

A Critical Analysis of the Theoretical Approaches of Occupational Stress

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Abstract

Stress is a common phenomenon that affects almost every individual in the present society. It has negative consequences for an individual to society at large. The gradual increase in the manifestation of negative effects of stress, more particularly in workplaces alarmingly needs an intervention. However, stress is a phenomenon that is yet to be conceptualized in totality. Occupational stress is that component of stress which is related to one's work environment. Increased absenteeism, low productivity, and labour unrest are the consequences of occupational stress.

This paper attempts to present an overview of the theoretical approaches to occupational stress. Further, it also presents a critical analysis of the different concepts of stress with reference to (a) Depth of understanding of the total phenomenon of occupational stress. (b) Angularity to the weightage given to the various interests of multiple levels affected by occupational stress. (c) Varieties in the purpose of study for which the model of occupational stress is designed or is appropriate. (d) Degree of holism in dealing with the phenomenon of occupational stress. It also tries to propose a modification in the definition of stress modeling and intervention.

Keywords: Occupational stress, theoretical approach

Introduction

Stress is today, a universal phenomenon that all individuals have to face in their everyday life. It has adverse impacts at all levels, from a single person to society at large. It is a phenomenon that has witnessed increasing interventions. However, the stress phenomenon is not yet conceptualized in totality. Understanding the meaning and the causes of stress, the nature and its complexities and determinants are essential for maintaining human well-being and effectiveness in the organizational and non-organizational contexts.

Occupational stress or work-related stress has become a major issue from the second half of the 20th century. As a consequence, the studies on stress focus more on the issues within the organization.

The research conducted in the U.S. in 2021 showed that 83% of US workers suffer from occupational stress. Further, one million US citizens miss work each day due to stress. Moreover, Seventy-Six percent of the workers in the US reported that personal relationship is adversely affected due to the stress at the workplace. (AIS, 40+ Worrying Workplace stress statistics 2022: Facts, Causes, and Trends, www.zippiz.com). Stress at the workplace results in approximately 190\$ billion costs in health care yearly and also results in 1,20,000 deaths. American Psychological Association reported that the emergence of the Covid- 19 pandemic has led to the highest level of stress among US adults.

According to WHO, due to stress, nearly 44% of professionals in India were facing financial crisis compared to the world average of 29%; 36% were suffering from mental diseases as compared to the global rate of 28%, and 31% reported that they were disconnected from their own levels against 23% globally.

Occupational Stress is a phenomenon that has been connected with diverse dimensions. It has now been a grave concern to the administration, workers, and other interested parties to the organization. Occupational stress experts are of the view that it is a burning issue in many organizations resulting in increased absenteeism, low productivity, and high health care cost. (Cooper and Cartwright, 1994, Varca 1999, Ornelas and Kleiner 2003).

National Institute of Occupational Safety and Health, U.S.A. (1999) defines occupational stress as "the harmful physical and emotional responses that occur when the requirement for a job do not match the capabilities, resources or the need of the worker."

In the theoretical framework, there are three different schools of thought when it comes to understanding the meaning and defining occupational stress. These three approaches are in some way overlapping (Cox 1993). The first school of thought viewed stress at the workplace as cold-blooded or noxious characteristics of the work environment which causes ill health. It is termed as engineering approach. The second approach conceptualized stress as a common physiological effect of a diverse range of aversive or noxious stimuli. In the first approach, stress is considered as the independent variable and in the second approach, also known as the physiological approach treats stress as the dependent variable. The third one or psychological approach considered stress as the problematic person-environment interaction measured in terms of cognitive process and emotional reactions based on these interactions.

Objectives

The present study attempts to:

1. Highlight the theoretical approaches of occupational stress.
2. Critically analyze the theoretical framework in the following perspectives.
 - a. Depth of understanding of the total phenomena of stress.
 - b. Angularity in the weightage given to the various interests of multiple levels affected by the phenomenon of occupational stress.
 - c. Varieties in the purpose of the study for which the working model of occupational stress is designed or is appropriate, and
 - d. Degree of holism in dealing with the phenomenon of stress.
3. Propose a modification in the definition of stress.

An Overview of theoretical approaches of occupational stress

At the conceptual level, occupational stress cannot be differentiated from stress in general. It is only at the modeling stage that such differentiation is possible.

