



Work related biological stress in workplace: A overview of the causes, the effects, and the stress busters

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Abstract

Industrial world is becoming very competitive. Stress is inevitable in all works of human life. Stress at workplace can be a real problem to the organization as well as for its employees. It may be create physical and psychological issues among employees. These issues slowly start convert in frustration which may be further result in lack of interest in work at workplace and poor job performance. So it is becoming key consideration for any organization to encounter the stress among employees at workplace and implementation of stress management activities. This study focus on Biological background of Stress, and its effects as well as ways to prevent short-term stress becoming a long-term problem. This study found that the majority of employees had job stress in work place due to the poor management and unnecessary interference in the work is the main factors that cause stress. "It's important that organizations support their employees in finding ways to reduce stress, as this does impact upon factors such as productivity and performance in the workplace.

Keywords Biological stress, biological system, hypothalamic-pituitary-adrenal (HPA) axis, workplace stress, symptom of work related stress, stress buster.

INTRODUCTION

Stress is a medical term for a wide range of strong external stimuli, both physiological and psychological, which can cause a physiological response called the general adaptation syndrome. Historically, it was gradually realized that such concepts as anxiety, antagonism, exhaustion, frustration, distress, despair, overwork, pre-menstrual tension, over-focusing, confusion, mourning, and fear could all come together in a general broad term, stress. The use of the term stress in serious and recognized cases, such as those of post-traumatic stress disorder and psychosomatic illness, has scarcely helped clear analysis of the generalized

"stress" phenomenon. Sympathetic nervous output produces the fight-or-flight response, causing the body to divert blood flow to large muscles as the body prepares to run away from or fight something. Less blood flows to the digestive system and other organs that do not assist in fleeing or fighting, producing dry mouth, motor agitation, sweating, pallor, enlarged pupils and over the long term, insomnia. Modern stressors can cause continual sympathetic nervous system activation with very little opportunity for the parasympathetic nervous system to activate [1].

Biological background of Stress

Physiological or biological stress is an organism's response to a stressor such as an environmental condition. Stress is a body's method of reacting to a challenge. According to the stressful event, the body's way to respond to stress is by sympathetic nervous system activation which results in the fight-or-flight response. Because the body cannot keep this state for long periods of time, the parasympathetic system returns the body's physiological conditions to normal. In human, stress typically describes a negative condition that can affect a person's mental and physical well-being.

Stress can have many profound effects on the human biological systems. Biology primarily attempts to explain major concepts of stress using a stimulus-response paradigm, broadly comparable to how a psychobiological sensory system operates. The central nervous system (brain and spinal cord) plays a crucial role in the body's stress-related mechanisms. Whether one should interpret these mechanisms as the body's response to a stressor or embody the act of stress itself is part of the ambiguity in defining what exactly stress is. Nevertheless, the central nervous system works closely with the body's endocrine system to regulate these mechanisms. When a stressor is perceived and interpreted, the stress response system starts up a cascade of biological events. As a result, we release the stress hormones adrenaline and cortisol [2].

In scientific lingo, the stress response system is called the hypothalamic-pituitary-adrenal axis (HPA axis). After perceiving a stressor, a small brain area called the hypothalamus sends a chemical message to the pituitary gland. From here a new chemical message is sent out of the brain through our blood, to the producers of stress hormones called the adrenal glands that sit on top of the kidneys. This message says "secrete cortisol".

Work place Stress

Work-related stress can be caused by various events. For example, a person might feel under pressure if the demands of their job (such as hours or responsibilities) are greater than they can comfortably manage. Other sources of work-related stress include conflict with co-workers or bosses, constant change, and threats to job security, such as potential redundancy.

What one person may perceive as stressful, however, another may view as challenging. Whether a person experiences work-related stress depends on the job, the person's psychological make-up, and other factors (such as personal life and general health) [3].

