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# **I. INTRODUCTION**

## **I.1 MOTIVATION FOR THE CHOICE OF THE TOPIC**

The feeling of success in life depends a lot on each of us, on our own sense of values, of the goals to be pursued. Several " *roads lead to Rome* ", but what for some is a success, for others it is not!

When the reaction to stress is appropriate, it efficiently prepares the action, giving the individual more attention and vigilance, more energy for reflection and intervention.

When the reaction is too intense or lasts too long, problems such as: insomnia, permanent tension, diarrhea, organic disorders (gastritis, ulcer, diabetes, etc.) appear.

When chronic stress sets in, fatigue and depression appear (especially when the subject enters the exhaustion phase). Then the individual resorts to the consumption of " *miracle* " substances : tobacco, alcohol, coffee, but also tranquilizers.

The quality of life also degrades due to chaotic eating (too much or too little food) and the reduction of sleep time.

In this situation, functional disorders (migraines, allergies, skin problems) are common, and organic diseases can also be added: hypertension, cholesterol, digestive tract disorders, endocrine problems.

Problems in the family, at work and relational problems can often arise.

Stress can be removed, partially or totally, not only with the help of a medical treatment prescribed by the doctor, but also by means of less known methods but effective by their nature.

These lesser-known methods want to highlight the idea that stress can be successfully combated in all people, regardless of gender, profession, the environment they come from, having the possibility of adapting to all types of stress and temperaments.

Knowing the effects of massage on the body and considering that they can be modeled according to the multiple possibilities of adapting the procedures and techniques to the intended purpose, I proposed to study the ways of adapting this means in order to combat the effects of stress.

## I.2 RESEARCH HYPOTHESES

In the research carried out, we started from the premise that in combating stress and its effects, the measures adopted should generally target the patient's lifestyle, aiming at:

- avoiding stressful situations, prolonged emotions, prolonged and exaggerated fatigue;
- the intervention on some mediating variables: asthenia, sedentarism, constipation, mainly due to reduced physical activity;
- reconsidering the attitude towards the prolongation of stress over time towards the abuse of drugs, coffee, alcohol;
- re-evaluating the living environment, wrongly considered as "normal", and switching to a diet rich in vitamins, lots of liquids, walks in the open air, practicing some sports;
- re-education, in the sense of respecting the physiological needs of sleep, defecation, elimination of states of irritability, removal of negative, obsessive thoughts.

It is known that, in the case of the patient's awareness of the mistakes that led to the appearance of some manifestations as a result of the effects of stress, acceptance and compliance with the prescribed measures, he can dominate his "disease " .

In the conditions listed above, however, the body can be helped to remove the effects of stress through interventions with natural, non-medicinal means. Among these means, massage occupies a particularly important place, as it can be adopted in order to achieve various objectives.

**hypotheses** were formulated :

- 1. If the massage is properly adapted, depending on the complexity and intensity of the specific manifestations of the effects of stress on various people, will their removal be achieved quickly and efficiently?*
- 2. If massage is associated with relaxation techniques taken over and adapted from cognitive-behavioral therapies, will a more dynamic adaptation to stress or stressful factors be obtained?*
- 3. If the anti-stress effects of chromotherapy are associated with the adaptations made in the application of the massage, will the results*

*obtained in combating the effects of stress register an increase in efficiency and durability?*

## **I.3 RESEARCH OBJECTIVES**

In order to ensure the possibility of verifying the initially established hypotheses, the conducted research aimed to achieve the following objectives:

- Raising an alarm signal regarding the alert pace of the diversification and intensification of stress manifestations among the population.
- The population's awareness of the risks to which they are subjected by not treating in time or by superficially treating the effects of stress on the body.
- The selection and establishment on an experimental basis of the most effective means and methods to combat stress both within the physical therapy programs and in everyday life.
- The constitution of the results obtained from the research as arguments in favor of the association of anti-stress massage with aromatherapy and conventional therapies.
- Stimulating all the factors involved in ensuring the health of the individual in order to start research on the problem in question, so that the applicability of the method experienced through the present research can be extended on a large scale.

## **II. THEORETICAL BASIS OF RESEARCH**

### **II.1 BODY AND PSYCHOEMOTIONAL REACTIONS TO STRESS**

#### **Bodily reactions to stress.**

From a psychological point of view, the nervous system and the endocrine system, in limited correlation with the hypothalamus, control how we adapt to the environment.

The two vegetative nervous systems (sympathetic and parasympathetic) also participate in the development of the body's responses with cardiovascular (palpitations, increased blood pressure, blood flow to the muscles) and visceral (stomach, intestines, bladder) effects.

