when studying working conditions. It equally been observe that women and men have different experiences when it comes to occupational health, as the women generally engage in other types of work, which also means they are exposed to different risks and work-related health problems [179]. Women have suffered particularly badly from an increase in assembly line, low-quality and precarious jobs [194]. Therefore, the vulnerable position of working women and changing demographic patterns require particular attention [76]. Many are balancing responsibilities for paid and unpaid work which often leads to stress depression and fatigue [124], Experts perceived

that male-dominated societies particularly affect women [61,100]. Vulnerability due to maternity-related leave reached equally close consensus and also issues of inequality and lower pay for equal work was an issue [195]. Others were gender segregation, working in rural areas, competition with men, and lastly, lack of legislation against discrimination were also noted by some studies as part of women's vulnerabilities [100,179].

However, African participants in the Delphi study felt that competition with men for higher status jobs was a non-issue [100]. In the African setting, aspiring for a higher status job does not confer any extra vulnerability on a woman. Many a times, women who get to compete with men for same position often are as qualified as the men. This may probably follow many years of intensified campaigned for education of the female child and gender equality. However, this is not so for low status women, as studies have established that they are often under pressure of sexual harassment [68].

A study identified six areas that make women central in the issue of workplace hazards [100]. The first refers to social role vulnerabilities, the second to sexual harassment on women, the third to gender and occupational sector, the fourth to the work-life interface, the fifth on gender and general discrimination, particularly with respect to women's social and work positions, and lastly, strengths of each gender. Due to a number of different reasons, women were described as being more vulnerable than men. For example, women experience higher exposure to psychosocial risks [179]. When the women get tired, they get fired, with no unemployment benefit [100].

Sexual harassment has severally been mentioned as a particular vulnerability affecting women and appears to be happening more with women than men in work places [179]. A study had earlier identified some high prevalence of sexual harassment and general workplace abuse among university employee [64] and generally in academic workplaces [196]. In terms of women's vulnerability in certain jobs and occupational sectors, initially, there was a concept as female-dominated jobs particularly the service and the healthcare sector [181,194,197-199]. Equally, women occupied simple and low rank service jobs and no managerial jobs [179].

Furthermore, other typical sectors for women were in domestic services [124,180], but since societal roles are changing, women roles in society are equally changing. Women now have to work in jobs traditionally dominated by men, and they have to balance work and home life [100,124,180,200,201]. This often makes them more susceptible to work-related stress and psychosocial hazards at work places, because they have to plan their time and exert energy in many fronts. Sexual harassment at work places leave the victims with untold psychological stress and trauma [68], and may even result in post-traumatic stress disorder [64,202].

It has also been argued that men equally have vulnerabilities due to social expectations and socially-enhanced behaviors, supporting it with the fact that men are also exposed to stress, but express it less and may act it out [179]. Men are suffering (because of a new law on gender equality), because they don't know how to deal with this [117,118]. Men are vulnerable by the way they are brought up. They do not want to accept their vulnerability. Often they self-medicate their stress with the use of alcohol. Men experience role overload, job insecurity, issues with career development, the need for achievement, and high competition [179].

The outcomes of sexual harassment appear to be similar to those following bullying, including impairment of health, quality of life and

well-being, depression, anxiety, and loss of concentration and poor attention to work [64,68,195]. Sexual harassment at work places is a significant stressor for women in our society. This may partly explain why depression and anxiety are traditionally more common in women than in men [184], and this obviously may affect their performance at work, fueling other forms of work place hazards like bullying and abuse.

Next was work-related stress, which had the highest prevalence of all the psychosocial hazards studied with 62.2% (n=349). Work related stress was studied as a single item and finding from the study indicated that it is common among workers at the University of Port Harcourt. Work-related stress could occur from several factors at the work place due to defenses between strength, abilities, skills, job demands and expectation, poor management practices, lack of participation in decision-making, faulty working tool and equipment, hostile environment and many others.

Without doubt, one of the most researched long-term consequences from exposure to psychosocial risk factors is work-related stress [50]. Stress has been conceived as the result of detrimental working conditions [27,28,30], but also as causing poor physical and mental health [19,46,50]. Stress is defined as a dynamic interaction between the individual and the environment and is often inferred by the existence of a problematic or difficult person-environment fit [203,204] and the emotional reactions which follow those interactions. Central to this approach is the role that environmental factors play in work stress [205], particularly the role played by psychosocial and organizational factors [79].

What constitutes the complexity of work-related stress is that it has been conceptualized as both an input variable, and as an outcome of a process that is referred to as stress, which makes it difficult to clearly distinguish between input and output [206]. For example, while in some studies, stress and illness are regarded as outcome of working conditions, other studies see work-related stress as causing mental health problems [75,128,143,186]. Despite complications, it can be inferred that psychosocial risks often makes the worker vulnerable or tend to predispose to the experience of work-related stress, since work-related stress is the response employees may have when faced with work demands and pressures that are unmatched to their knowledge, strength, abilities and which challenge their ability to cope⁷.

Stress is sometimes caused by poor match between workers and their work; by conflicts between our roles at work and outside it, and by not having a reasonable degree of control over our own life [207].

The definition stress is based on contemporary theories, and stress is treated as an emotional state, which is triggered by the person's appraisal of their situation at work. If the situation is perceived as stressful, the experience is unpleasant and occurs when the person realizes that demands are too high and they cannot cope, and when those demands are important or when their efforts are not adequately compensated or rewarded [80]. The issue of work-related stress has generated a lot of concerns for workers' health [47,71].

A strong association exist between workplace stress and development of physical [65,95] and psychological illnesses [40,170,208,209]. Although this study did not assess the physical health of the respondents, physical illnesses may accompany particularly persistent and long term exposure to psychosocial hazards. The European Foundation for the Improvement of Living and Working Conditions [210] reveals that work-related stress is among the most commonly reported causes of illness by employee. It also reports

that work-related stress affects more than 40 million individuals across the European Union. The themes that emerged and related to physical health outcomes following experience of psychosocial hazards include heart and circulatory effects [22,111,132,133], gastro-intestinal problems, musculoskeletal disorders [104], headaches- migraines- fatigue, skin effects and respiratory symptoms, as well as disability and injury and other chronic diseases such as diabetes and cancers [136].

Depressive illnesses, anxiety disorders and emotional problems, suicide or suicidal behaviours and general mental disorders are among the common mental health problems arising from work place stress [40,106,129,170,208,209-211]. They have all been found to greatly impact negatively on work performance, outcome and productivity [80]. Psychosocial hazards including workplace stress also affect the workers wellbeing and quality of life [129]. Physical and other environmental hazards came also cause or worsen already existing psychological problem, for example environmental noise and pollution. In this regard, the activities of oil exploration by the multinationals and also artisanal refining that go on in the Niger Delta, the climate change and heat emission may probably make the environment unsafe. However, the noise level within the university is relatively low.

Adverse health outcomes of work-related stress include unhealthy behaviors such as alcohol and drug abuse, and smoking. Many experts stressed the interrelationship between psychological and physical health while emphasizing the complexity of the former. Many researchers have come to understand that job stress is increasing, due to increased workload, increased job insecurity, and this is having an effect on workers' physical and psychological health. Psychosocial hazards can cause harm to a workers' physical and psychosomatic state, whereas physical hazards only cause somatic problems.

Psychosocial hazards are most often complicated, and they carry greater potential for harm. They can cause both psychological and psychosomatic problems. With traditional hazards you only have physical problems. A healthy and good psychological working environment can avert the consequences of poor working conditions [9]. Studies have noted the interrelationships of physical and psychosocial risks and their impact on workers' health [80]. Psychosocial hazards and stress can have an impact on physical wellbeing. They are interrelated and you cannot address the one without the other.

Ethnic discrimination was overall the psychosocial hazard with the least prevalence of 7% (n=39). This may be due to the fact that the University of Port Harcourt is a federal establishment and as such it is naturally expected that the federal character principle of the federal government of Nigeria will largely reflect in her employment, appointments and overall work culture. Moreso, studies have indicated that ethnic and racial discriminations are more common among Blacks than the Whites [60].

