THE INFLUENCE OF STRESS ON THE HEALTH OF WORKERS IN MANUFACTURING INDUSTRY

Abdul Wahab Aidoo

International University of Sarajevo

ABSTRACT

The frequent occurrence of stress and job-related-stress in recent times on workers at workplaces has become a trend of worry to: employers, management, employees, organizations, and society as a whole. Stress has a tremendous effect on job satisfaction, production, and workers' motivation. In this regard, the study methodology of this literature review focused on secondary sources of data. In-depth secondary sources of data was gathered to review trends of both past and current literatures and to elicit conclusion and recommendations for future studies. The sources of secondary data include; books, publications on internet, peer-reviewed journal articles, and etc. Furthermore, this research work shows that the presence of this phenomenon among workers has enormous influence on their job efficiency and effectiveness in the workplace. This study concludes that the frequent incident of intense stress on individuals conveys a sequence of disturbing and negative physiological and health consequences. Underlying effect is a reduction in the job performance due to illness, injury, absenteeism, quality control cost, turnover cost, and violence.

Keywords: Stress, Job Performance, Stress Consequence, Physiological and Health Problems.

1. INTRODUCTION

The frequent occurrence of stress and job-related-stress in recent times on workers at workplaces has become a trend of worry to: employers, management, employees, organizations, and society as a whole. Stress has a tremendous effect on job satisfaction, production, and workers' motivation. This prevailing phenomena at the workplace has made it inevitable for academicians, scholars, and researchers to investigate into its causes and probable consequences in order to offer significant recommendations as to how it can be managed, if not eradicated, to a sufficient minimum (Mettlin & Woelfel, 1974). Researchers are of much concerned about the behavior of employers and managers in relation to the stress that workers undergo in their execution of their job (Pettergrew, Thomas, Ford,

& Raney, 1981).

The prevalent reportage of stress and its related problems at workplaces pose a scaring image for managers, supervisors, organizations and society as a whole. It is essential to handle the concept of job-stress not in a narrow perspective. However, it should be looked at in a broader environment, to encompass the cause and effect job related stress on the personality, the environment, and the working-family communication (Dar, Akmal, Naseem, & Khan, 2011). According to Selye (1936) stress is involve in all the life of science. He explained that “stress is not necessary something bad – it all depends on how you take it. The stress of exhilarating, creative successful work is beneficial, while that of failure, humiliation or infection is detrimental”. That is, stress is where an individual exert tremendous effort to resist factors such as: pressure, force, and strain from changing his current state or condition.

Workers job performance at the workplace can be explained as the judicious utilization of scarce resources (available to the worker) to successfully execute a task within a stipulated period of time. There is a relationship between job-stress and job-performance, and they are: 1.) stress causes production to fall, which means negative linear relationship, 2.) positive linear relationship, where stress causes production to rise, and 3.) U-shaped relationship, where job stress causes production to rise initially, attain its peak, then begins to fall (Dar, et. al., 2011).

This study concludes that the frequent incident of intense stress on individuals conveys a sequence of disturbing and negative physiological and health consequences. Underlying effect is a reduction in the job performance due to illness, injury, absenteeism, quality control cost, turnover cost, and violence. Evidence of these negative aftermaths is very alarming if management fails to recognize and institute necessary measures and policies to prevent the factors that create this canker.

2. LITERATURE REVIEW

One can assume that no individual at the workplace is exonerated from stress, this is due the varying factors that trigger its occurrence. Every worker feels some form of strain and depressed in the discharge of his/ her duties. Stress and its related consequences have been in organizations and society for decades. A worker perceives stress when the job on him/ her is over burden (Hunter & Thatcher, 2007). If the causative factor of this strain is very enormous, it will results in a severe consequence such as: psychological, physiological, physical, and mental disorder to the individual under stress (Health & Safety, 2001).

Job stress can be defined as a unique organizational task that has the tendency to expose the worker to workplace hazards. This is usually

evidence when the cordial relation between the worker and the working surrounding is distorted. The unique task has been conceptualize into psychiatric categories, and they include (Ilfeld, 1976):

State of depression. That is to feel lonely, dejected, and less energetic.

State of rage. Feeling angry, regular loss of temper, chastising others, feeling irritated, acting violence, and making argument over less significant matters.

State of anxiety. Exhibiting fear over trivial issues, regular upset, frequent stomach sour, and feeling dizzy.

Psychological disturbance. Having troubles in recollecting things, lack of concentration, and the mind becoming blank.

It has been recognized that the job stress pose a severe damage to the health of the individual stressor (Mimura & Griffiths, 2003). The concept of job stress has become a bane for employers and managers due to its related dire effects on workers.

A high level of stress has the propensity to cause low production, job dissatisfaction, frequent truancy, and health challenges such as: drug abuse, alcoholism, hypertension, and cardiovascular related problems (Michie & Williams, 2003). An exposure to stress over a long period of time can render problems in the area of: behaviour, physical health, and psychological to the individual (Kazi & Haslam, 2013).