Work-related stress is a management issue

It is important for employers to recognise work-related stress as a significant health and safety issue. A company can and should take steps to ensure that employees are not subjected to unnecessary stress, including:

- Ensure a safe working environment.
- Make sure that everyone is properly trained for their job.
- De-stigmatise work-related stress by openly recognising it as a genuine problem.
- Discuss issues and grievances with employees, and take appropriate action.
- Devise a stress management policy in consultation with the employees.
- Encourage an environment where employees have more say over their duties, promotional prospects and safety.
- Organise to have a human resources manager.
- Cut down on the need for overtime by reorganising duties or employing extra staff.
- Take into account the personal lives of employees and recognise that the demands of home will sometimes clash with the demands of work.
- Seek advice from health professionals, if necessary.

Dealing with stress in the work place

Initially you need to find out whether other people, who work with you, are affected or not. If there are several people in your work area experiencing symptoms of stress responses which can be:

- Behavioural (e.g. avoiding coming to work);
- Physical (e.g. upset digestive system, palpitations); or,
- Psychological (e.g. irritability, sleeplessness, fatigue, disruption).

The best thing to do is to raise "the matter" with the unit manager. You may want to discuss it with colleagues first and take it up at a staff meeting, where your co-workers can support you. Raise the issue in a constructive way. Make sure you have thought through the problems being experienced by staff, what you think the causes might be and any suggestions you might have for changes to the way work is done in your area which would improve the situation. Even though the solutions you propose may not end up being practical for one reason or another, providing constructive suggestions will show you are willing to help find answers. If you can't think of any ways to make improvements another thing to do would be to tell your manager about Stress Buster and this website. The Resources section contains information about other websites with lots of information on how workplaces can go about tackling these problems.

If your unit manager does not take your concerns seriously or fails to act, or if you do not feel comfortable about raising problems with him or her (perhaps because you feel they are the problem) then raise the problem with someone responsible for occupational health and safety. This could be an occupational health and safety representative or an occupational health and safety co-coordinators or manager. Personnel or human resources management

would be another area to go to. Both OHS and HRM are used to dealing with problems raised by employees or contractors [4].

If after talking to your colleagues you find they are not experiencing stress responses from work, and then it may be there is not a good fit between you and your job, or that for some reason or another you have a poor relationship with your manager. You should still take action by talking to your supervisor about this or someone from HR. Another avenue available in workplaces are confidential counseling services called employee assistance programs which can be helpful. In most cases workplaces will work with you to try and find out what the problem is and make adjustments to address it. On the other hand it may turn out that the cause of your stress is outside work. In this case, through the EAP, your workplace may still be able to help you to find a way to clarify problems and find solutions.

Symptoms of work-related stress:

The signs or symptoms of work-related stress can be physical, psychological and behavioural.

Physical symptoms:

- Fatigue
- Muscular tension
- Headaches
- Heart palpitations
- Sleeping difficulties, such as insomnia
- Gastrointestinal upsets, such as diarrhea or constipation
- Dermatological disorders.

Psychological symptoms:

- Depression
- Anxiety
- Discouragement
- Irritability
- Pessimism
- Feelings of being overwhelmed and unable to cope
- Cognitive difficulties, such as a reduced ability to concentrate or make decisions.

Behavioural symptoms:

- An increase in sick days or absenteeism
- Aggression
- Diminished creativity and initiative
- A drop in work performance
- Problems with interpersonal relationships
- Mood swings and irritability
- Lower tolerance of frustration and impatience
- Disinterest
- Isolation.

Dr. Hans Selye, one of the leading authorities on the concept of stress, described stress as “the rate of all wear and tear caused by life.”

Stress can be positive or negative:

1. Stress is good when the situation offers an opportunity to a person to gain something. It acts as a motivator for peak performance.
2. Stress is negative when a person faces social, physical, organizational and emotional problems [5].

Factors that are responsible for causing stress are called *stressors*.