For psychosocial hazards that fall under work related fatigue, environmental stress was most prevalent, followed by mentally and physically demanding work while regular work at night was the least. This finding may simply be reflections of the fact that ninety five percent of the staff of the university undertakes day time work and only about less than five percent does night work, and these are the security staff. This is expected as environmental stress has continued to constitute major setback to many workplaces. These may be brought about by many deficient conditions including poor power supply both to work with and to reduce the heat experienced in the offices, poor maintenance and replacement culture, which make workers strain themselves to work with inadequate or poor performing machines or instrument. Working with poor performing equipment has being

found to predispose to both physical and psychological disorders (Levi, 2000). Earlier studies have shown evidence that exposure to poor equipment and work station design, in conjunction with poor task design and work organization give rise to work- related upper limb disorders [211,212].

This finding is equally also significant as studies have earlier noted that prolonged fatigue can have detrimental effects on physical and mental health [22,111,132,133,168]. These include sleep disorders; mood disturbances; gastrointestinal complaints; headaches; nausea; depression and other psychiatric disturbances, cardiovascular disease; irregular menstrual cycles; and problems associated with the disruption of medication regimes for medical conditions (for example, insulin for diabetes). Being a tertiary institution of learning, about 95% of the services/works are done in the day time, except the security unit. This may account for the reduced prevalence of work-related fatigue from regular work at night [213-215].

Assessment of rate of occurrence of the individual psychosocial hazards: In assessing the rate of occurrence of the individual psychosocial hazards, they were considered fewer than four headings, very regular, regular, occasional and rare, where rare indicates that the hazard does not occur. The psychosocial hazard that occurred with the most frequency was environmental stress while mentally and physically demanding work, inadequate amount of quality sleep, isolation / exclusion and substances use in work place were all similar in regularity.

This is expected as environmental stress has continued to constitute major setback to many workplaces. These may be due to poor working conditions which may include poor power supply both to workplaces and in the offices, poor maintenance and replacement culture, which often make workers strain themselves to work with low or poor performing machines or instrument. All these help to create stress of work and often making the employee vulnerable to work-related fatigue.

Threats/bribe was found to have low prevalence of occurrence in this study but interestingly occurs with very high regularity. This finding suggests that few workers may be involved in these as perpetrators, albeit on a regular basis.

It should however be noted that some psychosocial hazards with reduced regularity in this study may actually be occurring with somewhat higher frequency. For instance, Sexual coercion may actually be more than the prevalence found in this study. This is because a number of people may have reservation to divulge such secretive information due to cultural reasons and stigma.

Pattern of perpetrations of psychosocial hazards among workers at the University of Port Harcourt: From the study, majority of the psychosocial hazards were perpetrated by bosses particularly workplace bullying and abuse. Subordinates are much more likely to be victims of all forms of psychosocial hazards compare to bosses due to the higher ranks and status they occupy. Occasionally, the bosses regard some forms of psychosocial hazards as corrective measures, but they have often been found to be counter-productive [100].

However the study found an interesting trend in the level of perpetration by subordinates in some other hazards like sexual coercion, gender-based hostility, substance abuse, unwanted sexual attention, racial discrimination, where the prevalence were all almost the same with the bosses.

Very glaring in this study is the trend in work place sexual

harassment and racial discrimination. This supports the fact that not only do bosses are culpable in the different forms of sexual harassments, but it goes to say that even subordinates may sexually harass their bosses, especially unwanted sexual attention.

Psychosocial hazards among academic and non-academic, senior and junior staff at the University Of Port Harcourt: The academic staff studied was more in proportion but they had lower prevalence of psychosocial hazards compared with nonacademic staff. This finding may be considered along the line that nonacademic staff most time battle to contain the pressures from both students and the academic staff as well. Some of them are junior staff and may even serve in the capacity of subordinate to bosses who most often may be an academic staff. As such, they may be bound to take directives from their bosses, even when such directives are not very pleasant to them.

Additionally, those of them that are still junior staff may not be opportune to enjoy the luxuries of life compared to the academic staff. These may include remunerations, certain allowances and mobility. For instance, the non-academic staff that is a junior staff that will close work latter because he or she has to luck the offices, may not be mobile and as such experiences stress to get home unlike the academic staff. Also, in majority of cases, they carry higher work load and directly bear the burden of pressures from students compared to the academic staff. These may combine to put them in a more vulnerable condition to experience psychosocial hazards compared to the academic staff [22,111,132,133,168].

Assessment of risk factors of psychosocial hazards at the University of Port Harcourt: A number of risk factors were assessed ranging from changes in the working population, job content, work load, career development, home-work interface, lack of social support to lack of interactions. Work load was identified as the most prevalent risk factor, followed by home-work interface, interpersonal relationship and job content while working alone at night was the least.

This finding is consistent with earlier documentation that the most contributing factors to psychosocial risks and work-related stress have been noted to be embedded in the work content/ load and work context [63,73,216-218]. However, emerging and precarious forms of contracts in view of the current unstable labour market (employment conditions), high level of vulnerability of employees in the context of globalization, new forms of employment contracts, and job insecurity have been identified as important emerging psychosocial risks [16,187]. It has equally being found that the greater the contributing factors, the higher the levels of stress due to synergistic effects [16].

The content, context and volume of work which a worker has to do and accomplish within specified time has been found to be important determinant of psychosocial hazard. This description agrees with a documented definition of work-related stress as a pattern of reactions that occurs when workers are presented with work demands not matched to their knowledge, skills or abilities and which challenge their ability to cope [219]. When there is a perceived imbalance between demands and environmental or personal resources, reactions may include emotional responses (for example feeling nervous or irritated), cognitive responses (for example, reduction or narrowing of attention and perception, forgetfulness), behavioural reactions (for example aggressive, impulsive behaviour, making mistakes) and physiological responses (for example increased heart rate, blood pressure, hyperventilation, as well as secretion of 'stress' hormones such as adrenaline and cortisol), These will certainly make the worker vulnerable to making mistakes and then poor performance which may ensue certain forms of psychosocial hazards from their bosses or employers.

Another important set of risk factors are the narrow space and opportunity to develop in the service as seen in lack of career development, lack of opportunity to grow on the job and advance. This may sometime translate into lack of or delayed promotion. Worse still, at other time, a worker's promotion may be deliberately delayed or even stopped without any good reason or explanation.

From the study, lack of opportunity for career development and job advancement were identified as important risk factors for psychosocial hazards by respondents. This is expected because an affected worker will certainly loose the zeal to put in all his or her best due to lack of motivation [220]. This will result gradually decrease in productivity by the worker. This agrees with the proposition of Cox and Griffith that workers also have work-related stress when despite rendering perceived important work; their efforts are rather not adequately rewarded or even recognized. Appreciation and rewards even verbal are important motivating factors which fuel or increase performance.

Home-work interface was also found in this study as a risk factor for psychosocial hazards. This risk factor mostly affects women and interestingly, psychosocial hazards were more prevalent among women than the men in this study. A number of studies have supported similar finding [181,197,221,222]. Women are important key managers of homes and it has been said that they do thrice as much work as men. For these reasons, they may be more prone to burnout easily than men.

Possible solutions to psychosocial hazards identified by workers at the University of Port Harcourt: From the study, respondents noted periodic in-service training (PIT), followed by enlightenment of University workers (EUW) and then introduction of occupational health and safety programmes in the University (IOHSP) as possible effective remedies among others that could be put in place by the University to tackle and reduce the prevalence and burden of psychosocial hazards in the University.

This finding is in line with previous studies which have [101,193,223,224], earlier identified the importance of periodic in-service training (PIT) of workers particularly on occupational hazards, enlightenment of University workers (EUW) and then introduction of occupational health and safety programmes in workplace among other safety measures. These have been found to play key roles in curbing the menace of many psychosocial hazards experienced by workers [14,156].

