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# Stress: Concepts, theoretical models and nursing interventions

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**Abstract:** Stress is a fact of everyday life and it can be defined either as a reaction or as a stimulus. Over the years and with the progress of science many factors have been identified as sources of stress, such as Biological, Chemicals, Microbial, Psychological, Developmental, Socio-cultural and Environmental. Purpose of this study is to present the basic concepts and the main theoretical models of stress, its effects on the individual, the coping strategies and the nursing methods of addressing it. The main theoretical approaches for stress are interpreting it differently, either as a stimulus, as a response or as a transaction. Nurses, after the recognition of patients' needs and reactions, should choose those interventions that will be the most effective for each particular patient. Most important interventions for alleviating stress are: anxiety reduction, anger management, relaxation and sleep, proper diet, physical exercise, relaxation techniques and effective time management.

**Keywords:** Stress, Concept of Stress, Theories of Stress, Stress Results, Nursing Interventions

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## 1. Introduction

The term of Stress was first used back in the 17th century as to describe the "sorrow, suppression, discomfort and adversity" [1]. In the 19th century the term was reformed and among other, had the meaning of a strong influence exerted on a physical object or on a person [2].

Now days it can be said, that stress is a global phenomenon and it is the result of positives or negatives life's experiences [3]. The concept of stress is significant because it provides a way of understanding the person as a whole in life's various changes [4].

Purpose of this study is to present the basic concepts and the main theoretical models of stress, its effects on the individual, the coping strategies and the nursing methods of addressing it.

## 2. Concept of Stress

Stress is defined either as a reaction or as a stimulus [1]. As a reaction the meaning of stress is consubstantial with specific changes that human biological system is

experiencing [5]. As stimulus, the definition of stress is related to environmental events that cause those changes. The stressful events can be acute, chronic, remitting and continuous chronic form [6].

## 3. Stress Sources

There are many sources of stress [7]. Some examples of stressful stimulus are listed below [2].

Biological: illness, surgery, pain, exposure to excessive cold or heat, intense muscle activity, sensory overload (e.g. noise pollution), accident.

Chemicals: medications, toxic substances, contaminated food and water.

Microbial: viruses, bacteria, parasites.

Psychological: real, fantastic or predicted unpleasant events e.g. illness, death, separation, divorce, failure, unpleasant feelings of fear, anger, internal conflict, threats to self-esteem and body image, feelings of inadequacy, addiction and worthlessness.

Developmental: Premature birth, anatomical defects, growth inhibition, childhood or thirdage.

Socio-cultural: disturbed interpersonal relationships, social competition, business pressures, and economic difficulties, rapid changes in social and moral values, immigration, relocation, removal, and hospitalization.

Environmental: unemployment, air pollution, urban life, natural disasters, war, unhealthy residence extreme weather conditions.

One person can assess an event as stressful, while for another person is not [8]. Furthermore, the same person considers one event as stressful sometimes, while under other conditions the same event cannot charge him emotionally [9]. Although there are situations that can affect most of the people, everyone seems to interpreting and assessing each situation according to its own subjective criteria and addresses it by his own unique way [10,11].

Stress factors can broadly classified as internal or external, developmental and circumstantial. Internal stressors are generated within the person, for example a cancer. External stressors are generated outside the individual, for example a death in the family. Developmental stressors appear on predictable times during the life of the individual and circumstantial stressors are unpredictable and may appear at any time of one's life (death, marriage, divorce). The extent to which some of these events can have positive or negative effects depend mainly on the individual's developmental stage [12].

## 4. Main Theories about Stress

The theoretical models that have been formulated for interpreting stress are helping to identify stressors in a particular situation and predicting the possibility of an individual's adaptation to stressful situation [13]. Three are the main theoretical approaches for stress, each one interprets stress differently either as a stimulus, as a response or as a transaction.

### 4.1. Stimulus Based Models

In these models the stress is interpreted as a stimulus, a life event or a group circumstances which may awakens normal and / or psychological reactions, which may increase the vulnerability of the individual to disease. According to Holmes, there are 43 life events or lifestyle changes, which can cause stress [7]. According to this theory, both positive and negative life events are considered stressful. The scale of stressful life events is used to record the recent stressful experience of the individual, such as divorce, pregnancy, retirement [7]. Ever since similar scales have been developed, however they should be used with caution, since the extent of stress, which is embodied to life events depends on the way in which is interpreted by the individual. Moreover, those scales must have been validated in the age and in the socio-economic status, in addition they must have been cultural adapted [14].

### 4.2. Response Based Models

In those theoretical models, stress is interpreted as a response. The definition of stress as a response was developed and described by Selye, who defined stress as a nonspecific response of the body to any kind demands applied on it [15,16].