The main levels of vigilance in humans are easy to spot on the EEG:

1. The waking state is characterized by an electrical activity of the brain of fast frequency and low amplitude: beta waves (15-30 cycles/sec.).
2. The state of relaxation is characterized by a higher amplitude and a slower frequency: alpha waves (8-12 cycles/sec.). The brain is alert, but not preoccupied. In this state, suggestion and autosuggestion have important beneficial effects.
3. Sleep has several phases:
  - falling asleep, where alpha waves and a new type of slower waves are mixed: theta (4-8 cycles/sec.);
  - the first phase of sleep, where very slow beta waves (3-6 cycles/second) and faster sigma waves (12-15 cycles/second) alternate in connection with the internal activity of the brain (dreams);
  - deep sleep, where only the slowest recorded waves persist - delta (0.5 - 3 cycles/second), when waking up is difficult;
  - a paradoxical phase, where an intense dream activity predominates and where the same electrical activity is found as in the waking state.

In the 30s, researchers focused on the need to locate emotional reactions inside the brain.

In 1937, Papez begins to describe the connections between the limbic system (the oldest area of the brain) in the evolutionary process and the regions of the cortex, in order to represent the internal mechanism of emotion. WRHess proved, in 1955, through experiments on animals, the fundamental role of the

hypothalamus in emotional reactions. Most of the researchers wanted to explain the reactions through closed circuits inside the brain or through hormonal secretions. The work of Pierre and Henri Loo, " *Permanent stress* ", is the synthesis of the results obtained today. In the 1950s, the connections between the waves observed in the EEG and the states of relaxation were demonstrated.

But, what is of practical interest and what characterizes the experience of a stressed person, is the "global response of the body", which integrates all systems: muscular, organic, circulatory, nervous and hormonal.

Edmond Jacobson was the first to adopt this holistic position. He questioned the commonly held idea that following sensory information, the brain orders the muscles to react. He associated with each emotional reaction, " *neuro-muscular reactions* " specific to each person.

These contractions occur simultaneously with the reactions of the nervous and hormonal system and not at the behest of the brain. He also highlighted a "reciprocal interaction", a "bio-feedback" between brain and muscle activities. It can be said that, "organisms react directly to environmental changes", each time through organic reactions (sympathetic system), nervous and hormonal reactions (CNS) and muscular reactions. We must abandon the idea that the brain commands the body to replace it with that of a " *global biological self-regulation* ".

### **II.1.1. PSYCHOEMOTIONAL REACTIONS TO STRESS**

Man has always had the intuition that anxiety, endless hours of work and the conditions in which it is carried out, insecurity and threats of the future, individual conflicts, can cause somatic and mental illnesses. The post-industrialized society, characterized by the rapidity of technological changes, the ever-increasing complexity of tasks and their organizational consequences and the constraints on family life, have exerted a strong influence on the fragile mental and biological balance of human beings, subject to emotional tensions and severe frustrations to overcome.

Individuals face daily attacks of various kinds: losses, frustrations and threats with formidable consequences. The feelings and emotions related to these different external stress factors can bring back into question the individual " *homeostasis* ", that is, the psychic, emotional and somatic balance.

The term " *homeostasis* ", well known in physics, chemistry and physiology, has been extended to psychological and sociological phenomena.

L. von Bertalanffy (1933), systems theorist, formulated a theory of organisms, including living beings and inert matter. There is, he says, a universal tendency towards energy economy, due to the principle of global constancy. Animal cells, plant cells, as well as human settlements, populations and even planets seem to be governed by a homeostatic balance. Von Bertalanffy, makes a distinction between closed systems and open systems, referring especially to

living organisms. These seem to be directed by biological forces (which act on the growth and aging of tissues), which constantly modify the level of homeostasis and the limits of their organization.

This homeostasis tendency involves the achievement of an optimal balance between the instincts related to life and growth (which lead the open system towards an increasingly accentuated understanding) and the instincts related to death (which induce a psychological disintegration of the organism). The leading factor of human personality, which psychoanalysts call Ego, is a synthesis and regulation agency, all the mechanisms described by S. Freud (1982) correspond, by analogy, to those opened by N. Wiener (1984) in terms of feed -back and servo-mechanisms. This level of coordination and synthesis is endowed with complex functions; they allow the individual to perceive and appreciate reality, which involves access to conscious, preconscious and unconscious memories. Only by taking into account external and internal events is the Ego able to appreciate situations of excessive stimulation, as well as unsatisfactory gratifications given to instinctive needs. The main function of the Ego is to maintain the balance of the two integrated subsystems (respectively the physiological and the psychic system of human beings), - which in turn - are integrated into the more complex ensemble of the personality. The ego is, therefore, continuously under the pressure of instinctual demands, somatic needs and threats, and other excessive grievances coming from the internal and external environment. The ego is subject to stress and it is important to know the mechanisms it uses to cope with psycho-emotional tensions.