The major causes of stress at work in the organization:



1. **Career Concern:** If an employee feels that he is very much behind in the corporate ladder, then he may experience stress. If he seems that there are no opportunities for self-growth, he may experience stress. Hence, unfulfilled career expectations are the significant source of stress.
2. **Role Ambiguity:** It occurs when the person doesn't know what he is supposed to do, on the job. His tasks and responsibilities are not clear. The employee is not sure what he is expected to do. It creates confusion in the minds of the worker and results in stress.
3. **Rotating Work Shifts:** Stress may occur in those individuals who work on different work shifts. Employees may be expected to work on day shift for some days and then

on the night shift. That may create problems in adjusting to the shift timings, and it can affect not only personal life but also family life of the employee.

4. **Role Conflict:** It takes place when people have different expectations from the person performing a particular role. It can also occur if the job is not as per expectation, or when a job demands a certain type of behavior that is against the person's moral values.
5. **Occupational Demands:** Some jobs are more demanding than others. Jobs that involve risk and danger are more stressful. Research findings indicate, job that cause stress needs constant monitoring of equipments and devices, unpleasant physical conditions, making decisions, etc.
6. **Lack of Participation in Decision-making:** Many experienced employees feel that management should consult them on matters affecting their jobs. In reality, the superiors hardly ask the concerned employees before taking a decision. That develops a feeling of being neglected, which may lead to stress.
7. **Work Overload:** Excessive workload leads to stress as it puts a person under tremendous pressure. Work overload may take two different forms:
 - a. *Qualitative work overload* implies performing a job that is complicated or beyond the employee's capacity.
 - b. *Quantitative work overload* is a result of many activities performed in a prescribed time.
8. **Work Under load:** In this, case, too little work or very easy work is expected on the part of the employee. Doing less work or jobs of routine and simple nature would lead to monotony and boredom, which can lead to stress.
9. **Poor Working Conditions:** Employees may be subject to poor working conditions. It would include bad lighting and ventilation, unhygienic sanitation facilities, excessive noise, and dust, presence of toxic gasses and fumes, inadequate safety measures, etc. All these unpleasant conditions create physiological and psychological imbalance in humans thereby causing stress.
10. **Lack of Group Cohesiveness:** Every group is characterized by its cohesiveness, although they differ widely in its degree. Individuals experience stress when there is no unity among work group members. There are mistrust, jealousy, frequent quarrels, etc., in groups and this lead to stress to employees.
11. **Interpersonal and Intergroup Conflict:** These conflicts take place due to differences in perceptions, attitudes, values and beliefs between two or more individuals and groups. Such conflicts can be a source of stress for group members.
12. **Organizational Changes:** When changes occur, people have to adapt to those changes, and this may cause stress. Stress is higher when changes are significant or unusual like transfer or adoption of new technology.
13. **Lack of Social Support:** When individuals believe that they have the friendship and support of others at work, their ability to cope with the effects of stress increases. If

this kind of social support is not available, then an employee experiences more stress [6].

Certain factors outside the scope of an organization also cause stress.

The main causes of stress outside work.



1. **Civic Amenities:** Poor civic amenities in the area in which one lives can be a cause of stress. Inadequate or lack of public facilities like improper water supply, excessive noise or air pollution, lack of proper transport facility can be quite stressful.
2. **Life Changes:** Life changes can bring stress to a person. Life changes can be slow or sudden. Gradual life changes include getting older, and abrupt life changes include death or accident of a loved one. Sudden life changes are highly stressful and very difficult to cope.
3. **Frustration:** Frustration is another cause of stress. It arises when goal-directed behavior gets blocked. Management should attempt to remove barriers and help the employees to reach their goals.
4. **Racial, Caste, and Religious Conflicts:** Employees living in areas, which are often prone to conflicts among people based on differences seen in their race, caste and religion do suffer more from stress. In the case of a religion, the minorities and lower-caste people (especially in India) are subject to more stress.
5. **Personality:** We can classify people as 'Type A' and 'Type B'. The 'Type A' people:

- a. They feel guilty while relaxing.
- b. They get irritated by minor mistakes of self and others.
- c. They feel impatient and dislike waiting.
- d. They also multitask and prefer to do several things at one time.