Selye's model is called General Adaptation Syndrome (GAS). Selye in order to differentiate the cause of stress from the response to this introduced the term "stressor" naming so any factor can cause stress and affect the balance of the individual [16,17]. Selye mentions, due the fact that stress is a state of the body, it can only observed within the changes occurring in it [18]. This full body response general adaptation syndrome, (GAS) is manifested by releasing certain hormones, which resulted is changes in the structure and chemical composition of the body [16,18]. Apart from the adaption of the whole body, it is possible a portion reaction of the body or of an organ to take place. This response to stress is called local adaptation syndrome – LAS [18].

### 4.3. Transaction Based Models

All theoretical models that interpret stress as a transaction are based on the theory of Lazarus, who focused on the fact that there are differences among people in interpretation of stress as a stimulus or as a response [19]. None of the previous theories, according to Lazarus, could exactly explain which factors may lead some people to manage stress properly, while others are not, he stated that there is a lack in theories into the interpretation of the factors that help some people to adjust for a longer period than others in to a stressful stimuli [20].

Despite the fact that Lazarus acknowledges certain environmental conditions as causes of stress for many individuals, however, points out that people and groups of people differ in sensitivity and vulnerability to certain types of events, as well as in the interpretation and in the respond to those events [21]. For the interpretation of the diversity among individuals that are experiencing similar stressful events, Lazarus model is taking into account the cognitive processes that mediate between stimulus and response, as well as the factors affecting these processes [22].

Lazarus cognitive evaluation theory focuses on the individual, the environment and on the simultaneous cognitive evaluation of environmental demands and stimulus response options [20]. According to this theory, a number of external and internal information arriving daily in the neurocognitive level of the body which are interpreted by the process of cognitive evaluation [23,24]. Cognitive evaluation is the process of judgment by which, the level of adjustment methods available that each person has, is recognized. It includes identifying available resources and options, which will help the person to negotiate with potential or actual demands [19]. Upon the initial requirements evaluation, some can be assessed as irrelevant, and other as very stressful or as positive. Stress according to this theory is a process in which

requirements outweigh the adaptive capacities of the individual. The requirements can be either external or internal [22].

In second stage, the evaluation is about the identification of sources and options that the individual has at his disposal. The reassessment is necessary and is the process of continuous redefinition of cognitive evaluation. Factors that influencing the evaluation of the identification can be divided into intrinsic and directly related with the individual. Intrinsic factors can include the intensity of external sources, the directness of conflict and doubt. Factors that are related with the individual are motivations, characteristics, beliefs, cognitive resources and skills [25].

## 5. Stress Results – Indicators

Stress may have biological, emotional, mental, social, and spiritual consequences [26]. Usually the results are mixed, because the stress affects individuals as wholeness [27,28]. Biologically stress can even threaten homeostasis. Stress can cause negative emotions. Mentally can affect the perceptive and possibilities for problem solving. Socially can affect individual's relationships with others and spiritually stress can affect beliefs and moral values [29].

Reactions to stressful events are not necessarily damaging [30]. Situations that can create, a moderate to elevated level of emotional stimulation, are increasing individual's efficiency as they can revitalize it and cause feelings of satisfaction, joy, pleasure. When the emotional stimulation (whether it is positive or negative) reaches high levels, then it can affect the individual's efficiency and if it is held at high levels for a long time, can have negative health impacts [4].

Negative effects on health and performance can also have the very low levels of emotional intensity. It is a fact that people are more efficient during emotionally intense experiences that are faced as a "opportunities" or "challenges" [30].

There is indeed a critical boundary for each person beyond which, when emotional stimulation extends, the efficiency of the individual decreases, feels unproductive and often is, to a greater or lesser extent, disorganized. The extent of disorganization varies from person to person [3, 31]. According to observations that made on the reactions that people have on critical situations (fire, flood, earthquake) showed that the 15% of people during a crisis can function effectively, a 70% rate is showing various degrees of disorganization but still are able to function with some effectiveness and a rate of 15% is totally disorganized [4].

## 6. Coping of Stress

Coping of stress is described as the successful management of problems and stressful situations [24,26]. The coping strategy (coping mechanism) is defined as an innate or acquired response to a changing environment or to a specific problem or a situation [32]. According to Folkman and Lazarus, coping is the perceived and behavioral effort in

order to adjust in specific external or internal requirements, which exceed the individuals' management resources [24].

Two types of coping strategies have been described [33, 34]:

Coping that is focusing in the problem (problem-focused coping): indicating to the efforts for improving some situation by creating changes or taking measures and

Emotional centered coping (emotion - focused coping): includes thoughts and actions that are relieving the feeling. This coping strategy does not improve the situation, but by using it the person feels better.

Coping strategies can also distinguished into long term and short term [35]. Long-term coping strategies can be realistic and constructive. Short-term coping strategies may temporarily reduce stress to a tolerable level, but they are inadequate ways of reality management. Furthermore the may have devastating effect on the individual [36].

Stress coping may be adaptive or maladaptive. Adaptive coping is what helps the individual to deal effectively with stressful events and to minimize the risk deriving from those, while maladaptive coping does not have any positive results in stress management [37].