3. METHODOLOGY

A detailed literature review of secondary sources of data was performed to assess trends, draw conclusions. The data (from books, journal articles, and etc.) was analyzed to elicit conclusion and offer recommendations for future studies. Review of secondary sources of data was performed, thus, qualitative method of study was employed. Keywords were used as a form of a bait to look for secondary data from journals. The keywords include: stress, job performance, stress consequence, physiological and health problems. The study allocated 35 peer-review articles journal articles to use for the research. From these, 28 were posed importance to the review understudy, which represent 80%. However, the rest of the 7 articles representing 20% were excluded due to the reason that they have no immense relevance to the study under review. A total of 4 academic books and 2 theses were used as a source of data significant to the study.

The data collected were analysed through the descriptive method of data analysis and interpreted to achieve the purpose of the study.

4. DISCUSSIONS

a. Stress Defined

According to the works of Selye (1976) stress on human is explained as “the nonspecific response of the body to any demand”. There are numerous factors that causes the human body and physiology to react in an unspecific manner. Under this study the factors that causes stress at the workplace has been categorized into four, namely:

- Environment
- Job-demand
- Structure of organization
- Family-work conflict

i. Environmental Factor

The physical surroundings at the workplace cannot be overlooked as a variable that instigate stress on the workers (Vagg & Spielberger, 1998). Variables in the workplace such as: extreme level of noise, concentration of workers, and excessive temperature have high tendency of causing stress to workers. Haphazard placement of electronic cables and wires at the workplace surroundings can contribute to workers stress. Researchers have identified that spacious workplace environment where the distance from among workers are far apart reduces inter-personal communication, resulting in stress among the workers (Berry, 1998; William & Cooper, 1988; Szilagyi & Holland, 1980).

ii. Job-demand Factor

Firms practice division of labor, where each worker or group of workers are given a specific task to execute, to achieve the set goals and mission. In situations where the tasks that are demanded from labor are in contradictory and ambiguous with each other, it can cause frustration and hence, stress among the workers (Beehr, Jex, Stacy, & Murray, 2000; Smither, 1998). Role and task which have characteristics features of contradiction and ambiguity brings about tension, fatigue, truancy, non-feedback behavior, and psychological strain among workers (Decker & Borgen, 1993; Huensberg, Vedhara, Nott, & Bradbeer 1998; Breugh, 1980).

iii. Structure of Organization

It is significant to point out that researchers have recognized a seeming relationship between the position held by workers and the occurrence of labor stress at the workplace environment. The extensive research study on stress, undertaken by Ivancevich, Matteson, Freed-

man, and Phillips (1990) were concentrated on five characteristics of stress within the levels of management in an organizational structure, and they include:

- Excessive quantitative job load.
- Excessive qualitative job load.
- Less progress in career.
- Relations with supervisor.
- Task contradiction.
- Time constraint (Parasuraman & Aluto, 1981).

Table 1: Review of Empirical Studies on the Concept of Stress

Study	Research Design	Theory
Dar, Akmal, Naseem, & Khan (2011)	143 managers, professors, lecturers, supervisors, and workers, structured questionnaire, cross-sectional.	nature and position of job
Fink & Schaubroeck, (1998)	214 employees, structured questionnaire, cross-sectional	support and control in relation to job performance
Kazi & Haslam (2013)	Phase 1 study, employee survey; Phase 2 study, focus groups, structured questionnaire; 304 survey, self-report questionnaire, cross-sectional	health and job attitudes
Pettergrew, Thomas, Ford, & Raney (1981)	518 employees at medical centre, structured questionnaire, cross-sectional	communication is situational influenced
Neff & Karney (2007)	169 couples, telephone interview	stress spill over, intrapersonal effect
Beehr, Jex, Stacy, & Murray (2000)	198 university students, structured questionnaire, cross-sectional	occupation specific, occupational stressors
Netemeyer, Maxham, & Pullig (2005)	452 employees in organizations, electronic interview,	job stress and performance
Dubinsky, Michaels, Kotabe, Lim & Moon (1992)	594 sales personnel, electronic interview	robust and consistence role stress model, conflict and ambiguity effect
Kelloway, Barling, & Shah (1993)	229 industrial employees, structured questionnaire, cross-sectional	negative and positive mood correlates with job satisfaction
Nygaard & Dahlstrom (2002)	218 retail managers, electronic interview	conflict impacts on ambiguity to sales, conflict directly relates to specific investment

Source: Researcher's study of secondary data, 2016

The category of workers at the lower level departments (or functions) has technical challenges and frustrations as their main cause of stress at the workplace (Yost, 2002).

iv. Family-Work Factor

Issues like: misunderstanding, disagreement, or conflict among family members is a major cause for alarm for members of organizations. Family conflict disrupts the tranquillity of work, which causes tension and stress to the worker (Netemeyer, Maxham, & Pullig, 2005). Work-life balance has been a bane for many workers especially those in high level management. According to the study by Bartolome and Evans (1979) from a total of 532 middle-aged managers 80% assign equal importance to job career and family, however, they spent ample time on their career. Over 50% of reported their discontent with the amount of time allocated for family and leisure life. Coincidentally, the dissatisfied sample of workers showed more high level of stress at workplace.

b. Stress in the Manufacturing Industry

A research study conducted in Canada, with a sample size of 3,500 workplaces showed that, 50% of firms are wary of workers exposed to extreme temperatures, stuffy atmosphere, injuries, and strain. While 33% are worried about excessive noise, poor spacing, lack of lighting, explosion, straining of eyes, hazardous chemicals, exposed machinery, and lack of preventive training (Mazerall, 2002).