A review of the stress literature by Lazarus 1966, Appley and Trumbull 1967, Cox and Mackey 1981 and Fletcher 1988 have identified three different concepts of stress; the Engineering concept, the Physiological concept, and the Psychological concept.

Engineering Concept of Stress:

This approach treated stress as a stimulus attribute of an individual's working environment, normally perceived in terms of the degree of load placed on a person or some harmful elements of the environment (Cox 1978, 1990, Cox and Mackey 1981, Fletcher 1988). In 1947, Symond wrote, "Stress is that which happens to a man, not that which happens in him; it is a set of causes not a set of symptoms." Spielberg (1976) also suggested in the same direction that stress may be regarded as the objective element of work situations. This concept suggests that stress generates anxiety in an individual which may be alterable or changeable, but on a certain occasion, it proves to be unalterable and harmful (Cox and Mackey, 1981, Sutherland & Cooper 1990).

Physiological concept of stress

The physiological approach was initially developed by Seyle (1950-1956). He defined the concept of stress as "a state manifested by a specific syndrome which consists of all the non-specific changes within a biologic system", which incurred due to the challenge by harmful and aversive stimuli. Here stress is considered as a physical response manifested through non-specific syndrome. Cox and Cox 1985, Cox and Thirlaw 1983 observed that stress is the activation of mainly two neuro - endocrine systems, the anterior pituitary-adrenal cortical system, and the sympathetic-adrenal

medullary system. Further, Seyle in 1950 and 1956 opined that stress responses have undergone three distinct stages. The first stage is known as the alarm stage (Activation of sympathy- adrenal medullary), the second stage is the resistance stage (Activation of adrenal cortical), and the third and final stage is known as exhaustion (Re-activation of sympathetic-adrenal medullary system). He argued that continuous and intensive elicitation of physical syndrome results in physical illness. Seyle (1956) named it as “the disease of adaption”.

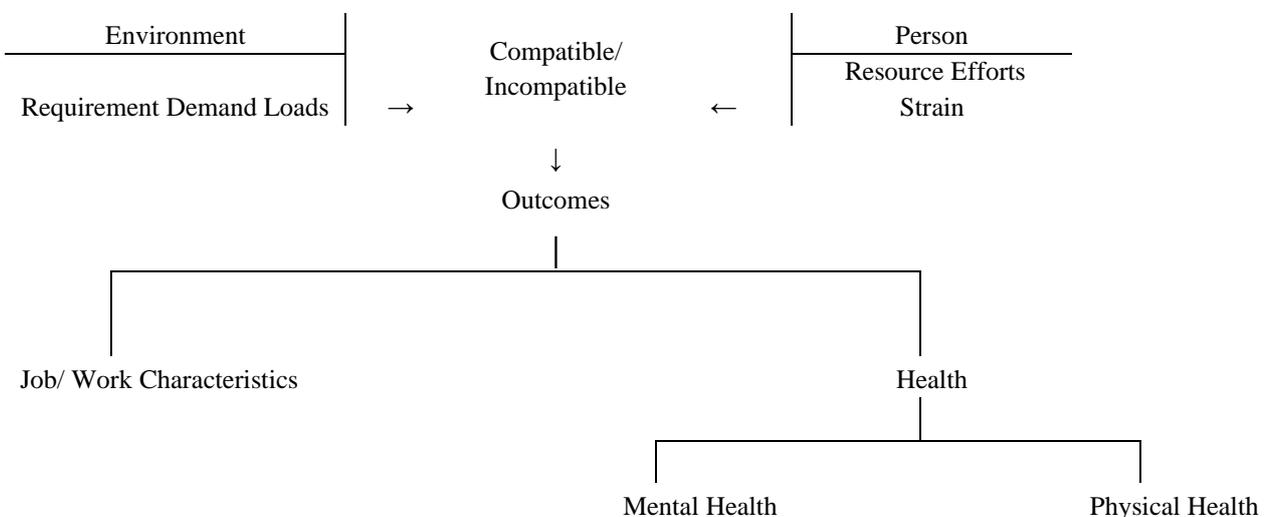
Psychological concept of stress

In this approach, stress is considered as an interactional process between the individual and their work environment. In course of studies, it was revealed that stress occurred because the aversive interaction between individuals and environment manifested in the cognitive process and emotional reactions. There are two most influential and dominant variants of the psychological concept of stress. They are: 'interactional variant' and 'transactional variant'. The interactional concept is based on the structural perspectives of the interaction between the individuals and their concerned job environment. On the other hand, the transactional concept is based on psychological responses as a consequence of interaction. However, the transactional process is concerned with the cognitive process and coping.

