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The Effect of Engineering Psychology and Work Physiology on Staff's Occupational Burnout

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Abstract

Organizations face challenges such as globalization, environment changes, cross-cultural diversities and knowledge based economy in today's ever changing world. In today's competitive world, an important instrument for making a change, causing organizations to survive and reaching to intended goals and purposes is the element of human being. Ignoring health and safety at work causes a significant economic loss which has high effects on efficiency. Researches have shown that pain and discomfort feelings due to ergonomics work environment are of major problems in work environments. An inappropriate environment which is polluted to one of major occupational issues which is usually seen in form of reaction to organizational and occupational pressure among human service staff is occupational burnout phenomenon. The purpose of current research is investigating the role of ergonomics in working environment on employees' Occupational Burnout. It is in terms of method for data gathering in area of descriptive – correlational research, and in terms of purpose is applied research. This research is classified in field of researches related to human resources considering the subject of the research. The results obtained for this study showed that there is significant relationship between ergonomics of working environment on employees' Occupational Burnout.

Keywords: Ergonomics of Working Environment, Occupational Burnout, Work Physiology

Introduction:

Human has always liked to be behaved kindly and fairly. Moreover, he likes to be allowed to work in his own way as much as possible. Work environment in organizations has always been an important subject which has been talked about and its importance and also how to make an appropriate environment which is efficient foe human forces has been emphasized. A good environment can affect the growth of staff values and increases their power and efficiency. According to statistics provided by the International Labour Organization, 52 million incidents happen in the world which cause the death of 533000 people (traffic and domestic incidents are excluded from this statistic). Also, 610 million occupational diseases are seen in the world yearly which result in the death of 1100000 people. Also, 4 percent of gross national product is wasted due to mentioned incidents and 1100 diseases. Ignoring health and safety at work

causes significant economic loss which has a remarkable effect on efficiency. Rate of occupational incidents which result in death in developing countries is 3 to 4 times more than that in developed countries. And these incidents are usually unintentional (Shutler & Strubeck).

Work and human are two main and inseparable components which have to be programmed in accordance to each other. Lack of appropriateness and accordance between human capabilities and the type of work he does cause issues and problems such as occupational injuries like musculoskeletal disorders and low rate of efficiency (Hassan Pour, 2004). On the other hand, one of the major occupational issues which is usually seen among the staff in the form of reaction to these organizational pressures and troubles is occupational burnout phenomenon. Occupational burnout phenomenon is the reduction in compatibility power of people with stressful factors and it is a syndrome consisting of emotional and physical exhaustion which result in negative self-concept in people, negative attitude towards the job and lack of connection feelings with clients at work (Saadat, 2013).Therefore, the main problem in this study consider this issue that is there any relationship between ergonomics of working environment and Occupational Burnout or no? Some of common problems in industries consist of inappropriate designing in work environment, lack of conformity between worker's capabilities and job requirements, disadvantageous jobs and work environments, inappropriate designing in human-machine systems and weak management plans. Such problems result in creation of risks in work environment, workers' poor health, and injuries caused by working with equipment, reduction in production quality and cost growth. The purpose of ergonomic is to consider physical and emotional needs and characteristics of humans when designing tools, work equipment and technical tools of work environment so that with the increase in productivity, health, safety and convenience of humans are significantly considered (Mousavi Shahroudi, 2013). Regarding the importance of this variable in relation with occupational stress and burnout in current research, in addition to understanding such an issue, its effects on staff's occupational burnout is studied.

In his research titled the relation between work environment ergonomics and occupational burnout, Ghasemi Nejad (2014) indicated that ergonomic principles observance causes the reduction of staff's stress. In a research about work environment ergonomics, Christopher (2013) mentioned that lack of attention to ergonomic principles and not observing them in work environment will cause high costs for both employer and staff and it will result in reduction of efficiency and increased occupational burnout. The purpose of current research is investigating the role of ergonomics in working environment on employees' Occupational Burnout.

