Job induced stress, disorder & how to manage that stress – A review

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Background: According to World Health Organization (WHO), healthy job is likely to be one where the pressures on employees are appropriate in relation to their abilities and resources, to the amount of control they have over their work, and to the support they receive from people who matter to them. Job induced stress is a growing problem around the world and it may lead to physical, psychological and behavioural symptoms such as depression, anxiety, a drop in work performance, feelings of being tired, frequent absenteeism. Method: A systematic review of the articles published up to 2015 using PUBMED, EMBASE, Scopus and Direct along with manual search through literature contributed to the present study. We focused on studies related to the job induced stress, disorders and how to manage the work stress. Results: We analyzed data from various literature and majority of the literature suggests that there is possibility of stress in a working environment which can lead to several physiological and psychological disorders. However exercising a proper stress management system both at home and workplace can reduce the stress level and help the person to have a healthier mind. Conclusion: On the analysis of different studies regarding job induced stress and disorders, current data give enough evidence to support the fact that stress management both at the individual and organizational level will reduce job stress thereby increasing work productivity.

Introduction

Health is not merely the absence of disease or infirmity but a positive state of complete physical, mental and social well-being (WHO, 1986). A healthy working environment is one in which there is not only an absence of harmful conditions but an abundance of health-promoting ones. These may include continuous assessment of risks to health, the provision of appropriate information and training on health issues and the availability of health promoting organisational support practices and structures. A healthy work environment is one in which staff have made health and health promotion a priority and part of their working lives [1].

Healthy work environments are empirically linked to staff satisfaction, reduced turnover, increased attraction, job satisfaction, and lower degree of job stress and burnout among staffs [2]. The 1980s and 1990s have seen a considerable change in the workforce structure in industrialised economies. Employees are commonly faced with greater demands and less job security, both of which are likely to be stressful, thus psychological disorders especially depression may increasingly be caused by work-related stressors [3].

An adequate balance between catabolic (mobilization of energy) and anabolic processes (growth, healing) is considered necessary for long-term health and survival. In modern society, which is characterized by a rapid pace of life, high demands, efficiency and competitiveness in a global economy, it is likely that lack of rest, recovery and restitution is a greater health problem than the absolute level of stress [4]. In this article we are focusing on the causes of job stress and disorders and the possible measures to be adopted to manage job stress.

2. Job stress

The workplace is an important source of both demands and pressures causing stress, and structural and social resources to counteract stress. The workplace factors that have been found to be associated with stress and health risks can be categorised as those to do with the content of work and those to do with the social and organisational context of work. Those that are intrinsic to the job include long hours, work overload, time pressure, difficult or complex tasks, lack of breaks, lack of variety, and poor physical work conditions (for example, space, temperature, light). Unclear work or conflicting roles and boundaries can cause stress, as can having responsibility for people. The possibilities for job development are important buffers against current stress, with under promotion, lack of training, and job insecurity being stressful. There are two other sources of stress, or buffers against stress: relationships at work, and the organisational culture. Managers who are critical, demanding, unsupportive or bullying create stress, whereas a positive social dimension of work and good team working reduces it [5].
2.1 Job stress induced disorders

2.1.1 Burnout

Work is an indispensable way to make a decent and meaningful way of living, but can also be a source of stress for a variety of reasons. Feelings of inadequate control over one’s work, frustrated hopes and expectations and the feeling of losing of life’s meaning, seem to be independent causes of burnout, a term that describes a condition of professional exhaustion. It is not synonymous with ‘job stress’, ‘fatigue’, ‘alienation’ or ‘depression’. Burnout is more common than generally believed and may affect every aspect of the individual’s functioning, having a deleterious effect on interpersonal and family relationships and lead to a negative attitude towards life in general. Empirical research suggests that burnout and depression are separate entities, although they may share several ‘qualitative’ characteristics, especially in the more severe forms of burnout, and in vulnerable individuals, low levels of satisfaction derived from their everyday work. These final issues need further clarification and should be the focus of future clinical research [6].

![Diagram of the concept model of the relationship between work characteristics, work-home interference (WHI)/home-work interference (HWI) on burnout] [7].

Changes in family structures, the increasing participation of women in the workforce and technological changes that enable job tasks to be performed in a variety of locations have blurred the boundaries between work and home life. For many workers, this has created the potential for interference or conflict to occur between their work and non-work lives (Figure 1) [7].