In addition to the above three major approaches, there are various models of occupational stress. Some of the major models are discussed below:

Person-Environment Fit Model

In 1951, Lewin was of the view that the degree of stress and its consequent impact on an individual behavior and health is influenced by how an individual interacts with their job environment. Certain modifications of this Person-Environment Fit Model were made by French in 1973. He opined that the proper balance between the individual and his work environment is the primary factor for generating stress in the individual. If in a job environment where the employee's skill and ability, resources, and knowledge adequately fit or match, there is no strain on the employee. However, if these factors are misfit with the individual, stress is generated. Again, if the misfit gap between the individual and the environment broadens (either subjectively or objectively), the greater will be the strain on the employee. Further, this excessive strain leads to different health problems, and consequently, it adversely affects productivity (French, Calpan and Harrison, 1982).



Job Characteristics Model

Job Characteristics Model was developed by Hackman and Oldham in 1980. It emphasized on certain job factors such as skill, variety, identity, task significance, feedback, etc. These job factors are expected to generate psychological issues on the mindset and well-being of the employees. It viewed that the positive or negative aspects of these job factors may lead to some mental state manifested through cognitive or behavioural outcomes such as satisfaction, absenteeism, etc. Further, on the basis of this model, Hackman and Oldham had developed the job diagnostic survey.

The Michigan Model

French and Khan developed this model in 1962 which is also known as 'Role Stress Model' and 'Social Environment Model'. It gives more emphasis on the individual perception rather than the environmental characteristics. According to this model, environmental stressors such as job ambiguity, conflict, lack of participation, etc. are perceived by an individual subjectively and the individual characteristics like demographic, personality, and other social support articulate these an individual's perception to generate health outcomes.

In 1988, Hurrell and Maloney had modified this model, which is known as the NIOSH model. It emphasized how the individual characteristics and the environmental stressors and response outcomes on the role of the objective job place factors.

Demand Control Support Model

The DCS model was developed by Karasek in 1979. In this model, he focused on two factors of job characteristics.

- i. Demand
- ii. Control

It emphasized the structural elements of persons' interaction with their job environment. As such, Cox and Griffith in 1995 termed this model as an 'interactional model'. Karasek was of the view that a high strain situation will occur when there is a high level of demand and a low level of control. This imbalance situation results in a high level of depression and other negative physical outcomes. According to him, a high level of demand and a low level of control interactions determine the level of strain. However, he argued that a high level of control may reduce the level of strain even in a high level of demand situation.

The Vitamin Model

Warr in 1987 proposed this model. He proposed certain job factors which in turn act as a vitamin. There are certain job factors such as salary, security, and task significance where health increases linearly with an increase in 'dose' but after a particular level, the increase reflected neither positive nor negative effect. He argued that the individual characteristic influences the three basic perspectives of this model to a great extent, i.e., content- discontent, comfortable- anxious, and pleased- depressed.

Transactional Models of Stress

Cox and Griffith in 1995 classified the psychological concept of stress into two groups: 'the interactional approach' which considered the structural factors of individual environment relationships and 'the transactional approach' that focused on the cognitive process manifested in terms of mental and emotional process outcomes. The subjective characteristics are dominant in the transactional approach which is mainly influenced by the individual characteristics in coping personality appraisal and control.

The following models are having the characteristics of the transactional approach:

A. Effort Reward Imbalance Model:

Siegrist in 1996 developed this model with primary emphasis on the cardiovascular complaint. This model focused on the subjective characteristics of the environment. It is based on the concept that an individual's effort on the job is compensated by suitable incentives. If such efforts are not compensated with adequate rewards, strain is generated. Rewards encompass money, security, esteem, and job opportunities. On the other hand, efforts are extrinsic and intrinsic efforts. Extrinsic efforts are generated from external motivation and external pressures (Overload) from the environment whereas intrinsic efforts are generated from personal motivation.