The 'Type B' people are exactly opposite and hence are less affected by stress due to the above factors.

6. **Technological Changes:** When there are any changes in technical fields, employees are under the constant fear of losing jobs or need to adjust to new technologies. It can be a source of stress.
7. **Career Changes:** When a person suddenly switches to another job, he is under stress to shoulder new responsibilities adequately. Under-promotion, over-promotion, demotion and transfers can also cause stress.

Stress buster

Anything that relieves or reduces stresses. Meditation is one of the stress busters in the workplace and also the following habits can remarkably help to relieve stress which relieves, or is designed to relieve, stress; a relaxant.

- Regular meditation,
- Physical exercise,
- Balanced diet,
- Focused thinking,
- Control of anger,
- Managing Depression,
- Maintaining calmness in stressful situations,
- Having a positive attitude towards life,
- Harmony towards self and others, etc.

Tips to reduce employee stress

A certain amount of positive pressure can create a 'buzz' and help drive the job at hand through to completion, but too much stress will cause communication with the employee to break down, altering their ability to plan and do their job well. It can also spread easily around the workplace, having a negative effect on overall staff morale.

Workplace related stress is common, with around one in five people claiming they find their work very or extremely stressful, according to ACAS. Stress management is a way of proactively reducing stress, which can help minimize stress-related costs such as sick days, as well as increasing productivity and keeping your employees well. As an employer, you have duties under health and safety law to control the risks from work-related stress. Here are some tips on how stress can be managed:

Identify the specific tasks and responsibilities of each employee: In order to manage their stress, you need to understand the tasks each employee is juggling with; are they working on a particularly challenging project, or having difficulty adapting to a new way of working? Keep a record of who is carrying out what responsibility at any given time – this way you will know when one person is carrying too heavy a workload.

Conduct in-house training on time management: Poor time management is one of the key drivers behind workplace stress. With effective coaching, however, it can not only help your employees improve their work-life balance, but also their productivity in the workplace - leading to a happier and more efficient workforce.

Encourage an open-door policy: Communication with employees is absolutely key. Always ensure they can come and talk to you about any work stress they are experiencing. Without an open-door policy, staff may be reluctant to approach you to discuss issues, even though many problems can be resolved before they spiral out of control by simply having a discussion. Some firms choose to hold short (10-15 minute) meetings last thing on a Friday to recognize the key achievements of the week and ensure everyone has the option to leave on time.

Offer a pleasant working environment: If you're working off a tight budget, it can seem like an unnecessary cost to invest in nice to haves. However, simple measures can be taken that will significantly improve your working environment; ensure your office is clean and tidy offers drink making facilities.

Allow staff sufficient time off to handle family and personal problems: Always try to be flexible in allowing employees to take time away from work to deal with family and personal issues. These can be very sensitive times for your staff and it's important to ensure they don't come back to work too soon.

Preventing stress in the workplace

- Reduced symptoms of poor mental and physical health
- Fewer injuries, less illness and lost time
- Reduced sick leave usage, absences and staff turnover
- Increased productivity
- Greater job satisfaction
- Increased work engagement
- Reduced costs to the employer
- Improved employee health and community wellbeing.

Stress Busters

The severe stress can damage your body and mind, blocking the fluid communication to and from most organs—especially in the hypothalamic-pituitary-adrenal (HPA) axis and in the limbic system, the brain's emotional center. Which is always keep some stress busters handy.

Simplify Cut your to-do list in half. How? Ask yourself this question after every item: Will I die tomorrow if this doesn't get accomplished? I'm guessing you'll get a lot of no's. I'm sure Franklin Covey has a more efficient and elaborates system. But here's mine: Every morning I immediately jot down my to-do list. Once I experience the first heart palpitation, the list gets cut in half.