Salience of work through survey: The University of Port Harcourt has made some commendable efforts at development and improving the work environment and by extension workers welfare, particularly in infrastructure, even though there is no standard or ideal tertiary learning institution development scale at the author's disposal with which a comparison can be made. However, there still remain more to be done in this regards. Importantly, these remain cardinal and key to worker's performance, health and wellbeing, quality of life and overall work productivity. Perhaps, this gap may have accounted for the presence of the various psychosocial hazards still being experienced by workers of the University of Port Harcourt.

Conclusion and Recommendations

Summary

Psychosocial hazards have been known all over the world to be barriers to work place productivity, and University of Port Harcourt, a federal tertiary institution of learning will not be an exception. This study was carried out to assess the prevalence and pattern of psychosocial hazards among workers at the University of Port Harcourt,

determine possible risks factors and also prefer possible solutions. The study found out that work place bullying was most prevalent among workers at the university of Port Harcourt, and was represented with verbal abuse as the most frequent, followed by assigning meaningless tasks unrelated to the employee's job, harassment and intimidation, assigning tasks that are difficult and sometimes almost impossible for the employee to successfully complete and drawing work schedule with the deliberate intention of inconveniencing particular employee.

The next most prevalent group of psychosocial hazards was workplace abuse. Most prevalent among this was being screamed or yelled at followed by Disrespectful behavior, Verbal aggression, being sworn at and substance abuse at work place. Work place abuse was followed by work-related stress, which was studied as a single psychosocial hazard on its own. It was the most prevalent single hazards found in the study with a prevalence of 62.7%. Workplace-related stress has remained a very important psychosocial hazard affecting workers particularly in developing countries and has been associated with workers low productivity.

Work place related fatigue was the next common group of psychosocial hazards this study found among workers at the University of Port Harcourt. Represented in this group was Environmental stress as the second single most prevalent psychosocial hazard with 52.3%, followed by mentally and physically demanding work and then Long periods of time awake.

Work place sexual harassment was the next and the most prevalent form among workers at the University of Port Harcourt found in the study was unwanted sexual attention followed by Gender-based hostility while Sexual coercion was the least. Occupational violence was found the next prevalent following sexual harassment in the study, while racial discrimination was the least prevalent psychosocial hazard among workers at the University of Port Harcourt.

Interesting patterns of psychosocial hazards among workers at the University of Port Harcourt were found in the study. The highest prevalent was among age group 36-45 while for gender, female experienced psychosocial hazards more than the male workers. Psychosocial hazards were most prevalent among the single, those with low level education and Muslims.

Psychosocial hazards were more experienced by the non-academic staff and the junior staff were more exposed compared to the senior staff. Psychosocial hazards were also noticed to slightly decrease with increasing number of years in employment in the University.

A number of risk factors were identified in the study as being capable of making a worker vulnerable to certain psychosocial hazards. They included work load as the most prevalent risk factor perceived by the respondents, followed by home-work interface, interpersonal relationship and job content while working alone at night was the least.

From the study, respondents identified Periodic in-service training (PIT) followed by Enlightenment of University workers (EUW) and then Introduction of occupational health and safety programmes in the university (IOHSP) as possible remedies among others that could be put in place by the University to tackle and reduce the prevalence and burden of psychosocial hazards in the University.

Conclusion

Prevalence and pattern of psychosocial hazards among workers at the University of Port Harcourt: The occurrence of psychosocial hazards among the workers at the University of Port Harcourt is

common. Most prevalent psychosocial hazards that form workplace bullying, verbal abuse, assigning meaningless tasks unrelated to the employee's job, then harassment and intimidation with 193(34.6%), while excluding or isolating particular employees was least.

Verbal abuses were found to be common among the workers and in majority of cases were being perpetrated by bosses. Verbal abuses commonly follow poor performances, nonchalant attitude, laziness, poor attention to work, late coming, absenteeism and outright mistakes on the part of the staff.

For work place abuse, being screamed or yelled at was the most prevalent followed by Disrespectful behavior, then Verbal aggression, substance abuse at work place while Threats / bribes and isolation/exclusion occur with the least prevalence.

Being screamed or yelled at, isolation and exclusion, verbal aggression, being sworn at and threats/bribery were mostly perpetrated by bosses. Disrespectful behaviors were mostly perpetrated by subordinates. Substance use at work places and physical aggression were almost equally perpetrated by both bosses as well as subordinates.

For psychosocial hazards that make up Sexual Harassment, unwanted sexual attention has the highest prevalence followed by Gender-based hostility while Sexual coercion was the least. Sexual coercion may actually be more than the prevalence found in this study. However, due to due to cultural reasons and stigma, a number of people may have reservation to divulge such information despite the promised of utmost confidentiality. Secondly, is the fact that many workers naturally would like to exercise restrained knowing fully the consequences of such behavior. However, a good number of studies have remarked that women are constantly vulnerable and exposed to these forms of psychosocial hazards. Moreso, most cases of sexual coercion were likely to be perpetrated by the bosses.

Work-related stress had the highest prevalence of all the psychosocial hazards studied Work-related stress could occur from several factors at the work place. Some of them may include differences between abilities, skills, job demands and expectation, poor management practices, lack of participation in decision-making, faulty working tool and equipment, hostile environment and many others.

Finally, mentally and physically demanding work and environmental stress were the most common forms of work-related fatigue, while regular work at night was the least. This is simply a reflection of the fact that ninety five percent of the staff of the university do day time work and only about less than five percent do night work, and these are the security staff.

The highest prevalent was among age group 36-45 while for gender, female experience psychosocial hazards more than the male workers. Psychosocial hazards were most prevalent among the single, those with low level education and Muslims. Psychosocial hazards were more experienced by the non-academic staff and the junior staffs were more exposed compared to the senior staff. Psychosocial hazards were also noticed to slightly decrease with increasing number of years in employment in the University.

Identified possible risk factors for psychosocial hazards among workers at the University of Port Harcourt: A number of risk factors were identified in the study as being capable of making a worker vulnerable to certain psychosocial hazards. They included work load as the most prevalent risk factor perceived by the respondents, followed by home-work interface, interpersonal relationship and job content while working alone at night was the least.

Identified possible solutions to reduce psychosocial hazards:

From the study, respondents identified Periodic in-service training (PIT) followed by Enlightenment of University workers (EUW) and then Introduction of occupational health and safety programmes in the university (IOHSP) as possible remedies among others that could be put in place by the University to tackle and reduce the prevalence and burden of psychosocial hazards in the University.

Recommendations

Base on the findings from this study, the following are therefore recommended to the University management as appropriate measures and steps that could be taken to reduce the occurrence and burdens of psychosocial hazards in the University workplaces. They include the following:

1. Organizing periodic in-service training (PIT) for staff of the University. Such training will focus on psychosocial hazards and occupational safety at workplaces.
2. Regular Enlightenment of University workers (EUW) and special orientation programmes is done for all newly employed staff.
3. Introduction of occupational health and safety programs into the educational curriculum of the University. This will also provide avenues to acquire knowledge of occupational safety and health for both teaching and non-teaching staff, particularly those who may wish to take up one academic programme or the other within the University.
4. Immediate establishment of an Occupational risk and hazard management/ Occupational rehabilitation centre.
5. The University should embark on periodic awareness-raising campaigns, and educational activities on prevailing occupational risk factors.
6. The University should develop a welfare policy or scheme and set up a staff welfare management team to direct cater for the welfare of the workers.
7. The employment and personnel Unit of the University should display utmost diligence and fairness in the selection and placement of workers.

Contributions to Knowledge

The findings from this research work will greatly contribute to the body of already existing knowledge in occupational health and safety. Before now, there has been dearth of knowledge and no data regarding the occurrence and prevalence of psychosocial hazards in this environment particularly in the University of Port Harcourt. With the findings from this study, both workers and staff, will not only have knowledge of what constitute psychosocial hazards and their adverse impact on health, but should equally be aware and better informed of the forms and shades in which workplace psychosocial hazards can present.

The study has equally provided knowledge to the workers of the fact that psychosocial hazards can cause variety of illnesses. The University Community and indeed, research bodies now have baseline data regarding the prevalence and pattern of psychosocial hazards among the workers. The management is now armed appropriately to address the issue.

Limitations of the Study

1. There have been very few studies on this subject in this

environment, as such; it was difficult to find studies with which to compare the findings in this study.