B. The Cognitive Theory of Psychological Stress and Coping

The psychological concept of stress developed by Lazarus and Folkman is based on the interrelationship between an individual and the environment where stress is the outcome of psychological and emotional state. The basic concept of this model is "appraisal" and "coping". According to Folkman et. al in 1986, there are two stages of appraisal. In the first stage of appraisal, the interactions are subjectively assessed to verify the conditions with reference to probable risk which is influenced by the individual characteristics, as the stress is viewed as individual specific. Perk and Folkman (1997) observed that when the situation is assessed as potentially stressful, the secondary appraisal occurs. In this situation, the person assesses whether the probable harm can be avoided or altered or prevented.

C. Cox Transactional Model

Cox and his co-workers have developed in 1997 a model which includes the factors of P-E-F concept. Here, the input factors such as work condition demand and support, the organizational internal resources and individual characteristics are treated as basic interactional variables which are assessed on the basis of 'fit' or 'misfit'. The subjective analysis provides an opportunity to view the stress responses in psychological dimensions. It analyses the nature of conflict in terms of emotional reactions and motivation.

D. Demand Skill Support Model

Van Velhoven (2005) had proposed this model which was based on DCS model proposed by Karasek and Theorell in 1990. It relates the demand characteristics to physical and strain outcomes. It considers a limited number of factors to forecast stress in a diversified job situation. Van Velhoven was of the view that there are four factors, i.e., physical demand, time demand, social interaction and utilization of skill which are mainly responsible to predict stress outcomes; whereas the other factors have no significant role in this direction.

E. Demand Induced Strain Compensation Model

This model was developed by D.Dedjohge in 2000 which inherit most of the characteristics from DCS and ERI model. It found that the sub-elements of the DCS and ERI model have some significant effects on forecasting emotional and physical outcomes and job satisfaction. The basic and the most important concept of this model is that there are different variety of demand and resources available in a job environment and each one should be matched such as physical demand by physical resources, emotional demand by emotional resources and cognitive demand by cognitive resources. He argued that the balance or match between these forceful demand and resources interactions results in emotional outcomes.

F. Job Demand Resource Model

In 2001, Demerouti, Bakker, Nachreiner and Schaufeli took the cues of different existing models and psychological characteristics to verify how work demand and work resources induce health complaints and institutional commitment. It argued that work-demand may be physical or social factors of a job that needs efforts. As such, it has physical and psychological cost. The institutional resource which indeed helps to achieve the job-goal, decrease the demand and thereby leads to overall development of the organization. A resourceful job-condition stimulates the process of motivation.

Analysis and Discussion

Conceptual Evaluation

All reviews of stress studies point out a great variety of and lack of consensus in the definition of stress. It is a great opinion that these definitions can be categorized into three groups- the engineering concept, physiological concept, and psychological concept. Most reviewers considered these categories as a different school of thought and go about comparing and contrasting them and evaluating their relative merits and demerits. But few have viewed these varieties as normal conceptual evolution where one leads to another and proceeds till a comprehensive framework has been attained.

The term stress may be defined in as many ways as there are workers, but the fact remains that it is a part of the cause-medium- effect framework where causative factors (environmental stimuli) act on a medium (the individual) and produce certain effects on him/ her.

The earliest observation was that certain 'aversive' or 'noxious' characteristics of the environment produced a number of negative effects on the individual. Quite naturally, the earlier studies focused on these environmental factors. This focus on causative factors led to the term 'stress' being equated with environmental characteristics. This was in keeping with the engineering definition of the term and hence the concept was categorized as 'engineering concept.' It must be noted, however, that the engineering concept focused on the cause component of the total phenomenon at the cost of other components. Significantly, the interaction between the components was entirely neglected.

As studies proceeded, the focus shifted from environmental characteristics to the effect/ response component of the total phenomenon. The shift in focus may have been due to a number of reasons:

- a. Lack of studies on the effect component till then.
- b. Greater amenability of effects- particularly the physiological ones for measurement.
- c. The realization that it is our concern with the effect component that has generated our interest in the phenomenon in the first place and hence this component needs to be focused upon.