Occupational Burnout

Sadeghian (2008) considers occupational burnout a state of exhaustion or frustration resulted from self-devotion and also life style in work environment or communications which do not end in favorable result. In another definition, occupational burnout is representation of physical and emotional exhaustion which is the result of increased negative occupational trends and loss of sense and interest of people towards the job (Crunny & Juff, 2014). Lloyd and Leslie (2008) believe that occupational burnout happens when performed work seems unclear for the people after a short period. It could also be the result of anxiety, diversity in works related to the person or personal factors.

Frodenburg (1979) quoted from Larson (2012) named following groups in answer to the question:

Which group of staff may suffer from occupational burnout?

Staff and employees who are devoted and committed to the organization and job.

People whom have replaced the organization with their social life.

People who have hegemonic characteristic.

Managers

Process and Stages of Occupational Burnout

1. Honeymoon
It is the time that we have employed in a job and start it with excitement and hilarity. If it is not followed by empowerment, praise, encouragement and satisfaction, the energy starts to get reduced and the person will empty physically and mentally, while he does not notice it.

2. Lack of Fuel
It is the stage in which the person feels lack of energy and job dissatisfaction and exhaustion begin.

3. Chronic Symptoms
This stage accompanies with physiological symptoms. Chronic exhaustion, periodic headaches, acid reflux, anger and major depression are increased in the person.

4. Crisis
In this stage, the person becomes extremely pessimism, doubts to his abilities, becomes sensitive to physical diseases due to disappointment and frustration and grows an elusive mind which runs from confronting difficulties (Soleymani & Sharifi, 2005).

5. Collision to the Wall (Deadlock Stage)
In this stage, symptoms of mental pressures due to occupational burnout become obvious when the person's power of compatibility with the work environment come to an end. It means that the person faces the peril of losing his job (Soleymani, 2013).

Work Environment Ergonomics
Ergonomic is derived from Greek words Ergon meaning work and Nomo's meaning rule and principle. Ergonomic science starts by identifying and studying human beings and examines its physical and mental abilities and limitations. Then, it applies such studies and examinations in designing and making industrial systems, machines and tools with which human works each day (Hart).
Purpose of ergonomic is to take into account physical and mental features and needs of human when designing work tools and instruments and manufacturing and technical systems and also when designing work environment; so that in addition to increased productivity, human's health, safety and convenience will be noticed to as much as possible. Purposes of ergonomic consist of improvement in efficiency, health, safety and convenience of people and increasing mutual efficiency of machines-human-environment. Ergonomic is a multi-system science which is active in four major fields, psychological engineering and physiology of the job (Hart).

Engineering Psychology
It includes chemical and physical environmental factors such as noise, vibration, lighting, weather and chemical materials which affect safety, health and convenience of people (Cock, 2013).

Physiology of the Job
The task of physiologists is to evaluate the rate of hard work and to adjust it with the power and abilities of people (Procketer, 2008).
Characteristics of an Appropriate Work Environment
Usually, it is necessary for people to be prepared a healthy and appropriate work environment, physically and mentally, so that they would work in their work environment with high convenience and efficiency.

Such environments have characteristics which have to be noticed (Procketer, 2008). A fine and favourable work environment can be studied in three aspects:

Physical Aspect
Physical characteristic of work environment are as follows: work space, type of tables and chairs, instruments with which people work such as computer and industrial equipment, layout of tables, separation of spaces based on the workgroups activities and so on. Befitting of these conditions is considered primary prerequisite for people's increased efficiency (Rolinson, 2012).

Salary and Motivation
For Sure, people work to earn money primarily. If all facilities are provided in a work environment but the salary is not appropriate and sufficient, such an environment cannot be considered a favourable work environment and employees should be paid in the standard average salary of the society so to stop this sense of inconvenience (Roth, 2009).

Management Style
Making a healthy relationship between colleagues and the way to manage organizations and managing efficiency can create a healthy work environment and organization's management should try to make a situation for employees to feel job satisfaction. Basically, important functions of human force management are recruitment, retention and promotion (Cohn, 2010).