People undergoing burnout often increase their use of alcohol and other drugs as a way of reducing tension and blotting out strong feelings of hostility and depression. They report more mental problems and often seek counseling over what they perceive to be their personal failing. People experiencing burnout often become involved in increased marital and family conflict as well. Professionals cope with burnout on an individual basis in various ways, such as psychologically withdrawing from difficult situations by intellectualizing, speaking to clients in superficial generalities, taking short breaks when a critical moment arises, and applying a formula rather than developing a unique solution to any given case. Other professionals deliberately engage in special activities that allow them to relax, such as physical exercise, meditating, etc. Development of training programs in interpersonal skills would help to better prepare professionals to work with their clients [8].

2.1.2 Alcohol consumption

Employees who drink heavily or who abuse or are dependent on alcohol can undermine a workforce’s overall health and productivity. To better understand the reasons behind employee abusive drinking and to develop more effective ways of preventing problem drinking in the workforce, researchers have developed a number of paradigms that guide their research. Researchers have developed several models to explain the relationship between work stress and alcohol consumption: the simple cause-effect model, the mediation model, the moderation model, and the moderated mediation model. Of these, the moderated mediation model particularly stands out, because it simultaneously addresses the two fundamental issues of how and when work stressors are related to alcohol use. Recent research supports a relation of work-related stressors to elevated alcohol consumption and problem drinking [9].

Adolescents with work stress (low job satisfaction, and dissatisfaction with perceived personal safety and the safety of their possessions) were more likely to use alcohol. This suggested that adolescents who experienced stress at work had underlying risk factors for problematic alcohol use. The perceived dissatisfaction at work could be caused by characteristics of the work environment such as unsafe work conditions, colleagues, or job roles and responsibilities.

Studies show that the relationship between work stress and alcohol use or drunkenness was moderated by peer influence. Past evidence suggested that these relationships could exist, but never tested the potential interactions [10]. Conversely, lower levels of negative peer influence buffered against potentially negative consequences of work stress for adolescents engaged in employment. Indeed, social support has been shown to buffer individuals from the negative effects of stress [11].
Positive peer influences should be encouraged in order to delay the onset of alcohol use in adolescents. For example, adolescents with friends who work could discourage alcohol use in order to reduce the risk. Adolescents that experienced work stress and negative peer support may be more vulnerable to embracing adverse drinking habits. The influence of these variables had a multiplicative effect and adolescents that exposed to both were more likely to use alcohol [13].

2.1.3. Cardiovascular disease

The relationship between adverse working conditions and CVD has been investigated for many decades, including studies on the effect of physical workload, noise, long working hours, shift work and social job characteristics such as occupational position. Special attention has been given to the role of work stress. The mechanisms underlying the association between work stress and heart disease remain still unclear. Possible pathways are through the direct activation of neuroendocrine responses to stressors or more indirectly through unhealthy behaviours, such as smoking, lack of physical exercise or excessive alcohol consumption [14].

The effort-reward imbalance model considers the impact of labour market conditions on health in addition to the more proximal job conditions. Health risk derives from the mismatch between high efforts at work and low reward received in turn. Rewards concern money, social approval, job security, and career opportunities. Direct evidence of cardiovascular mortality has been lacking. Results from the Whitehall II study showed an association between effort-reward imbalance and incidence of coronary heart disease, as indicated by self reports [28]. Cross sectional findings have revealed associations of effort-reward imbalance with precursors of cardiovascular disease, such as hypertension, high concentrations of low density lipoprotein cholesterol, The effort-reward imbalance model considers the impact of labour market conditions on health in addition to the more proximal job conditions. Health risk derives from the mismatch between high efforts at work and low reward received in turn. Rewards concern money, social approval, job security, and career opportunities. Direct evidence of cardiovascular mortality has been lacking. Results from the Whitehall II study showed an association between effort-reward imbalance and incidence of coronary heart disease, as indicated by self reports [29]. Cross sectional findings have revealed associations of effort-reward imbalance with precursors of cardiovascular disease, such as hypertension, high concentrations of low density lipoprotein cholesterol, lowered vagal tone, and impaired fibrinolytic capacity [30,31,32].

2.1.4. Depression

Work stress appears to precipitate diagnosable depression and anxiety in previously-healthy young workers. Work stress precipitates the occurrence of psychiatric disorder in previous healthy individuals [33]. The mental health effects of work stress, an environment exposure, may vary according to genetic susceptibility. Job demands that exceed the individual’s coping abilities are probably perceived as stressful and could influence the risk of psychiatric disorder through biological, psychological, psychosomatic and behavioural mechanisms. As suggested by animal and human studies, biological mechanisms could involve the dysregulation of stress hormones (i.e. glucocorticoids) [34]. Persistently-elevated stress hormone levels may have direct neurotoxic effects on the brain, particularly in the hippocampus [35] and can induce down-regulation of the glucocorticoid receptor, which impairs affect regulation [36]. Psychological mechanisms include feelings of helplessness, which may result from individual perceived inability to influence their condition [37]. In addition, work stress may lead to symptoms of fatigue, difficulty sleeping, poor concentration, and distress [38].