Prioritize Let's say you've got five huge work projects due next week, two Cub Scout commitments you promised your son, your mom's overdue taxes on your desk, your wife's 40th birthday celebration to plan, and your sister's computer to fix. What do you do? You

record all the tasks on a sheet of paper or on your computer and you give each one a number between 1 and 10: 10 being the most important (life threatening) to one (stupid bloody thing I signed up for). Start with the 10s. If you never get beyond the 8s, that's okay!

Collaborate and Co-operate There are lots of people out there with to-do lists that look very similar to yours. Why not let them do some of your tasks so that you all don't have to do them? The moms around me have mastered this concept, as they have set up a babysitting co-op: one mom volunteers to watches a neighbor's kid and by doing so earns babysitting points that she can redeem when a neighbor watches her kids. In the blogging world, I have begun to collaborate with some other mental-health writers so that we all don't have to scan the same media outlets for depression-related stories. If I catch something I send it to them, and vice versa. It's an effective system.

Laugh Just as chronic and severe stress can damage organic systems in our body, humor can heal. When people laugh, the autonomic nervous system mellows out and the heart is allowed to relax. Laughter can also boost the immune system, as it has been found to increase a person's ability to fight viruses and foreign cells, and reduce the levels of three stress hormones: cortisol, epinephrine, and dopac. Plus it's just fun to laugh. And having fun is its own stress buster.

Exercise The Exercise relieves stress in several ways. First, cardiovascular workouts stimulate brain chemicals that foster growth of nerve cells. Second, exercise increases the activity of serotonin and nor epinephrine. Third, a raised heart rate releases endorphins and a hormone known as ANP, which reduces pain, induces euphoria, and helps control the brain's response to stress and anxiety. You need not run a marathon or complete an Ironman triathlon. A quick stroll in the morning or in the evening might be just enough to tell the stress hormones in your blood to scatter.

Build Boundaries Speaking of activities, get some boundaries, ASAP—meaning designate a place and time for certain things so that your brain doesn't have to wear so many hats at the same time. I thought this was impossible as a mom who works from home until I made myself abide by some rules: computer is off when I'm not working, and computer stays off in the evening and on weekends. My brain adjusted nicely and appreciated the notice of when and where each hat was required, and it actually started to relax a tad.

Think Globally I don't say this to induce a guilt trip. No, no, no. Guilt trips compound stress. What I mean here is a simple reminder that compared to other problems in our world today—abject poverty in Somalia or Cambodia—the things that we stress about are pretty minor. In other words, if I shift my perspective a little, I can see that there are far worse dilemmas than my poor royalty figures on a few books. Put another way: Don't sweat the small stuff, and most of it is small stuff.

CONCLUSION

Workplace stress is costly and become more so. It has many causes, and these involve complex combination of physical, social, and psychological elements. A stress affect person differently is difficult to measure. Change must come from the top, and it is therefore

imperative for managers to recognize that they have a legal and moral responsibility to protect the physical and mental well-being of their workers. So are policy are initiatives underway and law being written to further establish and institutionalize the discourse of stress, to increase employer responsibility, to develop a new intervention and to empower its many victims. The management of the organizations should try to provide a healthy environment in which employee can perform their job without any stress (stress buster) for success.

REFERENCE

1. Cartwright S, Cooper C L and Murphy L, (1995) 'Diagnosing a healthy organisation: A proactive approach to stress in the workplace', American Psychological Association.
2. Clark, J. (2002). Stress: A management guide. London: Spiro Press.
3. Gaurav Akrani. (2011) kalyan-city.blogspot.com/2011/09/importance-of-international-business.html. Accessed on 29.09.2016.
4. Manisha A. Patel (2015), Workplace Stress and Stress Management among Employees, International Journal of Human Resource Management and Research, pp 25-32.
5. Therese J. Borchard <http://thereseborchard.com/category/depression/> accessed on 25.09.2016.
6. www.theworkfoundation.com Feb 2007 Stress at work.