The effectiveness of coping strategies that an individual may use depends on various factors such as the number, duration and intensity of stress sources, previous experiences of the individual, available support systems and the personal abilities [38].

If the duration of those stressors is extended and goes beyond the coping dynamic of the individual, that leads the person to exhaustion and develops a susceptibility to health conditions. Extended stress can also lead to mental disease [2].

As the coping and defense mechanisms strategies become ineffective, the individual may have difficulties in his interpersonal relationships, problems at work and significant reduction of abilities for addressing essential needs [4,39].

## 7. Nursing Interventions for People that Experience's Stress

Nurses, by recognizing the patient's needs and reactions, they should choose those interventions that it will be the most effective for the particular patient [40-44]. Most important intervention for alleviating stress are: anxiety reduction, anger management, relaxation and sleep, proper diet, physical exercise, relaxation techniques and effective time management [26,45 -47].

### 7.1. Anxiety Reduction

Nurses should take all necessary measures in order to reduce stress and anxiety that their patients experiencing [48]. For example, nurses could encourage patients to take a deep breath before an injection, provide the necessary information before a procedure and offer support to both patients and their families [49-52]. Nurses are aware that direct interventions are necessary for preventing the spreading of

anxiety, in which an individual's anxiety may negatively affect and others around him such other patients, relatives even health professionals [53-55].

## 7.2. Anger Management

Patients that are experiencing stress can often exhibit anger [56]. Managing a patients' anger is one frequent difficulty that nurses face [57,58]. Nursing care of the patients that are experiencing anger is mainly difficult for two reasons:

- Patients rarely are expressing their anger or the cause of it verbally. Instead they are usually refusing treatment, are becoming verbally aggressive, they are demanding and threaten to use violence. Their observations rarely are reflecting the cause of their anger [59].
- Patient's anger can often cause fear and anger to nurses. Thus, nurses are usually responding to it in such way that may increase patient's anger, as to the point of violence. Furthermore, nurses under such circumstances tend act in a way that reduces their own stress and not the patient's stress [60].

Healthcare professionals implementing anger management strategies in patients. Those strategies including understanding the reaction, acceptance of the patient's right to be angry, trying to communicate with the patient in order to identify sources and meaning of anger. Moreover, they apply interventions for reassuring, they use silence and time supply as therapeutic means and last in difficult situations of risk, they intervening in such way in order to ensure patient's, family members and staff's safety [61-65].

## 7.3. Rest and Sleep

Those are two important factors in stress management, because while the body is resting is retrieving the desired energy levels [66]. However, for enable patients to rest, some nursing interventions may be required to ensure comfort, potential pain management and promote to spiritual serenity [58,67].

## 7.4. Nutrition

A healthy diet is increasing body's resistance to stress [51]. In order to reduce negative effects of stress individuals should avoid substances such as caffeine, salt, sugar and fat and include in their diet enough vitamins and minerals [68].

## 7.5. Physical Exercise

A normal exercise can promote biological and emotional health [14,43]. The biological benefits are the improvement of muscle tone, cardiopulmonary function and weight control [4]. Psychological benefits are relieving from tension and relaxation [69]. Generally, health standards are recommending exercise at least three times a week for 30 to 45 minutes [34].

## 7.6. Relaxation Techniques

Many relaxation techniques can be used to relief stress

[70-73]. Nurses can teach those techniques to patients and encourage them to use when they facing stressful situations outside the hospital. Relaxation techniques that are often applied are breathing exercises, massage, progressive relaxation, guiding use of images, biofeedback, therapeutic touch, music therapy, humor and laughter and finally meditation [69,74-77].

## 7.7. Management of Time

People who manage their time properly are experiencing less stress because they feel that everything is under control [58]. Controlling other people's demands is an important element in proper time management, because many times their demands cannot be addressed [59]. Sometimes people need to be taught which demands can fulfill without experiencing any stress, which to negotiate and which to reject [75]. As it comes to time management it is important to consider, what goals can be achieved during the day and which during the week. In addition, it is necessary for people to consider what is important to them and what can be achieved [31].

# 8. Conclusion

For the last decades, the term of stress has enjoyed increasing popularity in the behavioral and health sciences and through the process of time; many treatments have been applied in an effort to address this complex health problem. Yet, we all have experienced stress in our lives some of us more and some less, in a matter of fact stress can be also useful, stimulating, and welcome. It is indeed a common experience, thus to address it doesn't necessarily needs the assistance of a specialist.

Its high frequency and the mixed forms in which it appears impose the need for every nurse and healthcare professional in general to assess patiently and with interesting the variety of issues that may contribute to its appearance such as family, professional and interpersonal problems.

Nowadays nurses have in their possession and can choose through a variety of resources in order to help patients to cope stress. The implementation of proper nursing care and the psychological support for stress is always necessary, regardless of its causes.

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