## II.1.2. BIOCHEMISTRY AND DISEASES OF STRESS

In the course of evolution over several million years, the human being has developed neurobiological mechanisms that allow him to adapt to all changes in the environment, physical, social or psychological.

As for the organism, it must maintain its internal balance (homeostasis) and mobilize the energy necessary for the adaptation process. Man lives in a permanent state of stress; a stimulatory stress. According to Claude Bernard's opinion, <sup>1</sup>" *biological stress is necessary for the biological rhythm and the stability of the internal environment* ", consequently, the deprivation of stimulus or the absence of stress would be equivalent to death. This observation gave birth to the belief in the existence of a " *eustress* ", positive stress. The excess of stimulation is also dangerous and, if it exceeds the adaptation capacity of the human being, it would cause stress diseases or even death. Since the 30s and especially at the beginning of the 40s, researchers have progressively discovered the mechanisms put into operation by the various biological systems to cope

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<sup>1</sup>Deverenco, P., Anghel, I., Băban, A., 1992

with stress situations, and the stress-disease relationship has led to a new dimension of the medical approach classics.



## II.2 SOURCES OF STRESS

Stress, by definition, is a non-specific reaction of the individual exposed to the action of disturbing factors. It is produced at the physiological (heart, lungs, hormones, sweat), psychological and behavioral level - therefore, it trains the functional ensemble of a person.<sup>2</sup>

Stress is not a specific human phenomenon, any animal feels it: the presence of a cat puts a mouse on alert! His heart beats faster, pumps more blood, therefore more O<sub>2</sub> and more energy in the muscles; In this way, the effectiveness of the flight increases, so the chance of survival of the mouse increases. Once rescued from the cat's clutches, he calms down little by little and recovers from the wasted energy by resting and eating... Until the next encounter with the cat! The stress, corresponding to the mouse's first reaction, is in this case intended to ensure the best chance to stay alive. In other words, if he did not react in this way, the cat would have every chance to eat him.

The recovery phase is equally necessary. If the mouse remains in a state of prolonged stress, exhaustion sets in, as incompatible with survival as the absence of reactivity.

Consequently, a good use of stress means having the physiological, emotional and psychological reaction necessary for the action, followed by a sufficient recovery to dispose of this amount of energy in case of need or when it is desired.

This balance between spending and savings is a lot like managing a budget: knowing how to ensure peace of mind and enjoy life with your own money, without completely jeopardizing your savings! Good management ultimately ensures a simultaneous increase in savings and the possibilities to spend.

The difference between man and animal in the face of stressful agents is the possibility that the animal has to react actively, through fight or flight, in time to problems that cannot be solved by an immediate action, the man suffers the ill effects of this change repeated physiological. But man has the ability to consciously react to external conditions, in a more adapted manner when his survival is not directly threatened. He can consciously develop his defense capacity, defusing the animal fight-flight reaction. It is one of the fundamental effects pursued by massage practiced for preventive purposes, along with other relaxation methods.

Professor Hans Selye from Montreal was the first to define stress, in 1990, under the name " *general adaptation syndrome* ". The general adaptation syndrome is the body's response to the aggressions it is exposed to, regardless of the cause and nature of the aggression. This reaction is divided into three phases (fig. No. 1):

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<sup>2</sup>Cungi, Charlie, 2000

### **I. The alarm reaction**

It is the shock reaction, following repeated exposure to external stimuli to which the body is not adapted. Whatever the aggression, the body reacts through physiological changes: tachycardia, decrease in muscle tone, decrease in temperature and tension, gastrointestinal acidity, depression, etc.

These first manifestations are followed by a counter-shock reaction of the body, which has the role of restoring the disturbed balance - for the moment - through contrary manifestations.

### **II. Resistance phase**

It occurs when the body is subjected to prolonged aggression. The resistance vis-à-vis the stressful agent increases, but the body becomes, due to this fact, more sensitive to other aggressions.

### **III. Exhaustion phase**

When exposure to stressful agents lasts too long, the body becomes unable to produce the counter-shock reaction necessary to maintain a balance. Then the rupture phenomenon occurs. The example of a physical stress: a microbe that attacks the skin causes a large local inflammation (redness, swelling, pain), which is a defense reaction, after which it moves to the resistance reaction (abscesses, boils), which limits the extent of the aggression. Finally, a lesion of the skin tissues (fistula) may appear, in the exhaustion phase.