Two models identifying stressful components of the psychosocial work environment have received particular attention: the job strain model [16,17] and, more recently, the effort-reward imbalance model. In spite of the large body of research on these models [18,19,20,21,22] no previous study has tested them simultaneously in relation to cardiovascular mortality. The job strain model posits that a combination of high work demands and low job control at work, called job strain, is a health risk for employees. The few studies on cardiovascular mortality partly support the model. Alterman et al. showed a moderate prospective association between job strain and fatal cardiovascular disease [23]. Other investigations have linked cardiovascular mortality to a combination of high demands, low resources, and low income [24] to job control only [25] and to neither job control, work demands, nor their interaction [26,27].
Finally, behavioral mechanisms linking work stress to poor mental health might include an inability to engage in leisure activities and to maintain strong social networks [40].

2.1.5. Musculoskeletal disorders

Psychological stress is not only induced by demands that exceed the individual's mental resources, but also by demands that are too low. This is a typical situation of many simple and repetitive work situations in which health problems are common. For example, musculoskeletal disorders such as neck, shoulder and back pain problems are frequent in assembly work, data entry work etc. According to recent real life studies, low job satisfaction, elevated psychophysiological stress reactions and lack of unwinding seem more important for musculoskeletal problems in some simple and repetitive jobs than poor postures and lifting of heavy burdens. Data show that mental stress induces muscular tension, as reflected in EMG activity of the trapezius muscle, and that individuals at risk for musculoskeletal disorders are characterized by lack of unwinding and elevated physiological arousal in non-work situations [41].

Figure 4. Reasons for stress/depression at work [39].

Note: The value 0 reflects that the type of work-related health problem was least often reported, whereas a value of '1' reflects that the type of work-related health problem was most often reported.

Figure 5. Relative occurrence of the type of work-related health problem indicated as most serious health problem in the past 12 months in employed persons (EU27) (LFS 2007) [42].

Hyperventilation (overbreathing) refers to a drop in arterial CO2 caused by ventilation that exceeds metabolic demands for O2. Excessive loss of CO2 (increase in rate of flow of CO2 from cells to lungs) that results from hyperventilation produces a rise in blood pH (i.e., respiratory alkalosis). This disruption in the acid-base equilibrium triggers a chain of systemic physiological reactions that have adverse implications for musculoskeletal health, including increased muscle tension, muscle spasm, amplified response to catecholamines, and muscle ischemia and hypoxia. Hyperventilation is often characterized by a shift from a diaphragmatic to a thoracic breathing pattern, which imposes biomechanical stress on the neck/shoulder region due to the ancillary recruitment of sternoclidomastoid, scalene, and trapezius muscles in support of thoracic breathing.

A hyperventilation theory provides an innovative framework for understanding how job stress contributes to pathophysiological processes that increase the risk of work-related musculoskeletal disorders. With respect to the control of these disorders, a hyperventilation theory has important implications for establishing effective work organization interventions and individual stress-management methods. In this regard, breathing is a biobehavioral metric for assessing whether psychosocial aspects of work organization are in balance with a worker's needs and resources. A hyperventilation theory also provides a unique rationale for coping with job stress and musculoskeletal discomfort through breathing training, light physical exercise, and rest breaks [43].

3. Stress Management

Stress is simply a fact of nature -- forces from the outside world affecting the individual. Hence, all living creatures are in a constant interchange with their surroundings (the ecosystem), both physically and behaviorally. This interplay of forces, or energy, is of course present in the relationships between all matter in the universe, whether they are living (animate) or not living (inanimate). However, there are critical differences in how different living creatures relate to their environment. These differences have far reaching consequences for survival. Because of the overabundance of stress in our modern lives, we usually think of stress as a negative experience. But from a biological point of view, stress can be neutral, negative, or positive.

Stress has driven evolutionary change (the development and natural selection of species over time). Thus, the species that adapted best to the causes of stress (stressors) have survived and evolved into the plant and animal kingdoms we now observe. Man, because of the evolution of the human brain, especially the part called the neo-cortex, is the most adaptive creature on the planet. This adaptability is largely due to the changes and stressors that we have faced and mastered. Therefore, we, unlike other animals, can live in any climate or ecosystem, at various altitudes, and avoid the danger of predators. Moreover, most recently, we have learned to live in the air, under the sea, and even in space, where no living creatures that we know of have ever survived.