2. Inability to use a walk through survey guide during the walk through survey and the risk matrix in the assessment of risk factors may have undermined the quality of this research work.

References

1. Caulfield N, Chang D, Dollard MF, Elshaug C (2004) A review of occupational stress interventions in Australia. *Int J Stress Manag* 11: 149-166.
2. Dollard MF (2006) Throwaway workers. *In Psych* 28: 8-12.
3. Dollard MF, Knott V (2004) Incorporating psychosocial issues into our conceptual models of OHS. *J Occup Health Saf* 20: 345-358.
4. Polanyi M, Tompa E (2004) Rethinking work-health models for the new global economy: A qualitative analysis of emerging dimensions of work. *Work* 23: 3-18.
5. Stebbins P, Thatcher S, King R (Speakers) (2005) *Work Related Stress: HR, OH&S and Legal Strategy* (CD Recording). Brisbane: Psy Health Media.
6. Dollard MF, Walsh C (1999) Illusory correlation: Is work stress really worse in the public sector? *J Occup Health Saf* 15: 219-229.
7. Rydstedt LW, Ferrie J, Head J (2006) Is there support for curvilinear relationships between psychosocial work characteristics and mental well-being? Crosssectional and long-term data from the Whitehall II study. *Work Stress* 20: 6-20.
8. de Lange AH, Taris TW, Kompier MA, Houtman IL, Bongers PM (2003) The very best of the millennium: Longitudinal research and the demand-control-(support) model. *J Occup Health Psychol* 8: 282-305.
9. De Jonge, Dollard M (2002) *Stress in the workplace: Australian Master OHS and Environment Guide*, CCH.
10. Cunha RC (1999) Preventing stress, improving productivity: European case studies in the workplace. In: Kompier M, Cooper C editors. Routledge, New York, p: 345.
11. Beehr TA, Farmer SJ, Glazer S, Gudanowski DM, Nair VN (2003) The enigma of social support and occupational stress: source congruence and gender role effects. *J Occup Health Psychol* 8: 220-231.
12. Cheng SJ (1996) Migrant women domestic workers in Hong Kong, Singapore and Taiwan: a comparative analysis. *Asian Pac Migr J* 5: 139-152.
13. Rosenstock L, Cullen MR, Fingerhut MA (2006) Disease Control Priorities in Developing Countries. *J Occup Health* 4: 1127-1145.
14. Cox T, Griffiths A (2000) *Occupational Stress Interventions*. Sudbury: HSE Books.
15. Idris M, Dollard M, Winefield AH. (2010). Lay theory explanation of occupational stress: the Malaysian context. *Cross Cultural Management: An International Journal* 17: 135-153.
16. European Agency for Safety and Health at Work (2007) *Expert forecast on emerging psychosocial risks related to occupational safety and health*. EU-OSHA, Luxembourg: Office for Official Publications of the European Communities, Belgium.
17. Leka S, Cox T (2008) *The Future of Psychosocial Risk Management and the Promotion of Well-being at Work in the European Region: A PRIMA time for action*. In: Leka S, Cox T editors. *The European Framework for Psychosocial Risk Management* (1st edn.), Nottingham, pp: 174-184.
18. WHO (2011) *Final Report of the Commission on Social Determinants for Health*. Employment conditions knowledge network (EMCONET).
19. WHO (2010) *Healthy workplaces: a model for action*. For employers, workers, policy-makers and practitioners.
20. EU-OSHA (2009) *OSH in figures: Stress at work - facts and figures*. Luxembourg: Office for Official Publications of the European Communities.
21. EU-OSHA (2010) *European Survey of Enterprises on New and Emerging Risks - Managing safety and health at work (ESENER)*. Luxembourg: Office for Official Publications of the European Communities.
22. Melamed S, Yekutieli D, Fromm P, Kristal-Boneh E, Ribak J (1999) Adverse work and environmental conditions predict occupational injuries - The Israeli

- Cardiovascular Occupational Risk Factors Determination in Israel (CORDIS) study. *Am J Epidemiol* 150: 18-26.
23. Schrijvers CT, van de Mheen HD, Stronks K, Mackenbach JP (1998) Socioeconomic inequalities in health in the working population: The contribution of working conditions. *Int J Epidemiol* 27: 1011-1018.
24. Takala J (2002) Life and Health Are Fundamental Rights for Workers (Interview). *Labour Education* 1: 1-7.
25. Ettner SL, Grzywacz JG (2001) Workers' perceptions of how jobs affect health: A social ecological perspective. *J Occup Health Psychol* 6: 101-113.
26. Knott V, Elshaug C, Mellington T (2004) Psychological injury in the workplace: prevention and best-practice intervention. *Journal of Occupational Health and Safety, Australia and New Zealand* 20: 523.
27. Senol-Durak E, Durak M, Gençoz T (2006) Development of work stress scale for correctional officers. *J Occup Rehabil* 16: 157-168.
28. Kinman G and Jones F (2005) Lay representations of workplace stress: What do people really mean when they say they are stressed? *Work Stress* 19: 101-120.
29. Kennedy S (2004) Organisational change affects work stress and work-family balance. *Aust Nz J Fam Ther* 22: 105-106.
30. De Bruin GP, Taylor N (2005) Development of the sources of work stress inventory. *S Afr J Psychol* 35: 748-765.
31. CSDH (2008) Closing the Gap in a Generation: Health Equity through Action on the Social Determinants of Health (Final Report).
32. Giuffrida A, Lunes RF, Savedoff WD (2002) Occupational risks in Latina America and the Caribbean: Economic and health dimensions. *Health Policy Plan* 17: 235-246.
33. Ahasan MR (2001) Legacy of implementing industrial health and safety in developing countries. *J Physiol Anthropol Appl Human Sci* 20: 311-319.
34. Kamusora P (2006) Non-decision making in occupational health policies in developing countries. *Int J Occup Environ Health* 12: 65-71.
35. Aziz M (2003) Organizational role stress among Indian information technology professionals. *Asian-Pacific Newsletter on Occupational Health and Safety*.
36. Kjellstrom T, Rosenstock L (1990) The role of environmental and occupational hazards in the adult health transition. *World Health Stat Q* 43: 188-196.
37. Nuwayhid A (2004) Occupational health research in developing countries: A partner for social justice. *Am J Public Health* 94: 1996-1921.
38. WHO (2007) Global Plan of Action for Workers' Health 2008-2017. Geneva, Switzerland.
39. Cox T (1993) Stress research and stress management: Putting theory to work. Sudbury, England.
40. Warr PB (1992) Job features and excessive stress. In: Jenkins R, Coney N editors. *Prevention of Mental Ill Health at Work* (1stedn.), London: HMSO, pp: 201-205.
41. LaDou J (2003) International occupational health. *Int J Hyg Environ Health* 206: 1-11.
42. Takala J, Hamalainen P (2009) Globalization of risks. *African Newsletter on Occupational Health and Safety* 19: 70-73.
43. Awoyemi AO, Kabir M (1997) Awareness about Occupational Hazards among Doctors at a Hospital in Nigeria. *Biosci Res Commun* 9: 183-187.
44. Hart PM, Cooper CL (2001) Occupational stress: Toward a more integrated framework. In: Anderson N, Ones DS, Sinangil HK, Viswesvaran C editors. *Handbook of industrial, work and organisational psychology*, London: Sage, pp: 93-114.
45. Lewig KA, Dollard MF (2003) Emotional dissonance, emotional exhaustion and job satisfaction in call centre workers. *Eur J Work Organ Psychol* 12: 366-392.
46. Leka S, Griffiths A, Cox T (2003) Work Organisation and Stress: Systematic problem approaches for employers, managers and trade union representatives. *Protecting Worker Health Series*, Geneva: World Health Organization.
47. Marmot M, Wilkinson RG editors (2006). *Social Determinants of Health*. Oxford: Oxford University Press, (2nd edn.), Denmark.
48. Johnson J, Steward W, Hall E, Fredlund P, Theorell T (1996). Long-term psychosocial work environment and cardiovascular mortality among Swedish men. *Am J Public Health* 86: 324-331.
49. Sauter SL, Hurrell JJ, Murphy LR, Levi L (1998) Psychosocial and organizational factors. In: J.M. Stellman JM editor. *Encyclopaedia of Occupational Health and Safety* (4thedn.), Geneva: International Labour Organization.
50. Cox T, Griffiths A, Rial-González E (2000) Research on work related stress. European Agency for Safety & Health at Work. Luxembourg: Office for Official Publications of the European Communities.
51. Schaufeli WB, Greenglass ER (2001) Introduction to special issue on burnout and health. *Psychol Health* 16: 501-510.
52. Wright EO (1997) *Classes Count: Comparative Studies in Class Analysis*. Cambridge University Press, Cambridge, USA.
53. Wooding L, Levenstein C (1999) *The Point of Production: Work Environment in Advanced Industrial Societies*. Guilford Press, New York.
54. Rose D, O'Reilly K (1997) *Constructing Classes: Towards a New Social Classification for the UK*. Office of National Statistics, London.
55. Baxandall R, Gordon L (1995) *America's Working Women: A Documentary History, 1600 to the Present*, rev. and updated. Norton, New York.
56. Krieger N (2004) Embodiment: A conceptual glossary for epidemiology. *J Epidemiol Community Health* 59: 350-355.
57. Krieger N (2005) *Embodying Inequality: Epidemiologic Perspectives*. Baywood, Amityville, NY.
58. Krieger N (2001) Theories for social epidemiology in the 21st century: An Eco social perspective. *Int J Epidemiol* 30: 668-677.
59. Ehrenreich B (2002) *Nickel and Dimed: On (Not) Getting by in America*. Henry Holt, NY.
60. Yen IH, Ragland DR, Greiner BA, Fisher JM (1999) Racial discrimination and alcohol-related behavior in urban transit operators: Findings from the San Francisco muni health and safety study. *Public Health Rep* 114: 448-458.
61. Baker CN (2005) In the company of men: Male dominance and sexual harassment. In: JE Gruber, P Morgan editors. *Northeastern University Press*, Boston, pp: 242-270.
62. Quinn MM (2003) Occupational health, public health, worker health. *Am J Public Health* 93: 526.
63. Johnstone R, Quinlan M, McNamara M (2011) OHS inspectors and psychosocial risk factors: Evidence from Australia. *Safety Science* 49: 547-557.
64. Richman J, Rospenda K, Nawyn S, Flatherty J, Fendrich M, et al. (1999) Sexual harassment and generalised workplace abuse among university employees: Prevalence and mental health correlates. *Am J Pub Health* 89: 358-363.
65. Villalobos GH (2007) Determining the origins of diseases derived from stress-occupational or common- in Colombia: Recent developments. *WHO GOHNET Special Newsletter*.
66. WHO (2007) Authored by I Houtman A, Jettinghoff K, Cedillo L, Raising awareness of stress at work in developing countries: A modern hazard in a traditional working environment: Advice to employers and worker representatives. *Protecting Workers' Health Series* No. 6. Geneva: World Health Organization.
67. Roskam E (2002) Working at the check-in: Consequences for worker health and management practices. Lausanne: Université de Lausanne - Ecole des Hautes Etudes Commerciales.
68. Schneider KT, Swan S, Fitzgerald LF (1997) Job-related and psychological effects of sexual harassment in the workplace: Empirical evidence from two organisations. *J Appl Psychol* 82: 401-415.
69. Fitzgerald LF, Gelfand MJ, Drasgow F (1995) Measuring sexual harassment: Theoretical and psychometric advances. *Basic Appl Soc Psychol* 17: 425-445.
70. DeSouza ER, Solberg J (2003) Incidence and dimensions of sexual harassment across cultures. In *Academic and Workplace Sexual Harassment: A Handbook of Social Science, Legal, Cultural, and Management Perspectives*, ed. M. Paludi and C. Paludi, pp. 1-30. Praeger, Westport, CT.
71. WHO (2003) *Work Organization and Stress*. *Protecting Workers' Health Series*, No. 3. Geneva.
72. Park J, Lee N (2009) First Korean working national strategies for job stress