Proceedings Related to Using Ergonomic

1. Measuring physical aspects of employees such as height, size of body, weight and rate of agility and flexibility of body towards using medical tools and instruments.

2. Measuring mental and personality aspects and features of employees which means analysing different aspects and dimensions such as personality features, interests, job satisfaction, introversion and extroversion, emotional intelligence, logical intelligence and motivation, precepts, subjective assumption and psychopathy of people.

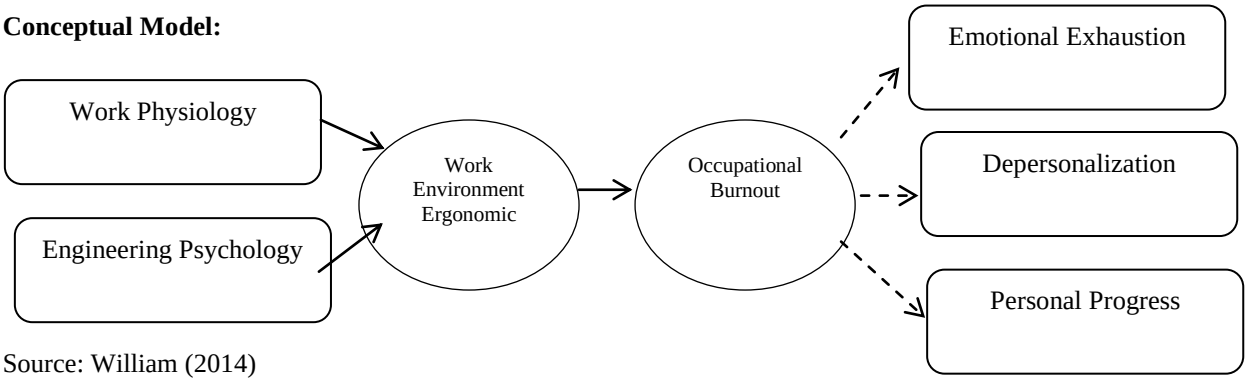
3. Occupational and safety features in organizational jobs should be studied in order to determine what kind of big and small activities, in what degree of size and quality, in what period of time with what rate of effect should be done.

4. Studying physical environment of the job: the issue which is important for operating ergonomic in increased efficiency is how to composite and adjust the components. If imbalance happens in components, the performance and efficiency of employees will drop off and will be one-dimensioned but if mentioned components have balance, synergy would be created in the power of employees and their performance will increase significantly (Akbari, 2002).

Effective application of ergonomic in designing work system can make balance between worker's characteristics and occupational needs. This science covers a wide range in field of designing work, tools, machine equipment, work station and systems in various forms of industrial, educational, sports and so on. The purpose of ergonomic is to consider physical and emotional needs and characteristics of humans when designing tools, work equipment and technical tools of work environment so that with the increase in productivity, health, safety and convenience of humans are significantly considered (Shar'ee). It is obvious that if we notice to such an act, it would be a step towards increased efficiency, reduction of more

occupational injuries and harms in work environment and occupational burnout. The purpose of current research is investigating the role of ergonomics in working environment on employees' Occupational Burnout which act in understanding the effect of work physiology and engineering psychology on staff's occupational burnout. So, a model can be considered for the present research.

Conceptual Model:



Source: William (2014)

Discussion and Conclusion

In this regard, according to results of existing researches and theoretical and practical basis about occupational burnout and studies on this issue, it can be guessed that such a variable can affect the staff mentally and physically which is one of the main reasons for quitting the jobs and lack of favourable job performance. Since there is a relationship between engineering psychology, work physiology and occupational burnout, so observing ergonomic principles may cause the reduction of occupational burnout in the staff. Also, providing a work environment according to ergonomic principles and giving necessary trainings to people in this field result in the reduction of occupational burnout in the staff. This study in terms of purpose is applied research, because the results can be applied in activities and proceedings which result in organizational performance. This research is classified in field of researches related to human resources considering the subject of the research.

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