With the shift in focus, the connotation of the term 'stress' also underwent a change and came to be equated with a response. Physiological responses being most amenable for measurement received the maximum attention. So, this conceptual paradigm came to be known as the physiological concept. Like the engineering concept, this concept too overlooked the medium on which the causes operated and the effect was produced, i.e., the individual. It also failed to take into consideration the interaction of the various components of the total phenomenon.

As studies on the response to aversive environmental factors multiplied, it soon became apparent that responses varied from individual to individual. Attempts to explain these variations led to pay increased attention to the medium. This, in turn, led to the third concept of 'stress' which was based on the view that an individual does not respond to stimuli as such, but to his/ her perception of the stimuli and their implications. Since perception varied from person to person, responses too varied. As perception involved a cognitive process and emotional reaction, this concept came to be known as the psychological concept of stress.

Variations may be grouped variation or individual variation. Interest in group differences led to the interactional approach while interest in individual variations led to the transactional approach within the psychological concept of stress. It may be noted that the transactional approach went beyond the interactional approach by dealing with not only the structural characteristics of a person-environment interaction that is formed the basis of the interactional approach but also the psychological mechanisms underpinning these interactions.

The discussions above make it clear that the variety in the concept of stress does not represent a different school of thought, but an evaluation towards comprehensiveness with the transactional approach being the most comprehensive to date.

Angularities in the Concept of Stress

All models relating to occupational stress view stress as being a result of person-environment misfit and are designed to guide intervention for establishing a fit. The engineering concept viewed the effects of the environmental factors in the subject as entirely dependent on the nature of the environmental factors- not on the subject. An important corollary to this concept is that to mitigate the effect of stress, intervention needed to focus on the environment, not on the subject.

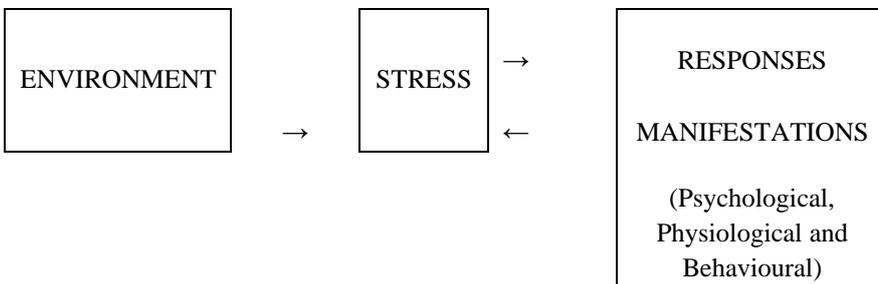
In the context of occupational stress, the environment is management-directed and aimed at maximizing profit. The contention that mitigation of the effect of stress calls for re-orientation of environmental factors indicates a total focus on the interest of the employees to the exclusion of that of the management. While this may sound very altruistic in the short run, it may turn out to be detrimental to the well-being of the employees in the long run if it leads to disruption to the economic viability of the organization.

Both the engineering and physiological concept of stress view stress as being a part of a bipolar system with environment and response being the two poles. Both viewed particular environmental factors to produce a specific response in all individuals. The model can be diagrammatically represented as follows:



The difference between the two lay mainly in whether the causative factors or their effects were focused upon, as in nomenclature. Thus, we see that the physiological concept is the variant of the engineering concept. The same angularities that affected the engineering concept affected the physiological concept too.

The psychological concept of stress viewed stress as part of a tripolar system. Environmental factors (first pole) generate stress (second pole) – an internal psychological effect- which in turn generate a response (third pole) – psychological, physiological, and behavioural. The three poles have an interactive relationship between themselves. While stress generates responses, the nature of the response determines the degree of stress. The concept can be diagrammatically represented as follows:



The psychological concept differs from the other two concepts in a way that it did not believe in a one-to-one relationship between environment and response. It further held that the response of an individual is modifiable. The logical conclusion is that to mitigate stress, the intervention did not need to focus exclusively on modifying the environmental factors. Rather, the same could be achieved by altering the response of the individual. This conclusion indicates a focus on the interest of both management and the employees. However, profit maximization remains a hallowed background philosophy.

Variation in stress models in terms of the difference in perspective:

Models of stress seek to:

- a. Make an all-inclusive integrated presentation of the stress-related factors, processes, and mechanisms.
- b. Predict the development of stress in groups or individuals.
- c. Guide intervention efforts.