- management in Korea conditions survey: A comparison between South Korea and EU countries. *Ind Health* 47: 50-54.
73. Rosengren A, Hawken S, Ounpuu S, Sliwa K, Zubaid M, et al. (2004) Association of psychosocial risk factors with risk of acute myocardial infarction in 11 119 cases and 13 648 controls from 52 countries (the INTERHEART study): Case-control study. *The Lancet* 364: 953-962.
74. Siegrist J, Marmot M (2004) Health inequalities and the psychosocial environment-two scientific challenges. *Soc Sci Med* 58: 1463-1473.
75. Stansfeld S, Candy B (2006) Psychosocial work environment and mental health-A meta-analytic review. *Scand J Work Environ Health* 32: 443-462.
76. Wegman DH (2006) Aging and globalization. *Medicina del Lavoro* 97: 137-142.
77. WHO (2001) Mental Health in Europe. Regional Office for Europe, Copenhagen Denmark.
78. Prüss-Ustün A, Corvalan C (2006) WHO Preventing disease through health environments: Towards an estimate of the environmental burden of disease. Geneva, Switzerland.
79. Cox T, Mackay CJ (1981) A Transactional approach to occupational stress. In: EN Corlett, J Richardson (eds), *Stress, Work Design and Productivity*. Chichester: Wiley & Sons, USA.
80. Cox T, Griffiths A (2010) Work-related stress: A theoretical perspective. In: Leka S, Houdmont J editors. *Occupational Health Psychology* Chichester, UK: Wiley-Blackwell, pp: 31-56.
81. Cox T, Griffiths A, Rial-Gonzalez E (2000) Research on work related stress. Luxembourg: Office for official publications of the European Communities.
82. Cox T (1985) The nature and measurement of stress. *Ergonomics* 28: 1155-1163.
83. Cox T, Griffiths A (2006) The nature and measurement of work-related stress: Theory and practice. In: Wilson JR, Corlett N editors. *Evaluation of Human Work* (3rdedn.), CRS Press, London.
84. Cox T, Cox S (1993) Psychosocial and Organizational Hazards: Monitoring and control. Occasional series in occupational health, No.5. Copenhagen, Denmark: World Health Organization, Europe.
85. Leka S, Cox T (2008) Guidance on the European Framework for Psychosocial Risk Management: A resource for employers and worker representatives.
86. Karasek RA, Theorell T (1990) *Healthy Work, Stress, Productivity, and the Reconstruction of Working Life*. Basic Books, New York.
87. Siegrist J (1996) Adverse health effects of high-effort/lowreward conditions. *J Occup Health Psychol* 1: 27-41.
88. Elovainio M, Kivimäki M, Puttonen S, Lindholm H, Pohjonen T, et al. (2006) Organisational injustice and impaired cardiovascular regulation among female employees. *Occup Environ Med* 63: 141-144.
89. Peters ML, Godaert GLR, Ballieux RE, Brosschot JF, Sweep FCGJ, et al. (1999) Immune responses to experimental stress: Effects of mental effort and uncontrollability. *Psychosom Med* 61: 513-524.
90. Martins U, Schinke SP (1998) Organizational and individual factors influencing job satisfaction and burnout of mental health workers. *Soc Work Health Care* 28: 51-62.
91. Kouvonen A, Kivimäki M, Virtanen M, Heponiemi T, Elovainio M, et al. (2006) Effort-reward imbalance at work and the co-occurrence of lifestyle risk factors: Cross-sectional survey in a sample of 36,127 public sector employees. *BMC Public Health* 6: 24.
92. Kivimäki M, Virtanen M, Elovainio M, Kouvonen A, Vaananen A, et al. (2006) Work stress in the aetiology of coronary heart disease-A meta-analysis. *Scand J Work Environ Health* 32: 431-442.
93. Benach J, Muntaner C, Santana V (2007) Employment conditions and health inequalities. Employment conditions knowledge network. Final Report of WHO Commission on Social Determinants of Health.
94. Tabanelli MC, Depolo M, Cooke RMT, Sarchielli G, Bonfiglioli R, et al. (2008) Available instruments for measurement of psychosocial factors in the work environment. *Int Arch Occup Environ Health* 82: 1-12.
95. European Parliament (2006) New forms of physical and psychological health risks at work policy department, economic and scientific policy-Study IP/A/EMPL/FWC/2006-2005/C1-SC1.
96. Chandola T, Jenkinson C (2000) The new UK statistics Socio-economic Classification (NS-SEC): Investigating social class differences in self-reported health status. *J Public Health Med* 22: 182-190.
97. Dollard MF, Karasek RA (2010) Building psychosocial safety climate: Evaluation of a socially coordinated PAR risk management stress prevention study. In: Houdmont J, Leka S editors. *Contemporary Occupational Health Psychology: Global Perspectives on Research and Practice* pp: 208-234, Wiley Blackwell, Chichester, UK.
98. Ortega A, Hogh A, Pejtersen JH, Feveile H, Olsen O (2009) Prevalence of workplace bullying and risk groups: A representative population study. *Int Arch Occup Environ Health* 82: 417-426.
99. Hoel H, Sparks K, Cooper CL (2001) The Cost of Violence/Stress At Work and the Benefits of a Violence/Stress-Free Working Environment. Report commissioned by the International Labour Organization, University of Manchester.
100. Kortum E (2007) Work-related stress and psychosocial risks: Trends in developing and newly industrialized countries. *Glob Occup Med Environ Health, Network Newsletter*.
101. Levi L (1984) Stress in the industry: causes, effects and prevention. International Labor Office.
102. Bonde JP (2008) Psychosocial factors at work and risk of depression: A systematic review of the epidemiological evidence. *Occup Environ Med* 65: 438-445.
103. Bosma H, Peter R, Siegrist J, Marmot M (1998) Two alternative job stress models and the risk of coronary heart disease. *Am J Public Health* 88: 68-74.
104. Chen WQ, Yu ITS, Wong TW (2005) Impact of occupational stress and other psychosocial factors on musculoskeletal pain among Chinese offshore oil installation workers. *Occup Environ Med* 62: 251-256.
105. Fischer FM, Oliveira DC, Nagai R, Teixeira LR, Júnior ML, et al. (2005) Job control, job demands, social support at work and health among adolescent workers. *Health Magazine* 39: 245-253.
106. Wieclaw J, Agerbo E, Mortensen PB, Burr H, Tuchsén F, et al. (2008) Psychosocial working conditions and the risk of depression and anxiety disorders in the Danish workforce. *BMC Public Health* 8: 280.
107. Spurgeon A, Harrington JM, Cooper CL (1997) Health and safety problems associated with long working hours: A review of the current position. *Occup Environ Med* 54: 367-375.
108. Vahtera J, Pentti J, Kivimäki M (2004) Sickness absence as a predictor of mortality among male and female employees. *J Epidemiol Community Health* 58: 321-326.
109. van den Berg TIJ, Elders LAM, de Zwart BCH, Burdorf A (2009) The effects of work related and individual factors on the Work Ability Index: A systematic review. *Occup Environ Med* 66: 211-220.
110. Jones JR, Hodgson JT, Clegg TA, Elliot RC (1999) Self-reported Work-related Illness in 1995: Results from a household survey.
111. Schnall P, Belkic K, Landsbergis PA, Baker D (2000) Why the workplace and cardiovascular disease? *Occupational medicine* (Philadelphia, Pa.) 15: 1-6.
112. Flannery R (1996) Violence in the workplace, 1970-1995: A review of the literature. *Aggress Violent Behav* 1: 57-68.
113. Raphael B (1991) Psychiatric aspects of preventative intervention with victims of violence. In: Chappell D, Grabosky P, Strang H editors. *Australian Violence: Contemporary Perspectives*. Canberra: Australian Institute of Criminology.
114. Rippon T (2000) Aggression and violence in health care professions. *J Adv Nurs* 31: 452-460.
115. NIOSH N (2002) The changing organization of work and the safety and health of working people: Knowledge gaps and research directions. NIOSH 116.
116. Ephraim A (2009) Putting occupational health on the political agenda in Nigeria.
117. Joubert DM (2002) Occupational health challenges and success in developing countries: A South African perspective. *Int J Occup Environ Health* 8: 119-124.
118. Muchiri FK (2003) Occupational health and development in Africa: Challenges and the way forward. *African Newsletter on Occupational Health and Safety* 13: 44-46.