Workers in the manufacturing industry are exposed to frequent and divert forms of stressor, and they include (Mazerall, 2002):

- Extreme noise.
- Less amount of lighting.
- Stuffy atmosphere.
- High temperatures.
- Mechanical (physical) menace.

i. Extreme Noise

Workers exposure to severe noise above their physiological threshold limit results in stress. Extreme noise can cause minor itching and complete loss of hearing (Lusk, 1997). For instance, a survey conducted by the human resources development Canada (HRDC) in 1998, revealed that 1,101 workers who have been exposed to extreme noise are battling with hearing loss. These noises are usually produced by machines, tools, and equipment that are used in the production process (Mazerall, 2002).

ii. Less Amount of Lighting

Significant amount of lighting at the workplace environment is necessary for vision. Studies conducted reveal that there is a positive relation between adequate illuminations at the workplace environment and health (especially eye-sight) of workers. Deficient lighting at the environment results in straining of the eyes which may lead to irritations, tiredness, headache, and accidents (Scott, 1997).

iii. Stuffy Atmosphere

Production environments are exposed to air pollution which is as a result of smoke, gas, dust, vapour, filthy area, excessive crowding, and effervescent from chemicals (Kazi & Haslam, 2013). These materials are harmful to the health of workers. These makes the workers susceptible to physiological and biochemical changes to conditions such as: sneezing, coughing, respiratory difficulty, and cardiovascular challenges (Mazerall, 2002). These physiological changes may put stress on the workers.

iv. High Temperature

Extreme environmental temperatures above threshold levels at the workplace become a burden for workers. Their physiological systems are not able to adapt to such changes. Extreme cold temperatures make one sluggish stress, while extreme hot temperatures make an individual to profusely dehydrate and become fatigue stress (Scott, 1997). Results from HRDC's survey in 1998 revealed that average of 54 incidents of time lost occurred at workplaces due to tiredness and heat cramps (Mazerall, 2002).

c. Physiological Challenges of Stress

According researchers, stress brings about physical health and physiological health challenges (Kazi & Haslam, 2013; Allen, 1991). Physiological effects that generally occur from stress include (DeFrank & Ivancevich, 1998; Allen, 1991):

- Rise in perspiration.
- Increased heartbeat and breathing rate.
- Rise in blood pressure.
- Nausea.
- Vibration of limbs.
- High decrease in breath.

Frequent and long period of exposure to stress is a bane to the individual. It can result in severe physiological and long term health dam-

ages. For instance, between 1987 to 1994 in Netherland the percentage of labor who benefited from “disability pensions” as a result of “stress related ” maladies increased from 21% - 30% (Hek & Plomp, 1997). The common physiological and health damages associated with continuous conditions of stress include (DeFrank & Ivancevich, 1998; Allen, 1991):

- Ulcers.
- Diabetes.
- Migraine.
- High blood pressure.
- Flu.

Figure 1: Stress effect on Health

Source: DeFrank & Ivancevich, 1998

It can be deduced from figure 1 that physical health, psychological health and behavioural problems of workers are caused by stress. Physical health systems of individuals such as: immune system, cardiovascular system, musculoskeletal system, and gastrointestinal systems are threatened because of continuous stress. Depression, rage, lack of self-esteem, and nervousness are some of the psychological problems associated with stress. Lastly, behavioural conditions such as truancy, job dissatisfaction, decrease in energy, disruption, and workplace damages (wound) are eminent.

5. CONCLUSION

This comprehensive secondary (literature) review research acknowledged that numerous elements contribute to the stress and stress-related matters of workers in organizations. These elements, among many others, include: the environment, demand from job (task), structure of the organizations, and family-work life balance. Stress has in organizations have a negative impact on the workforce. The intensity of stress on workers correlates with the form and severity of factors that triggers it.

This study concludes that the frequent incident of intense stress on individuals conveys a sequence of disturbing and negative physiological and health consequences. Underlying effect is a reduction in the job performance due to illness, injury, absenteeism, quality control cost, turnover cost, and violence. Evidence of these negative aftermaths is very alarming if management fails to recognize and institute necessary measures and policies to prevent the factors that create this canker.

This study has tried to advance the concept of stress and stress-related issues harboring in workplace environments. This concept has a direct and adverse effect on the health and job performance of workers. Researchers and academicians may investigate more into the concept on stress, to find out the diverse ways and factors to adopt to manage (if not completely eradicate) it at workplace. Stress can be used positively in certain organizations to increase job performance. As stress increases gradually at the initial stage job performance will increase, it reaches a peak then begins to decline. Factors which will cause stress to increase job performance at workplaces should be recognized and supported.

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