To be successful at first, a model must be extensive as well as intensive in its coverage. In other words, it must not only incorporate all the aspects of the total phenomenon but must also include the details of the factors, processes, and interactions.

To be successful as a predictive tool and a guide to intervention, the model must have simplicity, i.e., it must be based on a minimum number of observable and measurable parameters having a strong correlation with the degree of stress. In spite of all stress-related studies, it is a fact that the micro details of the factors, processes, and mechanisms are yet to be fully understood and measurement of stress remains problematic. It appears that the interest in a particular aspect of the total phenomenon of stress and variety of purposes has led to the various models of stress.

The Michigan model and person-environment fit model were interactional models that sought to make a comprehensive depiction of the phenomenon; however, it fails to incorporate defensive mechanisms such as denial, reappraisal of need, and coping.

Efforts at constructing simplified models with predictive value led to a variety of models like the Demand Control Support (DCS) Model, Job Characteristics Model, and Vitamin Model. On the other hand, the development towards comprehensiveness led to the emergence of the transactional models of which the cognitive theory of psychological stress and coping is perhaps the most theoretically influential. Attempts at making the transactional models more application-oriented, i.e., making them simpler, led to Cox Transactional Model, DSS Model, DISC Model, Job Demand Resource Model, etc.

Degree of Holism in dealing with the phenomenon of Occupational Stress

A discussion on the degree of holism in dealing with the phenomenon of occupational stress will have to take into consideration the following in addition to the stressor- appraisal- stress- defense- affect interaction.

- a. Concern with occupational stress is application-oriented. It is because occupational stress affects productivity and profitability with which we are concerned, and so our deliberations are expected to contribute to the evolution of an effective intervention strategy. Hence, a working model of occupational stress needs to incorporate a component of intervention in it.
- b. For making effective recommendations for stress reduction, the economy of stress needs to be quantified and highlight the cost of stress amongst employees, cost of remedial measures, and the expected gain from the remedies have to be analyzed. Since economic considerations are central to the nature and extent of intervention, economic factors need to be incorporated in the model of occupational stress.
- c. Occupational stress cannot be abstracted from stress in general. A worker with a high level of background stress will have a lesser tolerance for stressors than one with low-level background stress. So, a working model of occupational stress needs to incorporate the component of background stress in it.
None of the important models of occupational stress has seriously attempted to incorporate all these considerations while simultaneously trying to keep the model operationally simple. The matter is compounded by the fact that stress has been defined as a reliable measurement to date.

Towards a New Definition:

The first step in the concretization of a concept is the definition. It is the definition that leads to and guides detailed conceptualization, which in turn guides the development of a working model that permits intervention strategies. When a

conceptualization gets more detailed, a definition too may develop. But at this point, we must have a working definition incorporating all the basic elements of our conceptualization uptill that time.

The discussion so far points directly or indirectly to the following aspects associated with our present day understanding of the phenomenon of stress.

- a. Stress is a psychological state which is yet to be understood and hence still not definable in concrete, universally acceptable terms.
- b. Stress, being indefinable yet, cannot be directly measured to date. But stress produces a large variety of effects through complex and integrated processes. It is the effect of stress which can be measured.
- c. The effect of stress varies from person to person.
- d. Stress is modifiable.
- e. Occupational stress cannot be isolated from the general phenomenon of stress, and so the parameter of background stress should be given its due weightage. This is particularly true in slow-moving economies where occupation constitutes an aspect of life with a relatively lesser primacy as compared to fast-moving economies.
- f. Since our interest in occupational stress stems primarily from the need for intervention, stress economic parameters encapsulated in an expected cost-benefit ratio, need to be given their due importance.

All these six aspects need to be addressed by a working definition of stress.

Conclusion

The discussion above makes it clear that the variety in the concept of stress does not represent a different school of thought, but an evolutionary process. The evolution of the concept of stress has been towards:

- a. Greater comprehensiveness
- b. Lesser angularity in group interest is being fostered.

The models of occupational stress have shown a two-pronged evolutionary trend.

- a. Towards greater details, and
- b. Towards operational simplicity.

However, the models have failed to take into proper account the issues of background stress and to incorporate stress-economic parameters that could have given the models a greater holism. Future developments are likely to take place in this direction.

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