119. Rantanen J, Lehtinen S, Savolainen K (2004) The opportunities and obstacles to collaboration between the developing and developed countries in the field of occupational health. *Toxicology* 198: 63-74.
120. Ottawa Charter for Health Promotion (1986) First international conference on health promotion.
121. Dollard MF, Winefield AH (2002) Mental health: overemployment, underemployment, unemployment and healthy jobs. *Aust E J Adv Mental Health* 1: 170-195.
122. Holkeri H (2001) Globalization and its effects on occupational health and safety. *Asian-Pacific Newsletter on Occupational Health and Safety* 8: 51.
123. Voyi K (2006) Is globalisation outpacing ethics and social responsibility in occupational health? *La Medicina del lavoro* 97: 376-382.
124. Duxbury L, Higgins C (2001) Work-life balance in the New Millennium: Where are we? Where do we need to go? CPRM Discussion paper.
125. Karasek R, Baker D, Marxer F, Ahlbom A, Theorell T (1981) Job decision latitude, job demands, and cardiovascular disease: A prospective study of Swedish men. *Am J Public Health* 71: 694-705.
126. Marmot M, Davey SG, Stansfeld S, Patel C, North F, et al. (1991) Health inequalities among British civil servants: The Whitehall II Study. *The Lancet* 337: 1387-1393.
127. Schrijvers C, van de Mheen D, Stronks K, Mackenbach J (1998) Socioeconomic inequalities in health in the working population: The contribution of working conditions. *Int J Epidemiol* 27: 1011-1018.
128. Wang J, Lesage A, Schmitz N, Drapeau A (2008) The relationship between work stress and mental disorders in men and women: Findings from a population-based study. *J Epidemiol Community Health* 62: 42-47.
129. Bin Nordin R, Bin Abidin E, Naing L (2008) Working conditions, self-perceived stress, anxiety, depression and quality of life: A structural equation modelling approach. *BMC Public Health* 8: 48.
130. Bosma H, Marmot M, Hemingway H, Nicholson A, Brunner E, et al. (1997) Low job control and risk of coronary heart disease in Whitehall II (prospective cohort) study. *Br Med J* 314: 558-565.
131. Kuper H, Singh-Manoux A, Siegrist J, Marmot M (2002) When reciprocity fails: effort-reward imbalance in relation to coronary heart disease and health functioning within the Whitehall II study. *Occup Environ Med* 59: 777-784.
132. Bunker SJ, Colquhoun DM, Esler MD, Hickie IB, Hunt D, et al. (2003) Stress and coronary heart disease: Psychosocial risk factors. *Med J Aust* 178: 272-276.
133. Greenlund K, Liu K, Knox S, McCreath H, Dyer A, et al. (1995) Psychosocial work characteristics and cardiovascular disease risk factors in young adults: The cardia case. *Soc Sci Med* 41: 717-723.
134. László KD, Ahnve S, Hallqvist J, Ahlbom A, Janszky I (2010) Job strain predicts recurrent events after a first acute myocardial infarction: The Stockholm Heart Epidemiology Program. *J Intern Med* 267: 599-611.
135. Cooper CL, Cartwright S (1994) Healthy mind: Healthy organizations—a proactive approach to occupational stress. *Human Relations* 47: 455-471.
136. Vissoci Riche EM, Vargas Nunes SO, Kaminami Morimoto H (2004) Stress, depression, the immune system, and cancer. *Lancet Oncol* 5: 617-625.
137. Bongers PM, Ijmker S, van den Heuvel S, Blatter BM (2006) Epidemiology of work related neck and upper limb problems: Psychosocial and personal risk factors (Part I) and effective interventions from a bio behavioural perspective (Part II). *J Occup Rehabil* 16: 29-302.
138. Ishizaki M, Nakagawa H, Morikawa Y, Honda R, Yamada Y, et al. (2008) Japan Work Stress and Health Cohort Study Group. Influence of job strain on changes in body mass index and waist circumference 6-year longitudinal study. *Scand J Work Environ Health* 34: 288-296.
139. Kivimäki M, Vahtera J, Virtanen M, Elovainio M, Pentti J, et al. (2003) Temporary employment and risk of overall and cause specific mortality. *Am J Epidemiol* 158: 663-668.
140. Rosengren A, Hawken S, Ounpuu O, Sliwa K, Zubaid M, et al. (2004) Association of psychosocial risk factors with risk of acute myocardial infarction in 11119 cases and 13648 controls from 52 countries (the INTERHEART study): Case control study. *Lancet* 364: 953-962.
141. Li J, Angerer P (2014) Work-family conflict and worker wellbeing in china. In *Psychosocial factors at work in the Asia Pacific*. Springer pp: 309-321.
142. Hauge LJ, Skogstad A, Einarsen, S (2007) Relationships between stressful work environments and bullying: Results of a large representative study. *Work and Stress* 21: 220-242.
143. Tennant C (2001) Work-related stress and depressive disorders. *J Psychosom Res* 51: 697-704.
144. Ferrie JE, Westerlund H, Oxenstierna G, Theorell T (2007) The impact of moderate and major workplace expansion and downsizing on the psychosocial and physical work environment and income in Sweden. *Scand J Public Health* 35: 62-69.
145. Theorell T, Oxenstierna G, Westerlund H, Ferrie J, Hagberg J, et al. (2003) Downsizing of staff is associated with lowered medically certified sick leave in female employees. *Occup Environ Med* 60.
146. Ferrie JE, Shipley MJ, Marmot M G, Stansfeld SA, Davey Smith G (1998) An uncertain future: The health effect threats of employment security in white-collar men and women. *Am J Public Health* 88: 1030-6.
147. Metcalfe C, Davey Smith G, Sterne JA, Heslop P, Macleod J, et al. (2003) Frequent job change and associated health. *Soc Sci Med* 41: 210-6.
148. Ostry AS, Spiegel JM (2004) Labor markets and employment security: Impacts of globalization on service and healthcare-sector workforces. *Int J Occup Environ Health* 10: 368-74.
149. Pollard TM (2001) Changes in mental well-being, blood pressure and total cholesterol levels during workplace reorganization: The impact of uncertainty. *Work and Stress* 15: 14-28.
150. Virtanen M, Kivimäki M, Joensuu M, Virtanen P, Elovainio M, et al. (2005) Temporary employment and health: A review. *Int J Epidemiol* 34: 610-22.
151. Goldenhar LM, Swanson N, Hurrell JJ, Ruder A, Deddens J (1998) Stressors and adverse outcomes for female construction workers. *J Occup Health Psychol* 3: 19-32.
152. Dooley D, Rook K, Catalano RD (1987) Job and non job stressors and their moderators. *J Occup Psychol* 60: 115-32.
153. Haratani T, Kawakami N (1999) Organization of work in a global economy. Presented at the Work, Stress and Health Conference, March 11-13. Baltimore, USA.
154. Park J (2005) National Strategies for Job stress management in Korea. Paper presented at the Second ICOH international conference on psychosocial factors at work: Job stress prevention in a global perspective. Okayama, Japan.
155. Belkic K, Landisbergis PA, Schnall PL, Baker D (2004) Is job strain a major source of cardiovascular disease risk? *Scand J Work Environ Health* 30: 85-128.
156. Heuchert G, Hort A, Kuhn K (2001) Work-related illnesses, problems and interventions. *Bundesarbeitsblatt* 2/2001 (in German).
157. Kivimäki M, Virtanen M, Elovainio M, Kouvonen A, Väänänen A, et al. (2006) Work stress in the etiology of coronary heart disease—a meta-analysis. *Scand J Work Environ Health* 32: 431-442.
158. Eller NH, Netterstgrom B, Gyntelberg F, Kristensen TS, Nilsen F, et al. (2009) Work-related psychosocial factors and the development of ischemic heart disease: A systematic review. *Cardiol Rev* 17: 83-97.
159. Iacovides A, Fountoulakis KN, Kaprinis S, Kaprinis G (2003) The relationship between job stress, burnout and clinical depression. *J Affect Disord* 75: 209-221.
160. Kawakami N, Haratani T (1999) Epidemiology of job stress and health in Japan: Review of current evidence and future direction. *Ind Health* 37: 174-186.
161. Murray CJL, Lopez AD (1996) The global burden of disease: A comprehensive assessment of mortality and disability from diseases, injuries and risk factors in 1990 and projected to 2020. WHO Global Burden of Disease and Injury Series Vol. I. Cambridge: Harvard School of Public Health.
162. Kondo N, Juhwan O (2010) Suicide and karoshi (death from overwork) during the recent economic crises in Japan: The impacts, mechanisms and political responses. *J Epidemiol Community Health* 64: 649-650.
163. European Social Partners (2004) Framework agreement on work-related