For centuries in Eastern religious traditions, the benefits of meditation and other relaxation techniques have been well known. Now, Western medicine and psychology have rediscovered that particular wisdom, translated it into simple non-spiritual methods, and scientifically verified its effectiveness. Thus, one or two 20 to 30 minute meditation sessions a day can have lasting beneficial effects on health. Indeed, advanced meditators can even significantly control blood pressure and heart rate as well.

Elimination of drug use and no more than moderate alcohol use are key to the successful management of stress. We know that people, when stressed, seek these outlets. But, we also know that many of these substances sensitize (make even more responsive) the stress response. As a result, small problems produce big surges of stress chemicals. What's more, these attempts with drugs and alcohol to mask stress often prevent the person from facing the problem directly. Consequently, they are not able to develop effective ways to cope with or eliminate the stress.

In fact, even prescription drugs for anxiety, such as diazepam (Valium), lorazepam (Ativan), or alprazolam (Xanax), can be counterproductive in the same way. Therefore, these medications should only be used cautiously under the strict guidance of a physician. If, however, stress produces a full blown psychiatric problem, like posttraumatic stress disorder (PTSD), clinical depression, or anxiety disorders, then psychotropic medications, particularly the SSRIs, are extremely useful. Examples of the SSRI (selective serotonin reuptake inhibitor) medications include sertraline (Zoloft), paroxetine (Paxil), or fluoxetine (Prozac) [44].
3.1 Individual Stress Management

Most interventions to reduce the risk to health associated with stress in the workplace involve both individual and organisational approaches. Individual approaches include training and one-to-one psychology services—clinical, occupational, health or counselling. They should aim to change individual skills and resources and help the individual change their situation.

A wide variety of training courses may help in developing active coping techniques—for example, assertiveness, communications skills, time management, problem solving, and effective management. However, there are many sources of stress that the individual is likely to perceive as outside his or her power to change, such as the structure, management style or culture of the organisation. It is important to note that stress management approaches that concentrate on changing the individual without changing the sources of stress are of limited effectiveness, and may be counterproductive by masking these sources. For example, breathing deeply and thinking positively about a situation causing stress may make for a temporary feeling of well being, but will allow a damaging situation to continue, causing persistent stress and, probably, stress to others. The primary aim of the individual approach should be to develop people’s skills and confidence to change their situation, not to help them adapt to and accept a stressful situation [45].

3.2 Organisational Stress Management

The prevention and management of workplace stress requires organisational level interventions, because it is the organisation that creates the stress. An approach that is limited to helping those already experiencing stress is analogous to administering sticking plaster on wounds, rather than dealing with the causes of the damage. An alternative analogy is trying to run up an escalator that’s going down! Organisational interventions can be of many kinds, ranging from structural (for example, staffing levels, work schedules, physical environment) to psychological (for example, social support, control over work, participation) [46].

4. Discussion

Stress researchers and physiological ethologists often emphasize that stress is evoked by a perceived challenge to the status quo as well as a physical experience. Since we now more fully understand that not all change is bad and not all stressors are deleterious there is renewed attention to the relationships between stress and emotion [48].

Other studies have found that multiple facets of stress that may work synergistically are more potent than a single facet; for example, in the area of work stress, time pressure in combination with threat [49], or high demand in combination with low control [50].

Stress is a central concept for understanding both life and evolution. All creatures face threats to homeostasis which must be met with adaptive responses. Stressors have a major influence upon mood, our sense of well-being, behavior, and health. Acute stress responses in young, healthy individuals may be adaptive and typically do not impose a health burden. However, if the threat is unremitting, particularly in older or unhealthy individuals, the long-term effects of stressors can damage health. The relationship between psychosocial stressors and disease is affected by the nature, number, and persistence of the stressors as well as by the individual’s biological vulnerability (i.e., genetics, constitutional factors), psychosocial resources, and learned patterns of coping. Psychosocial interventions have proven useful for treating stress-related disorders and may influence the course of chronic diseases [51].

It is clear that all of us are exposed to stressful situations at the societal, community, and interpersonal level. How we meet these challenges will tell us about the health of our society and ourselves. Acute stress responses in young, healthy individuals may be adaptive and typically do not impose a health burden. Indeed, individuals who are optimistic and have good coping responses may benefit from such experiences and do well dealing with chronic stressors [52].

5. Conclusion

Current data suggest that job induced stress can lead to several physiological and psychological disorders. However the implementation of a well planned stress management system at the organisation level will lead to a more work friendly environment which can in turn lead to increased work productivity.

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