- stress. Brussels: European Social Partners-ETUC, BUSINESSEUROPE, UEAPME and CEEP.
164. European Social Partners (2007) Framework agreement on harassment and violence at work. Brussels: European Social Partners-ETUC, BUSINESSEUROPE, UEAPME and CEEP.
165. Cohen S, Willis TA (1985) Stress, social support and the buffering hypothesis. *Psychological Bulletin* 98: 310-357.
166. Hauge LJ, Skogstad A, Einarsen S (2007) Relationships between stressful work environments and bullying: Results of a large representative study. *Work and Stress* 21: 220-242.
167. Leaker D (2008) Sickness absence from work in the UK. *Economic & Labour Market Review*.
168. Dewa CS, McDaid D, Ettner SL (2007) An international perspective on worker mental health problems: who bears the burden and how are costs addressed? *Can J Psychiatry* 52: 346-356.
169. Rosch PJ (2000) Job Stress. Retrieved on from <http://www.stress.org/job.htm>.
170. Lehtinen V, Riikonen E, Lahtinen E (1997) Promotion of mental health on the European agenda. Finland: National Research and Development Centre for Welfare and Health.
171. Levi L (2002) More jobs, better jobs, and health. In: Dollard MF, Winefield AH, Winefield HR editors. *Occupational stress in the service professions*. Taylor & Francis, London, pp: 7-10.
172. Kang SY, Staniford A, Dollard MF, Kompier M (2008) Knowledge development and content in occupational health psychology: A systematic analysis of the *Journal of Occupational Health Psychology*, and *Work & Stress*, 1996-2006. In: Houdmont J, McIntyre S editors. *Occupational Health Psychology: European perspectives on research education and practice*. Maia, Portugal: ISMAI Publishers, pp: 27-62.
173. Hillier D, Fewell F, Cann W, Shephard V (2005) Wellness at work: Enhancing the quality of our working lives. *Int Rev Psychiatry* 17: 419-431.
174. Marmot M (2007) Achieving health equity: From root causes to fair outcomes. Commission on Social Determinants of Health. Geneva: World Health Organization.
175. Leka S, Jain A, Iavicoli S, Ertel M (2011) The role of policy for the management of psychosocial risks at the workplace in the European Union. *Safety Science* 49: 558-564.
176. World Health Organization (1995) Global Strategy on occupational health for all: The Way to health at work. Recommendations of the Second Meeting of the WHO Collaborating Centres in Occupational Health. Beijing, China. 11-14 October 1994. WHO, Geneva, Switzerland.
177. Stewart WF, Ricci JA, Leotta C (2004) Health-related lost productive time (LPT): Recall interval and bias in LPT estimates. *J Occup Environ Med* 46: S12-S22.
178. Einarsen S, Raknes BI, Matthiesen SM (1994) Bullying and harassment at work and their relationships to work environment quality - an exploratory study. *European Work and Organizational Psychologist* 4: 381-401.
179. Premji S (2011) Building healthy and equitable workplaces for women and men: A resource for employers and workers representatives. *Protecting Workers' Health* series no. 11. World Health Organization, Geneva.
180. Heymann J (2006) *Forgotten Families: Ending the growing crisis confronting children and working parents in the global economy*. Oxford University Press, New York.
181. Nilvarangkul K, Wongprom J, Tumnong C, Supompun A, Surit P, et al. (2006) Strengthening the self-care of women working in the informal sector: Local fabric weaving in Khon Kaen, Thailand (Phase I). *Indian Health* 44: 101-107.
182. Borritz M, Rugulies R, Bjorner JB, Villadsen E, Mikkelsen OA, et al. (2006) Burnout among employees in human service work: Design and baseline findings of the PUMA study. *Scand J Public Health* 34: 49-58.
183. Rospenda K (2002) Workplace harassment, services utilization, and drinking outcomes. *J Occup Health Psychol* 7: 141-155.
184. Sadock VJ, Sadock VA, Pedro R (2007) Kaplan and Sadock's Synopsis of Psychiatry.
185. Smith A, Johal S, Wadsworth E, Smith G, Peters T (2000) The scale of occupational stress: The Bristol stress and health at work study. Health & Safety Executive research report no. CRR 265. HSE Books, Sudbury.
186. Melchior M, Caspi A, Milne BJ, Danese A, Poulton R, et al. (2007) Work stress precipitates depression and anxiety in young, working women and men. *Psychol Med* 37: 1119-1129.
187. Quinlan M, Mayhew C, Bohle P (2001) The global expansion of precarious employment, work disorganization, and consequences for occupational health: A review of recent research. *Int J Health Serv* 31: 335-414.
188. Standing H, Nicolini D (1997) Review of work-related violence. Health & Safety Executive Contract Research Report 143/1997. HSE Books, Sudbury.
189. Leather P, Lawrence C, Beale D, Cox T, Dickson R (1998) Exposure to occupational violence and the buffering effects of intra-organizational support. *Work & Stress* 12: 161-178.
190. Beale D, Clarke D, Cox T, Leather P, Lawrence C (1999) System memory in violent incidents: Evidence from patterns of reoccurrence. *Journal of Occupational Health Psychology* 4: 233-244.
191. Chappell D, Di Martino V (2000) Violence at Work. International Labour Organization.
192. Vecchio RP (1995) It's not easy being green: Jealousy and envy in the workplace. *Research in Personnel & Human Resources Management* 13: 201-244.
193. Ekore JO (2007) Policy on Psychosocial hazards contributing to work-related stress: Awareness and implementation in Nigeria. WHO GOHNET Special Newsletter.
194. Loewenson RH (1999) Women's Occupational Health in Globalization and Development. *Am J Ind Med* 36: 34-42.
195. Barling J, Dekker I, Loughlin C, Kelloway E, Fullagar C, et al. (1996) Prediction and replication of the organizational and personal consequences of workplace sexual harassment. *J Manage Psychol* 11: 4-25.
196. Paludi M, Paludi C (2003) *Academic and Workplace Sexual Harassment: A Handbook of Social Science, Legal, Cultural, and Management Perspectives*. Praeger, Westport, CT.
197. Smyre P (1992) Women and health. Women and World Development Series. Retrieved from [http://www.ilo.org/public/libdoc/ilo/P/09708\(2000-118-119\)37-49.pdf](http://www.ilo.org/public/libdoc/ilo/P/09708(2000-118-119)37-49.pdf).
198. Fuentes A, Ehrenreich B (1994) *Women in the Global Factory*. Boston MA: South End Press.
199. Glick P (2006) Export Processing Zone expansion in Madagascar: What are the labour market and gender impacts. SAGA working paper.
200. Demerouti E, Bakker AB, Bulters A (2004) The loss spiral of work pressure, work-home interference and exhaustion: Reciprocal relations in a three-wave study. *J Vocat Behav* 64: 131-149.
201. Eby LT, Casper WJ, Lockwood A, Bordeaux C, Brinley A (2005) Work and family research in IO/OB: Content analysis and review of the literature (1980-2002). *Journal of Vocational Behaviour* 66: 124-197.
202. Figley CR (1985) *Trauma and Its Wake: The Study of Treatment of Post-Traumatic Stress Disorder*. Brunner/Mazel, New York, USA.
203. French JRP, Rogers W, Cobb S (1974) A model of person-environment fit. In: Coehlo GW, Hamburg DA, Adams JE editors. *Coping and Adaptation*. New York: Basic Books.
204. Bakan AB, Stasiulis DK (1995) Making the match: Domestic placement agencies and the racialization of women's household work. *Signs: Journal of Women in Culture and Society* 20: 303-335.
205. Kahn RL, Byosiere P, Dunnette MD (1992) Stress in organizations. In: LM Hough editor. *Handbook of industrial and organizational psychology*. Consulting Psychologists Press, Palo Alto, CA, pp: 571-650.
206. D'Amato A, Zijlstra FRH (2003) Occupational stress: A review of the literature relating to mental health.
207. Levi L (2000) Spice of life or kiss of death. In *Working on Stress*, Magazine of the European Agency of Safety and Health at Work No.5. Luxembourg: Office for Official Publications of the European Communities.
208. Goetzel RZ, Ozminkowski RJ, Sederer LI, Mark TL (2002) The business case

- for quality mental health services: why employers should care about the mental health and well-being of their employees. *J Occup Environ Med* 44: 320-330.
209. Dewa C, Lesage A, Goering P, Caveen M (2004) Nature and prevalence of mental illness in the workplace. *Healthc Pap* 5: 12-25.
210. Parent-Thirion A, Macias E, Hurley J, Vermeylen Greet G (2007) Fourth European Working Conditions Survey. European Foundation for the Improvement of Living and Working Conditions. Luxembourg: Office for Official Publications of the European Communities.
211. Chatterjee DS (1987) Repetitive strain injury-a recent review. *Occup Med* 37: 100-105.
212. Chatterjee DS (1992) Workplace upper limb disorders: A prospective study with intervention. *Occup Med* 42: 129-136.
213. Akerstedt T (1985) Adjustment of the physiological circadian rhythms and the sleep-wake cycle to shiftwork. In: Folkard S, Monk T editors. *Hours of Work: Temporal Factors in Work Scheduling*. Oxford: John Wiley & Sons, UK.
214. Akerstedt T (1988) Sleepiness as a consequence of shift work. *Sleep* 11: 17-34.
215. Akerstedt T (1995) Work hours, sleepiness and the underlying mechanisms. *J Sleep Res* 4: 15-22.
216. Rydstedt LW, Johansson G, Evans GW (1998) A longitudinal study of workload, health and well-being among male and female urban bus drivers. *J Occup Organ Psychol* 71: 35-45.
217. Sprigg CA, Smith PR, Jackson PR (2003) Psychosocial risk factors in call centres: An evaluation of work design and well-being. HSE Books, UK.
218. Concha-Barrientos M, Imel Nelson D, Driscoll T, Steenland NK, Punnett L, et al. (2004) Selected occupational risk factors. In: Ezzati M, Lopez AD, Rodgers A, Murray CJL editors. *Comparative quantification of health risks: Global and regional burden of diseases attributable to selected major risk factors*. Geneva, Switzerland, pp.1651-1801.
219. Comcare (2006) What is 'stress' and what is 'psychological injury'? Retrieved 19 February, 2015, from http://www.comcare.gov.au/stress_and_psychological_injury_information_portal/what_is
220. Stillwell B (2001) Health worker motivation in Zimbabwe. Internal report for the Department of Organization and Healthcare Delivery. World Health Organization, Geneva.
221. Messing K (1998) *One Eyed Science: Occupational Health and Women Workers*. Temple University Press, Philadelphia, Pennsylvania, US.
222. Zahm SH (2000) Women at work. In: Goldman MB, Hatch MC editors. *Women and Health*. Academic Press, San Diego, CA.
223. Szabo S, Maull EA, Pirie J (1983) Occupational stress: Understanding, recognition and prevention. *Experientia* 39: 1057-1180.
224. Stebbins P (2008) *Work-related stress injury: Psychological assessment, treatment and rehabilitation*. Pearson Education Australia, New South Wales, pp: 104-110.